ASSOCIATED DYESTUFF PVT. LTD

S.NO:466/2, VILLAGE: DUDHWADA, TA: PADRA, DIST: VADODARA

Enclosure: 01

Name of product with its Qty

Sr. No.	Name of Product	Quantity in MT / M.
1.	Vinyl Sulphone	500
2.	CPC	500
3.	Alpha Blue	200
4.	Beta Blue	200
5.	CPC Green 7	200
6.	Dyes	800
7.	Direct Turquoise Blue 86	600
8.	Direct Turquoise Blue FBL -199	
9.	Reactive Blue G	
10.	Reactive Turquoise Blue H5G	
11.	Reactive Blue 72	
	[A]	**3000**

For, Associated Dyestuff Pvt. Ltd.

Director

ASSOCIATED DYESTUFF PVT. LTD

S.NO:466/2, VILLAGE: DUDHWADA, TA: PADRA, DIST: VADODARA

LIST OF PROPOSED BY - PRODUCTS

Sr. No.	Name of By Product	Quantity in MT / Day.
1	Hydrochloric Acid	47
2	Ammonium Sulphate	16.4
3	Spent Sulphuric Acid	434
4	Ammonium Carbamate	28.60
5	NaOCl	3.5

ASSOCIATED DYESTUFF PVT. LTD

S.NO:466/2, VILLAGE: DUDHWADA, TA: PADRA, DIST: VADODARA

NAME OF DYES

No.	Name of Dyes	Single stage /Two stage filtration	Qty.
01	Reactive Black B	Single Stage	
02	Reactive Yellow FG	Single Stage	
03	Reactive Red ME_4BL	Single Stage	**600**
04	Reactive Golden Yellow R	Single Stage	**MT/Month**
05	Reactive Golden Yellow ME_4RL	Single Stage	
06	Reactive Orange $ME_2RL(122)$	Two Stage	
07	Reactive Red $ME_6BL(250)$	Two Stage	
08	Reactive Orange H_2R	Two Stage	**200**
09	Reactive Golden Yellow HER	Two Stage	**MT/Month**
10	Reactive Red M_8B	Two Stage	
11	Reactive Orange M_2R	Two Stage	
		Total quantity	**800 MT/Month**

For, Associated Dyestuff Pvt. Ltd.

Director

ASSOCIATED DYESTUFF PVT. LTD

S.NO:466/2, VILLAGE: DUDHWADA, TA: PADRA, DIST: VADODARA

Enclosure: 02

Packing & Final Use of Products

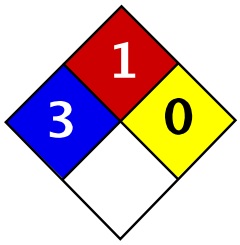
Name of Product	Packing	Final use
Vinyl Sulphone	HDPE BAGS	In chemical industries and In textile Industries for printing and dyeing.
CPC	HDPE BAGS	
Alpha Blue	HDPE BAGS	
Beta Blue	HDPE BAGS	
CPC Green 7	HDPE BAGS	
Dyes	HDPE BAGS	
Direct Turquoise Blue Direct Turquoise Blue FBL Reactive Blue G Reactive Turquoise Blue H5G Reactive Blue 72	Material is packed as per requirement 25 Kg, 20 Kg HDPE bags including liner.	used in Textile Industries, Dyes & Intermediates etc.

ASSOCIATED DYESTUFF PVT. LTD

S.NO:466/2, VILLAGE: DUDHWADA, TA: PADRA, DIST: VADODARA

Enclosure: 03

Material Safety Data Sheet of Products



Health	3
Fire	1
Reactivity	0
Personal Protection	

Material Safety Data Sheet
Vinyl Sulfone MSDS

Section 1: Chemical Product and Company Identification

Product Name: Vinyl Sulfone

Catalog Codes: SLV1171

CAS#: 77-77-0

RTECS: KM7175000

TSCA: TSCA 8(b) inventory: No products were found.

CI#: Not available.

Synonym: Bis(ethenyl)sulfone; Divinyl sulfone

Chemical Name: Ethene, 1,1'-sulfonylbis-

Chemical Formula: C4-H6-O2-S

Contact Information:

Sciencelab.com, Inc.
14025 Smith Rd.
Houston, Texas 77396

US Sales: **1-800-901-7247**
International Sales: **1-281-441-4400**

Order Online: ScienceLab.com

CHEMTREC (24HR Emergency Telephone), call:
1-800-424-9300

International CHEMTREC, call: 1-703-527-3887

For non-emergency assistance, call: 1-281-441-4400

Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	% by Weight
Vinyl Sulfone	77-77-0	100

Toxicological Data on Ingredients: Vinyl Sulfone: ORAL (LD50): Acute: 32 mg/kg [Rat].

Section 3: Hazards Identification

Potential Acute Health Effects:
Very hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation. Hazardous in case of skin contact (corrosive), of eye contact (corrosive). Liquid or spray mist may produce tissue damage particularly on mucous membranes of eyes, mouth and respiratory tract. Skin contact may produce burns. Inhalation of the spray mist may produce severe irritation of respiratory tract, characterized by coughing, choking, or shortness of breath. Severe over-exposure can result in death. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering.

Potential Chronic Health Effects:
CARCINOGENIC EFFECTS: Not available.
MUTAGENIC EFFECTS: Not available.
TERATOGENIC EFFECTS: Not available.
DEVELOPMENTAL TOXICITY: Not available.
Repeated or prolonged contact with spray mist may produce chronic eye irritation and severe skin irritation.

Repeated or prolonged exposure to spray mist may produce respiratory tract irritation leading to frequent attacks of bronchial infection. Repeated exposure to a highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.

Section 4: First Aid Measures

Eye Contact:
Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention immediately.

Skin Contact:
In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Cover the irritated skin with an emollient. Cold water may be used.Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.

Serious Skin Contact:
Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek immediate medical attention.

Inhalation:
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.

Serious Inhalation:
Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. WARNING: It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled material is toxic, infectious or corrosive. Seek immediate medical attention.

Ingestion:
If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.

Serious Ingestion: Not available.

Section 5: Fire and Explosion Data

Flammability of the Product: May be combustible at high temperature.

Auto-Ignition Temperature: Not available.

Flash Points: CLOSED CUP: 102.78°C (217°F).

Flammable Limits: Not available.

Products of Combustion: These products are carbon oxides (CO, CO2).

Fire Hazards in Presence of Various Substances: Slightly flammable to flammable in presence of open flames and sparks, of heat.

Explosion Hazards in Presence of Various Substances:
Risks of explosion of the product in presence of mechanical impact: Not available.
Risks of explosion of the product in presence of static discharge: Not available.

Fire Fighting Media and Instructions:
SMALL FIRE: Use DRY chemical powder.
LARGE FIRE: Use water spray, fog or foam. Do not use water jet.

Special Remarks on Fire Hazards: When heated to decomposition it emits highly toxic fumes of sulfur oxides..

Special Remarks on Explosion Hazards: Not available.

Section 6: Accidental Release Measures

Small Spill:
Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container.

Large Spill:
Corrosive liquid. Poisonous liquid.
Stop leak if without risk. Absorb with DRY earth, sand or other non-combustible material. Do not get water inside container. Do not touch spilled material. Use water spray curtain to divert vapor drift. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed. Eliminate all ignition sources. Call for assistance on disposal.

Section 7: Handling and Storage

Precautions:
Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not ingest. Do not breathe gas/fumes/ vapor/spray. Never add water to this product. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such as acids.

Storage: Keep container tightly closed. Keep container in a cool, well-ventilated area. Refrigerate

Section 8: Exposure Controls/Personal Protection

Engineering Controls:
Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.

Personal Protection:
Face shield. Full suit. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Gloves. Boots.

Personal Protection in Case of a Large Spill:
Splash goggles. Full suit. Vapor respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits: Not available.

Section 9: Physical and Chemical Properties

Physical state and appearance: Liquid.

Odor: Not available.

Taste: Not available.

Molecular Weight: 118.15 g/mole

Color: Colorless to light yellow.

pH (1% soln/water): Not available.

Boiling Point: 234.5°C (454.1°F)

Melting Point: -26°C (-14.8°F)

Critical Temperature: Not available.

Specific Gravity: 1.177 (Water = 1)

Vapor Pressure: Not available.

Vapor Density: Not available.

Volatility: Not available.

Odor Threshold: Not available.

Water/Oil Dist. Coeff.: Not available.

Ionicity (in Water): Not available.

Dispersion Properties: See solubility in water.

Solubility: Soluble in cold water.

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Heat, ignition sources, incompatible materials

Incompatibility with various substances: Reactive with acids.

Corrosivity: Not available.

Special Remarks on Reactivity:
High reactivity with compounds having active hydrogens.
On contact with acid or acid fumes, highly toxic fumes of sulfur oxides are emitted

Special Remarks on Corrosivity: Not available.

Polymerization: Will not occur.

Section 11: Toxicological Information

Routes of Entry: Absorbed through skin. Eye contact. Inhalation. Ingestion.

Toxicity to Animals: Acute oral toxicity (LD50): 32 mg/kg [Rat].

Chronic Effects on Humans: Not available.

Other Toxic Effects on Humans:
Very hazardous in case of skin contact (irritant), of ingestion, .
Hazardous in case of skin contact (corrosive), of eye contact (corrosive), of inhalation (lung corrosive).

Special Remarks on Toxicity to Animals:
Lethal Dose/Conc 50% Kill:
LD50 [Rabbit] - Route: Skin; Dose 22 uL/kg

Special Remarks on Chronic Effects on Humans: Not available.

Special Remarks on other Toxic Effects on Humans:
Acute Potential Health Effects:
Skin: Corrosive. Causes skin burns. It can be absorbed through the skin. May be fatal if absorbed throurgh skin.
Eyes: Corrosive. Causes eye (corneal) burns. Exposure to vapors causes lacrimation.
Inhalation: It may cause respiratory tract irritation with coughing, wheezing laryngitis, burning sensation, shortness of breath, headache. It may cause chemical burns to the upper respiratory tract. Inhalation may result in spasm, inflammation and edema. It may also affect behavior with symptoms similar to that of ingestion.
Ingestion: May be fatal if swallowed. May affect behavior (headache, somnolence, tremor, convulsions, appearance of intoxication, drowsiness, mental confusion). It may cause renal impairment (nephrotoxicity). It can cause gastrointestinal tract irritation with nausea, vomiting, stomach pain, and cause fluid shifts or fluid losses into the peritoneal cavity from local irritation, producing hemoconcentration.

Section 12: Ecological Information

Ecotoxicity: Not available.

BOD5 and COD: Not available.

Products of Biodegradation:
Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The products of degradation are less toxic than the product itself.

Special Remarks on the Products of Biodegradation: Not available.

Section 13: Disposal Considerations

Waste Disposal:
Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14: Transport Information

DOT Classification:
Class 8: Corrosive material
CLASS 6.1: Poisonous material.

Identification: : Toxic Liquid, Corrosive, Organic, n.o.s (Vinyl Sulfone) UNNA: 2927 PG: I

Special Provisions for Transport: Not available.

Section 15: Other Regulatory Information

Federal and State Regulations: No products were found.

Other Regulations:
OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).
EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.

Other Classifications:

WHMIS (Canada):
CLASS D-1A: Material causing immediate and serious toxic effects (VERY TOXIC).

CLASS E: Corrosive liquid.

DSCL (EEC):
R25- Toxic if swallowed.
R27- Very toxic in contact with skin.
R34- Causes burns.
S26- In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S28- After contact with skin, wash immediately with plenty of water.
S36/37/39- Wear suitable protective clothing, gloves and eye/face protection.
S45- In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

HMIS (U.S.A.):

Health Hazard: 3

Fire Hazard: 1

Reactivity: 0

Personal Protection:

National Fire Protection Association (U.S.A.):

Health: 3

Flammability: 1

Reactivity: 0

Specific hazard:

Protective Equipment:
Gloves.
Full suit.
Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate.
Face shield.

Section 16: Other Information

References: Not available.

Other Special Considerations: Not available.

Created: 10/10/2005 12:15 AM

Last Updated: 10/10/2005 12:15 AM

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819 Featherbrook Court
Sugarland, TX 77479
Tel: (281) 451-6880
Fax: (281) 565-5235

Impex Colors, Inc.

Material Safety Data Sheet

1. Identification of the Product and the Company

Common Name:	Phthalo Green
C.I Name:	**C.I. Pigment Green 7**
C.I. NO.:	**74260**
CAS NO:	1328-53-6
Chemical Name:	Copper phthalocyanine, chlorinated
Supplier:	Impex Colors, Inc. 819 Featherbrook Court Sugarland, TX 77479
Emergency Phone:	Tel: 281-451-6880

2. Composition / Information on Ingredients

Substance:	Phthalocyanine
CAS Number:	1328-53-6
Symbol:	-
Label R-Phrases:	-

3. Hazards Identification

Hazards Designation:
No danger symbols

Particular information pertaining to specific risk for Human and Environment:
The product is not a substance subject to mandatory marking in accordance with EEC – directives 67/548 and 88/379 or amendments.

4. First Aid Measures:

Eye Contact:	Flush with water. Get medical attention.
Skin Contact:	In case of contact with skin wash off immediately with soap and water. Seek medical attention if irritation persists.
Inhalation:	Remove from exposure immediately. Use a bag valve mask or similar device to perform artificial respiration if needed. Get medical attention.

5. Fire Fighting Measures

Flammability Class:	Not flammable
Suitable Extinguishing Media:	No restriction
Special Protective Equipment:	No particular measures required
Unusual Fire / Explosion Hazards:	Dust/Air mixtures may ignite or explode
General Hazard:	Improper handling of any finely divided organic pigment may lead to dust and cloud formation which may be an explosive hazard

6. Accidental Release Measures

Environmental Precautions:	Collect spilled material in appropriate container for disposal. Keep out of water supplies and sewers. Keep unnecessary people away, isolate hazard area and deny entry.
Methods for Cleaning up/Collecting:	Remove mechanically, take-up residues with absorbing material.

7. Handling and Storage

Information for Safe Handling:	Normal precautions taken when handling chemicals should be observed.
Information about protection against explosions and fires:	The product is non-flammable.

8. Exposure Controls and Personal Protection

Respiratory Protection:	Dust respirator
Ventilation:	Local exhaust or containment
Hand protection:	Rubber Hand Gloves recommended
Eye Protection:	Avoid Eye Contact, Safety Goggles recommended
Body Protection:	Impervious clothing

Recommended personal protection in accordance with good industrial hygiene and safety practices

9. Physical and Chemical Properties

Apperance:	Solid
Color:	Green
Odor:	Characteristic
pH:	7.0-8.0
Boiling point:	N/A
Flashpoint:	N/A
Flammability:	N/A
Explosive Properties:	N/A
VOC's:	None
Specific Gravity:	1.8-2.5
Solubility in Water:	Insoluble

10. Stability and Reactivity

Stability and Reactivity:	Stable under normal conditions.
Hazardous Decomposition Products:	none.

11. Toxicological Information

Toxicological Test Data: Based upon industry-wide experience and published toxicological studies, organic pigments in general are considered to be practically non-toxic.

Effect of Exposure: Acute Toxicity: Oral Rat LD50 > 5000mg/kg.

12. Ecological Information

Mobility: Non-volatile. Insoluble in water. Floats on water.
Persistence and degradability: Not biodegradable
Bio-accumulative Potential: No data available

13. Waste Disposal

Dispose (dump or incinerate) in accordance with applicable federal, state and local regulations.

Contaminated packaging should be emptied of all residues. Following appropriate cleaning, they may be sent to a recycling plant.

14. Transport information

D.O.T. Shipping Name (49 CFR 172.101-102): None
D.O.T. Hazard Class (49 CFR 172.101-102): None
D.O.T. Label: None

The product does not constitute hazardous substance in national / international road, rail, sea and air transport.

15. Regulatory information

Toxic Substance Control Act (TSCA):
All of the ingredients of this material have been reported to the U.S. EPA and are included in the TSCA Chemical inventory.

Classification According to EEC Directives:

Danger Symbol and Danger Designation: No Danger Symbols
R-Phrases: None
S-Phrases: None
Additional Information: Not a substance subject to mandatory marking in accordance with EEC Directive 67/548/EEC or amendments.

RCRA:
Not regulated as a hazardous waste under RCRA

EINECS (European Economic Community):
All components of this material are on the EINECS list.

CONEG:
This product is certified to be in full compliance with CONEG legislation for packaging and packaging Ink components regarding hexavalent chromium, cadmium, lead and mercury.

16. Other information

This information contained is provided in good faith. Although it is based on data from sources deemed to be reliable, Impex Colors, Inc. cannot guarantee its accuracy and assumes no responsibility for conditions resulting from its use.

91/155/EC

Enclosure: 04

Name of Raw Material with its Quantity

1. Vinyl Sulphone

No.	Name of Raw Material	Qty. in MT/MT of Product
01	Aniline	0.38
02	Acetic Acid	0.34
03	Chloro Sulphonic Acid	1.51
04	Acetanilide	0.55
05	Thionyl Chloride	0.52
06	Ice	3.88
07	Sodium Bi Sulphate	0.47
08	Ethylene Oxide	0.28
09	Spent Sulphuric Acid (25 %)	0.21
10	Sulphuric Acid (98 %)	0.38

2. Copper Phthalocyanine

Sr. No.	Name of Raw Material	Quantity in MT /MT
1.	Phthalic Anhydride	1.07
2.	Technical Grade Urea	1.49
3.	Cuprous Chloride	0.19
4.	Ammonium Molyblate	0.003
5.	Solvent - Di Chloro Toluene	1.42
6.	Sulphuric Acid	2.38

3. Alpha Blue

Sr. No.	Name of Raw Material	Quantity in MT /MT
1.	CPC	1.05
2.	Salt	0.16
3.	Sulphuric Acid	7.36
4.	NH4OH Solution	2.1
5.	Emulsifier	0.02
6.	Caustic Flakes	0.03

4. Beta Blue

Sr. No.	Name of Raw Material	Quantity in MT /MT
1.	CPC	1.02
2.	Solvent - Iso Butyl Alcohol	1.78
3.	Caustic Flakes	0.005
4.	Surfactant	0.02

5. CPC Green 7

Sr. No.	Name of Raw Material	Quantity in MT /MT
1.	Copper Phthalocyanine	0.56
2.	Aluminium Chloride	1.86
3.	Cupric Chloride	0.0832
4.	Chlorine	1.4
5.	Caustic Soda lye (48 %)	1.4
6.	Solvent - MCB	0.3
7.	Dispersing Agent	0.03
8.	Common Salt.	0.4

6. Direct Turquoise Blue (Blue -86)

Sr. No.	Name of Raw Material	Quantity in MT /MT
1.	CPC	0.5
2.	Oleum	2.75
3.	Caustic Flakes	0.375

7. Direct Turquoise Blue FBL (Blue -199)

Sr. No.	Name of Raw Material	Quantity in MT /MT
1.	CPC	0.58
2.	CSA	2.35
3.	PCl3	0.10
4.	Liquid Ammonia	0.54

8. Reactive Blue G (Blue -21)

Sr. No.	Name of Raw Material	Quantity in MT /MT
1.	CPC	0.33
2.	CSA	1.32
3.	PCl3	0.16
4.	VS	0.30
5.	Sodium Bi Carbonate	020

9. Direct Turquoise Blue H5G (Blue -25)

Sr. No.	Name of Raw Material	Quantity in MT /MT
1.	CPC	0.29
2.	CSA	1.23
3.	Beta Chloro	0.088
4.	Liq. Ammonia	0.44
5.	HCl	0.29
6.	Soda Ash	0.058

10. Reactive Blue 72

Sr. No.	Name of Raw Material	Quantity in MT /MT
1.	CPC	0.49
2.	CSA	1.96
3.	MPDSA	0.31
4.	Cynuric Chloride	0.61
5.	Liq. Ammonia	0.38

For, Associated Dyestuff Pvt. Ltd.
Director

ASSOCIATED DYESTUFF PVT. LTD

S.NO:466/2, VILLAGE: DUDHWADA, TA: PADRA, DIST: VADODARA

DETAILS OF RAW MATERIALS FOR DYES

No.	Name of Proposed Product	Name of Raw Material	Physical Form	Qty. in MT/MT of Product
01	Reactive Black B	Vinyl Sulphone	Powder	0.565
		HCl	Liquid	0.150
		Sodium Nitrate	Powder	0.140
		H Acid	Powder	0.325
		Soda Ash	Powder	0.330
		Ice	-	1.500

No.	Name of Proposed Product	Name of Raw Material	Physical Form	Qty. in MT/MT of Product
02	Reactive Yellow FG	Vinyl Sulphone	Powder	0.440
		HCl	Liquid	0.106
		Sodium Nitrate	Powder	0.100
		SPCP	Powder	0.414
		Ice	-	1.500

ASSOCIATED DYESTUFF PVT. LTD

S.NO:466/2, VILLAGE: DUDHWADA, TA: PADRA, DIST: VADODARA

No.	Name of Proposed Product	Name of Raw Material	Physical Form	Qty. in MT/MT of Product
03	Reactive Red ME4BL	Vinyl Sulphone	Powder	0.255
		Sodium Bi Carbonate	Powder	0.250
		Cynuric Chloride	Powder	0.150
		Sodium Carbonate	Powder	0.088
		Sulpho Tobias Acid	Powder	0.253
		Ice	-	1.500

No.	Name of Proposed Product	Name of Raw Material	Physical Form	Qty. in MT/MT of Product
04	Reactive Golden Yellow R	Vinyl Sulphone	Powder	0.504
		Sodium Nitrite	Powder	0.123
		HCl	Liquid	0.130
		MPDSA	Powder	0.337
		Sodium Bi Carbonate	Powder	0.300

ASSOCIATED DYESTUFF PVT. LTD

S.NO:466/2, VILLAGE: DUDHWADA, TA: PADRA, DIST: VADODARA

No.	Name of Proposed Product	Name of Raw Material	Physical Form	Qty. in MT/MT of Product
05	Reactive Golden Yellow ME4RL	K Acid	Powder	0.385
		Sodium Nitrite	Powder	0.071
		HCl	Liquid	0.073
		MUA	Powder	0.155
		Cynuric Chloride	Powder	0.190
		Vinyl Sulphone	Powder	0.450
		Ice	-	1.500

ASSOCIATED DYESTUFF PVT. LTD

S.NO:466/2, VILLAGE: DUDHWADA, TA: PADRA, DIST: VADODARA

No.	Name of Proposed Product	Name of Raw Material	Physical Form	Qty. in MT/MT of Product
06	Reactive Orange ME_2RL (122)	J Acid	Powder	0.250
		Sodium Hydroxide	Powder	0.038
		Acetic Anhydride	Powder	0.097
		Sulpho Tobias Acid	Powder	0.288
		HCl	Liquid	0.069
		Sodium Nitrite	Powder	0.065
		Sodium Bi Carbonate	Powder	0.160
		Caustic Soda	Powder	0.080
		Cynuric Chloride	Powder	0.185
		Vinyl Sulphone	Powder	0.281
		Ice	-	2.000

ASSOCIATED DYESTUFF PVT. LTD

S.NO:466/2, VILLAGE: DUDHWADA, TA: PADRA, DIST: VADODARA

No.	Name of Proposed Product	Name of Raw Material	Physical Form	Qty. in MT/MT of Product
07	Reactive Red ME_6BL (250)	H Acid	Powder	0.325
		Sodium Hydroxide	Powder	0.120
		Acetic Anhydride	Liquid	0.100
		Tobias Acid	Powder	0.225
		HCl	Liquid	0.073
		Sodium Nitrite	Powder	0.069
		Cynuric Chloride	Powder	0.185
		Vinyl Sulphone	Powder	0.281
		Sodium Bi Carbonate	Powder	0.100
		Ice	-	3.500

ASSOCIATED DYESTUFF PVT. LTD

S.NO:466/2, VILLAGE: DUDHWADA, TA: PADRA, DIST: VADODARA

No.	Name of Proposed Product	Name of Raw Material	Physical Form	Qty. in MT/MT of Product
08	Reactive Orange H2R	NMJ Acid	Powder	0.200
		Sodium Hydroxide	Powder	0.060
		Acetic Anhydride	Liquid	0.080
		Sulpho Tobias Acid	Powder	0.275
		HCl	Liquid	0.060
		Sodium Nitrite	Powder	0.055
		Sodium Bi Carbonate	Powder	0.150
		Cynuric Chloride	Powder	0.175
		Ice	-	2.000

ASSOCIATED DYESTUFF PVT. LTD

S.NO:466/2, VILLAGE: DUDHWADA, TA: PADRA, DIST: VADODARA

No.	Name of Proposed Product	Name of Raw Material	Physical Form	Qty. in MT/MT of Product
09	Reactive Golden Yellow HER	K Acid	Powder	0.350
		Sodium Nitrite	Powder	0.060
		HCl	Liquid	0.070
		MUA	Powder	0.150
		Cynuric chloride	Powder	0.160
		DASDA	Powder	0.325

ASSOCIATED DYESTUFF PVT. LTD

S.NO:466/2, VILLAGE: DUDHWADA, TA: PADRA, DIST: VADODARA

No.	Name of Proposed Product	Name of Raw Material	Physical Form	Qty. in MT/MT of Product
10	Reactive Red M8B	H Acid	Powder	0.325
		Sodium Hydroxide	Powder	0.080
		Acetic Anhydride	Liquid	0.110
		Tobias Acid	Powder	0.225
		HCl	Liquid	0.080
		Sodium Nitrite	Powder	0.075
		Caustic Soda	Powder	0.050
		Cynuric Chloride	Powder	0.190
		Ice	-	3.500

ASSOCIATED DYESTUFF PVT. LTD

S.NO:466/2, VILLAGE: DUDHWADA, TA: PADRA, DIST: VADODARA

No.	Name of Proposed Product	Name of Raw Material	Physical Form	Qty. in MT/MT of Product
11	Reactive Orange M2R	NMJ Acid	Powder	0.270
		Sodium Hydroxide	Powder	0.100
		Acetic Anhydride	Liquid	0.110
		Sulpho Tobias Acid	Powder	0.310
		HCl	Liquid	0.080
		Sodium Nitrite	Powder	0.070
		Sodium Bi Carbonate	Powder	0.170
		Cynuric Chloride	Powder	0.190
		Ice	-	2.000

ASSOCIATED DYESTUFF PVT. LTD

S.NO:466/2, VILLAGE: DUDHWADA, TA: PADRA, DIST: VADODARA

Enclosure: 05

Material Safety Data Sheets of Raw Materials

Material Safety Data Sheet

OLEUM (SULFURIC ACID, FUMING: 30% SULFUR TRIOXIDE)

Date Prepared: 1/20/09 **Supersedes Date: 0/00/00**

1. PRODUCT AND COMPANY DESCRIPTION

RHODIA INC.
ECO SERVICES
CN 7500
Cranbury NJ 08512

Emergency Phone Numbers:
FOR EMERGENCIES INVOLVING A SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT CONTACT: CHEMTREC (800-424-9300 within the United States or 703-527-3887 for international collect calls) or Rhodia CAERS (Communication and Emergency Response System) at 800-916-3232.

For Product Information:
(800) 642-4200

Chemical Name or Synonym:
OLEUM

2. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS Reg Number	OSHA Hazard	Percentage
SULFURIC ACID	7664-93-9	Y	106 - 107
SULFUR TRIOXIDE	7446-11-9	Y	29 - 31

3. HAZARDS IDENTIFICATION

A. EMERGENCY OVERVIEW:

Physical Appearance and Odor:
cloudy fuming liquid, sharp, irritating odor.

Warning Statements:
DANGER! CORROSIVE TO SKIN, EYES AND RESPIRATORY TRACT. CAUSES SEVERE BURNS. HARMFUL IF INHALED OR SWALLOWED. REACTS VIOLENTLY WITH COMMON MATERIALS INCLUDING WATER, ALCOHOLS, BASES AND AMINES. STRONG OXIDIZER. CONTACT WITH OTHER MATERIALS MAY CAUSE FIRE. CONTENTS MAY BE UNDER PRESSURE OF EXPLOSIVE, FLAMMABLE HYDROGEN GAS.

B. POTENTIAL HEALTH EFFECTS:

Acute Eye:
Corrosive. Causes burns, tissue destruction, Can cause blindness.

Acute Skin:

Corrosive. Causes redness, inflammation, burns.

Acute Inhalation:
Harmful if inhaled. Causes upper respiratory tract irritation, lung irritation, chest pain, wheezing, shortness of breath, a burning sensation, tickling of the nose and throat, sneezing, Repeated exposure to high levels of sulfuric acid mist may cause etching of tooth enamel in persons who breathe through their mouths.

Acute Ingestion:
Harmful if ingested. Can cause irritation, abdominal pain, corrosion.

Chronic Effects:
When mists are released from this product they are considered to be probable or suspected human carcinogens (see Section 11 - Chronic).

4. FIRST AID MEASURES

FIRST AID MEASURES FOR ACCIDENTAL:

Eye Exposure:
Immediately flush the eyes with a steady, gentle stream of running water for at least 15 minutes. Hold the eyelids apart during the irrigation to ensure flushing of the entire surface of the eye and lids with water. obtain medical attention, preferably from an opthalmologist. Oils or ointments should not be applied unless directed by physician. Continue the irrigation for an additional 15 minutes if a physician is not immediately available.

Skin Exposure:
Immediately wipe excess material off the skin with a dry cloth and flush affected areas with plenty of water for 15 minutes. Remove contaminated clothing while under the shower. Continue washing with water. Do not attempt to neutralize with chemical agents. Obtain medical attention.

Inhalation:
Remove the person from contaminated atmosphere and assure that the victim is breathing. If breathing has ceased, start artificial respiration. Oxygen, if available, should only be administered by a qualified technician under the direction of a physician. Keep warm and comfortable. Obtain medical attention immediately.

Ingestion:
DO NOT INDUCE VOMITING. If the person is conscious and has no trouble breathing a small (no more than one glass) amount of water may be given. Do not leave victim unattended. To prevent aspiration of the swallowed product, lay victim on side with head lower than waist. If vomiting occurs do not re-administer water. Do not give anything by mouth to an unconscious person. IMMEDIATELY obtain medical attention.

MEDICAL CONDITIONS POSSIBLY AGGRAVATED BY EXPOSURE:
Inhalation of product may aggravate existing chronic respiratory problems such as asthma, emphysema or bronchitis. Skin contact may aggravate existing skin disease.

NOTES TO PHYSICIAN:
All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

This material is an acid. The primary toxicity of this product is due to its irritant effects on mucous membranes.

INHALATION: If cough or shortness of breath occurs, evaluate the possibility of bronchitis or pneumonitis. Chest x-ray and arterial blood gases can be used to determine the presence of pulmonary edema. In severe cases, use of humidified oxygen and assisted ventilation including positive end expiratory pressure (PEEP) may be needed. Parenteral steroids may be useful in limiting the extent of pulmonary damage.

SKIN: Wash exposed area thoroughly with soap and water. Chemical burns from strong acids are generally treated the same as thermal burns.

EYES: Irrigate eyes for 15 minutes with sterile saline. If irritation, pain, swelling, photophobia or lacrimation persist, examination by an ophthalmologist is recommended.

INGESTION: If not already performed by first aid personnel, irrigate mouth with large amounts of water and dilute the acid by having victim drink 4 to 8 ounces of water or milk. DO NOT induce vomiting. Use of gastric lavage is controversial. The advantage of removal of acid must be weighted against the risk of perforation or bleeding. If a large amount of acid (> 1 ml/kg body weight) has been recently ingested, cautious gastric lavage is generally advised if the patient is alert and there is little risk of convulsions. Consultation with a gastroenterologist and/or surgeon is advised. Serious complications such as perforation or stricture of the esophagus may occur requiring care by specialists. Laryngeal edema may develop requiring intubation or tracheostomy.

5. FIRE FIGHTING MEASURES

FIRE HAZARD DATA:

Flash Point:
Not Applicable

Extinguishing Media:
Not combustible. Use extinguishing method suitable for surrounding fire. Recommended (small fires): dry chemical, carbon dioxide, Recommended (large fire): dry sand, water spray (massive amount), Not recommended: water (unless large excess is possible).

Special Fire Fighting Procedures:
Firefighters should wear NIOSH/MSHA approved positive pressure breathing apparatus with full face-piece and full acid-resistant protective clothing. Fight fire from maximum distance.

Unusual Fire and Explosion Hazards:
Not combustible. Strong oxidizers can react with reducing agents or combustibles producing heat and causing ignition. Reacts violently with water releasing heat and corrosive material. The addition of water into a ruptured tank may cause an explosion and the formation of a thick cloud of corrosive, highly toxic smoke capable of travelling long distances.

Hazardous Decomposition Materials (Under Fire Conditions):
oxides of sulfur

6. ACCIDENTAL RELEASE MEASURES

Evacuation Procedures and Safety:
Personnel handling this material should be thoroughly trained to handle spills and releases. Do not direct hose streams into an unignited transportation spill (tank truck or tank car).

Containment of Spill:
Stop leak if it can be done without risk. Dike spill using absorbent or impervious materials such as earth, sand or clay. Dike or retain dilution water or water from firefighting for later disposal.

Cleanup and Disposal of Spill:
Pump any free liquid into an appropriate closed container (see Section 7: Handling and Storage). Exercise caution during neutralization as considerable heat may be generated. Neutralize spill area with soda ash, sodium bicarbonate or lime.

Environmental and Regulatory Reporting:
Large spills should be handled according to a predetermined plan. For assistance in developing a plan contact the Technical Service Department using the Product Information phone number in Section 1. Do not flush to drain. Runoff from fire control or dilution water may cause pollution. Dispose of as a hazardous waste. Spills may be reportable to the National Response Center (800-424-8802) and to state and/or local agencies.

7. HANDLING AND STORAGE

Minimum/Maximum Storage Temperatures:
Not Available

Handling:
Do not breathe vapors and mists. Do not get on skin or in eyes. This product reacts violently with bases liberating heat and causing spattering.

When diluting an acid, ALWAYS add the acid slowly to water and stir well to avoid spattering. NEVER ADD WATER TO ACID.

Storage:
Store in tightly closed containers. Store in an area that is dry, well-ventilated, Freezing point varies with concentration. Maximum recommended storage temperature = 104F (40C). Corrosion rates increase at elevated temperatures.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Introductory Remarks:
These recommendations provide general guidance for handling this product. Because specific work environments and material handling practices vary, safety procedures should be developed for each intended application. While developing safe handling procedures, do not overlook the need to clean equipment and piping systems for maintenance and repairs. Waste resulting from these procedures should be handled in accordance with Section 13: Disposal Considerations.

Assistance with selection, use and maintenance of worker protection equipment is generally available from equipment manufacturers.

Exposure Guidelines:
Exposure limits represent regulated or recommended worker breathing zone concentrations measured by validated sampling and analytical methods, meeting the regulatory requirements. The following limits apply to this material, where, if indicated, S=skin and C=ceiling limit:

SULFURIC ACID

	Notes	TWA	STEL
ACGIH		0.2 mg/cu m	
OSHA		1 mg/cu m	
RHODIA		0.3 mg/cu m	

Engineering Controls:
Where engineering controls are indicated by use conditions or a potential for excessive exposure exists, the following traditional exposure control techniques may be used to effectively minimize employee exposures: local exhaust ventilation at the point of generation.

Respiratory Protection:
When respirators are required, select NIOSH/MSHA approved equipment based on actual or potential airborne concentrations and in accordance with the appropriate regulatory standards and/or industrial recommendations.

If the exposure limit is exceeded and engineering controls are not feasible, a full facepiece respirator with an acid gas cartridge and particulate filter (NIOSH type N100 filter) may be worn up to 50 times the exposure limit, or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. If oil particles (e.g. lubricants, cutting fluids, glycerine, etc.) are present, use a NIOSH type R or P particulate filter. WARNING: Air purifying respirators do not protect workers in oxygen-deficient atmospheres. For emergencies or instances where the exposure levels are not known, use a full-facepiece positive-pressure, air-supplied respirator.

Eye/Face Protection:
Eye and face protection requirements will vary dependent upon work environment conditions and material handling practices. Appropriate ANSI Z87 approved equipment should be selected for the particular use intended for this material. Contact to face and eyes should be prevented through use of a face shield and splash proof goggles. An emergency eye wash must be readily accessible to the work area.

Skin Protection:
Skin contact must be prevented through the use of permeation resistant clothing, gloves and footwear, selected with regard for

use conditions and exposure potential. An emergency shower must be readily accessible to the work area. Consideration must be given both to durability as well as permeation resistance.

Work Practice Controls:
Personal hygiene is an important work practice exposure control measure and the following general measures should be taken when working with or handling this material:

(1) Do not store, use, and/or consume foods, beverages, tobacco products, or cosmetics in areas where this material is stored.
(2) Wash hands and face carefully before eating, drinking, using tobacco, applying cosmetics, or using the toilet.
(3) Wash exposed skin promptly to remove accidental splashes or contact with this material.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical and Chemical properties here represent typical properties of this product. Contact the business area using the Product Information phone number in Section 1 for its exact specifications.

Physical Appearance:
cloudy fuming liquid.

Odor:
sharp, irritating odor.

pH:
< 1 at 1 wt/wt%.

Specific Gravity:
1.95 at 4 C (39 F).

Water Solubility:
miscible

Melting Point Range:
Not Available

Freezing Point Range:
20 to 23 C (68 to 73 F)

Boiling Point Range:
130 to 140 C (266 to 284 F) at 760 mmHg

Vapor Pressure:
3 to 4.5 mmHg at 20 C (68 F)

Vapor Density:
2.8

Evaporation Rate:
0.56 (Butyl Acetate = 1)

10. STABILITY AND REACTIVITY

Chemical Stability:
This material is stable under normal handling and storage conditions described in Section 7.

Conditions To Be Avoided:

none known

Materials/Chemicals To Be Avoided:
water
strong reducing agents
halogens
bases
metals
nitrogen compounds

The Following Hazardous Decomposition Products Might Be Expected:

Decomposition Type: thermal
oxides of sulfur

Hazardous Polymerization Will Not Occur.

Avoid The Following To Inhibit Hazardous Polymerization:
not applicable

11. TOXICOLOGICAL INFORMATION

Acute Eye Irritation:
The following data are for similar or related products.
Toxicological Information and Interpretation:
eye - eye irritation, 250 ug/24 hr, rabbit. Severely irritating. Data for sulfuric acid.

Acute Skin Irritation:
No test data found for product. This product was not tested because strong acids are known to be corrosive and to cause severe tissue destruction.

Acute Dermal Toxicity:
No test data found for product. This product was not tested because strong bases are known to be corrosive and to cause severe tissue destruction.

Acute Respiratory Irritation:
The following data is for similar or related products.
Toxicological Information and Interpretation:
lung - lung irritation, < 5 mg/cu m, human. Mildly irritating. Data for sulfuric acid.

Acute Inhalation Toxicity:
The following data is for similar or related products.
Toxicological Information and Interpretation:
LC50 - lethal concentration 50% of test species, 347 ppm/1 hr, rat. Data for sulfuric acid.
LC50 - lethal concentration 50% of test species, 510 mg/cu m/2 hr, rat. Data for sulfuric acid.

Acute Oral Toxicity:
The following data is for similar or related products.
Toxicological Information and Interpretation:
LD50 - lethal dose 50% of test species, 2140 mg/kg, rat. Data for sulfuric acid.

Chronic Toxicity:
This product contains the substances that are considered to be "probable" or "suspected" human carcinogens as follows:

The International Agency for Research on Cancer (IARC) and the National Toxicology Program (NTP) have classified "occupational exposure to strong inorganic acid mists containing sulfuric acid" as a known human carcinogen (IARC Category 1). This classification applies only to sulfuric acid when generated as a mist. There is still debate in the scientific community whether the studies reviewed by IARC and NTP adequately controlled for confounding occupational exposures and personal

habits such as cigarette smoking and alcohol consumption. A few epidemiology studies have suggested a possible association between sulfuric acid exposure and laryngeal or lung cancer; however, in all these studies, workers were exposed to many other chemicals, some of which are recognized carcinogens, such as diethylsulfate and nickel. Considering the multiple chemical exposures and other limitations of the studies, we disagree with IARC's conclusion that a cause and effect relationship between cancer and "occupational exposure to strong inorganic acid mist containing sulfuric acid" has been demonstrated. Also more recent epidemiological studies have failed to find any association between "occupational exposure to strong inorganic acid mist containing sulfuric acid" and laryngeal or lung cancer. ACGIH has classified "sulfuric acid as contained in strong inorganic acid mists" as a suspect human carcinogen. This classification does not apply to sulfuric acid per se. Lifetime animal studies in hamsters, rats and guinea pigs were conducted in the 1970's under sponsorship of the Environmental Protection Agency (EPA) or the National Institutes of Environmental Health Sciences (NIEHS). All three lifetime studies were negative for carcinogenic effects. These studies were not formally published by the government agencies because they were satisfied that sulfuric acid mist was not a carcinogenic problem. Because these studies were not published, IARC or NTP did not consider them in their deliberations.

	Regulatory Agency Listing Carcinogen			
Ingredient Name	**OSHA**	**IARC**	**NTP**	**ACGIH**
OCCUPATIONAL EXPOSURES TO STRONG-INORGANIC-ACID MISTS CONTAINING	No	1	Yes	A2

12. ECOLOGICAL INFORMATION

Ecotoxicological Information:

Ecotoxological Information and Interpretation:

The toxicity of sulfuric acid to fish is dependent on the resulting pH of the water. lethality at a pH of 5.0 or below. required to cause lethality varies depending on the hardness of the water (hard water has some buffering capacity) and the species of fish (some fish are more resistant to the effects of acidity). McKee, JE, and Wolf, HA (Editors), Water Quality Criteria, 2nd ed., Publication No. 3-A, p. 279, California State Water Resources Control Board, Sacramento, CA (rev. 1963).

Chemical Fate Information:
No data found for product.

13. DISPOSAL CONSIDERATIONS

Waste Disposal Method:
Chemical additions, processing or otherwise altering this material may make the waste management information presented in this MSDS incomplete, inaccurate or otherwise inappropriate. Please be advised that state and local requirements for waste disposal may be more restrictive or otherwise different from federal laws and regulations. Consult state and local regulations regarding the proper disposal of this material.

Container Handling and Disposal:
Rinse containers before disposal.

EPA Hazardous Waste - YES

EPA RCRA HAZARDOUS WASTE CODES:
"C" Corrosive; "R" Reactive.

14. TRANSPORTATION INFORMATION

Transportation Status: IMPORTANT! Statements below provide additional data on listed DOT classification.
The listed Transportation Classification does not address regulatory variations due to changes in package size, mode of

shipment or other regulatory descriptors.

US Department of Transportation
Hazard Class..... 8
Shipping Name:
SULFURIC ACID, FUMING
ID Number..... UN1831
Packing Group.... I
Labels..... CORROSIVE
Emergency Guide #.... 137

15. REGULATORY INFORMATION

Inventory Status

Inventory	Status
UNITED STATES (TSCA)	Y
CANADA (DSL)	Y
EUROPE (EINECS/ELINCS)	Y
AUSTRALIA (AICS)	Y
JAPAN (MITI)	Y
SOUTH KOREA (KECL)	Y

Y = All ingredients are on the inventory.
E = All ingredients are on the inventory or exempt from listing.
P = One or more ingredients fall under the polymer exemption or are on the no longer polymer list. All other ingredients are on the inventory or exempt from listing.
N = Not determined or one or more ingredients are not on the inventory and are not exempt from listing.

FEDERAL REGULATIONS

Inventory Issues:
All functional components of this product are listed on the TSCA Inventory.

SARA Title III Hazard Classes:

Fire Hazard	- NO
Reactive Hazard	- YES
Release of Pressure	- NO
Acute Health Hazard	- YES
Chronic Health Hazard	- NO

SARA 313 Chemicals
SULFURIC ACID (106 - 107%)

SARA Extremely Hazardous Substances (EHS)/CERCLA Hazardous Substances

Ingredient	CERCLA/SARA RQ	SARA EHS TPQ
SULFURIC ACID	1000 lbs	1000 lbs
SULFUR TRIOXIDE		100 lbs
UNLISTED HAZARDOUS WASTES - CHARACTERISTIC OF CORROSIVITY	100 lbs	
UNLISTED HAZARDOUS WASTES - CHARACTERISTIC OF REACTIVITY	100 lbs	

STATE REGULATIONS:
This product contains the following components that are regulated under California Proposition 65:

Ingredient Name	Cancer List	Reprod. List	No Sign. Risk Lvl (ug/day) California	RPI
OCCUPATIONAL EXPOSURES TO STRONG-INORGANIC-				

AC ID MISTS CONTAINING SULFU	Y	N	ND	ND

16. OTHER INFORMATION

National Fire Protection Association Hazard Ratings--NFPA(R):

3 Health Hazard Rating--Serious
0 Flammability Rating--Minimal
2 Instability Rating--Moderate
0 * NO WATER

National Paint & Coating Hazardous Materials Identification System--HMIS(R):

3 Health Hazard Rating--Serious
0 Flammability Rating--Minimal
2 Reactivity Rating--Moderate

Reason for Revisions:
New product MSDS.

Key Legend Information:
ACGIH - American Conference of Governmental Industrial Hygienists
OSHA - Occupational Safety and Health Administration
TLV - Threshold Limit Value
PEL - Permissable Exposure Limit
TWA - Time Weighted Average
STEL - Short Term Exposure Limit
NTP - National Toxicology Program
IARC - International Agency for Research on Cancer
ND - Not determined
RHODIA - Rhodia Established Exposure Limits

Disclaimer:
The information herein is given in good faith but no warranty, expressed or implied, is made.

** End of MSDS Document **

MATERIAL SAFETY DATA SHEET

PRODUCT NAME: EPO-TEK 377, Part A

***HMIS: HEALTH-** 2 **FIRE-**1 **REACTIVITY-** 0

Carcinogen: NTP (No**) IARC (**No**) OSHA (**No**)**

***** HMIS CODE ratings are estimated by Epoxy Technology.

EPOXY TECHNOLOGY
14 FORTUNE DRIVE
BILLERICA, MA 01821

EMERGENCY PHONE:
US/CANADA: 800-255-3924
INT'L COLLECT: + 813-248-0585

DATE REVISED: 4/4/2006
REV: B

I. IDENTIFICATION & PHYSICAL DATA

PERCENT VOLATILE: NA
BOILING POINT: NA
VAPOR DENSITY: >Air
APPEARANCE: Clear liquid
ODOR: Mild

VAPOR PRESSURE: NA
SOLUBILITY IN WATER: Low
EVAPORATION RATE: <BUAC
SPECIFIC GRAVITY: NA
VOC: NA

II. HAZARDOUS INGREDIENTS

	CAS#	WT %
Reaction product of epichlorohydrin & bisphenol A	025085-99-8	65-85%
1,4 Butanediol Diglycidyl Ether	2425-79-8	1-10%

Reaction product of epichlorohydrin and bisphenol A is considered hazardous under OSHA's Hazardous Communication Standards under 29CFR, 1910.1200. 1,4 butanediol diglycidyl ether is considered hazardous under 311 and 312 of Sara Title III.

III. FIRE & EXPLOSION DATA

FLASH POINT: >400F
EXTINGUISHING MEDIA: Dry chemical, foam, carbon dioxide.
UNUSUAL FIRE & EXPLOSION HAZARDS: Avoid fumes liberated by heat.
SPECIAL FIRE FIGHTING PROCEDURES: Wear self contained breathing apparatus and complete personal protective equipment. Remove all ignition sources. Use a water spray to cool fire exposed containers.

IV. REACTIVITY DATA

STABILITY: Stable **HAZARDOUS POLYMERIZATION:** Will not occur.
CONDITIONS TO AVOID: Excessive heat.
MATERIALS TO AVOID: Strong oxidizing and reducing agents.
HAZARDOUS DECOMPOSITION PRODUCTS: Fumes produced when heated to decomposition may include carbon monoxide, and carbon dioxide.

V. HEALTH HAZARD DATA EPO-TEK 377, Part A

EFFECTS OF OVEREXPOSURE

INGESTION: Contains materials that may be moderately toxic. Ingestion can upset the gastric system.
INHALATION: Hot vapors can cause headaches, nausea, dizziness, and respiratory irritation, if inhaled.
SKIN CONTACT: Skin irritation may be experienced with some individuals.
EYE CONTACT: Extremely irritating with the possibility of permanent eye injury.
CHRONIC/ACUTE EFFECTS OF EXPOSURE: Combinations of above conditions can be experienced.

EMERGENCY & FIRST AID PROCEDURES

EYE CONTACT: In case of eye contact, flush well with water. Get medical attention immediately.
SKIN CONTACT: In case of skin contact, clean with soap and water. Do not use solvents. Remove contaminated clothing.
INGESTION: Get medical attention immediately.
INHALATION: Remove employee to fresh air. If discomfort persists, get medical attention.

VI. SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS SPILLED: Eliminate ignition sources. Use eye and skin protection. Place leaking containers in a well ventilated area. Absorb spillage with inert material and dispose.
WASTE DISPOSAL METHOD: Incinerate or use hazardous waste treatment procedures that are in accordance with federal, state and local regulations.

VII. SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION: Wear an approved respirator whenever high level exposure to vapors or mist is anticipated.
VENTILATION: Locale exhaust recommended for exposure control.
PROTECTIVE GLOVES: Impervious gloves - neoprene or equivalent. A combination of barrier cream and gloves is recommended.
EYE PROTECTION: Chemical splash goggles recommended.
OTHER PROTECTIVE EQUIPMENT: For operations where contact can occur, use a face shield and impervious apron. A safety shower and eye wash facility should be available.

VIII. SPECIAL PRECAUTIONS: Avoid contact with skin and eyes. Avoid breathing vapors. Keep containers closed when not in use. Remove all contaminated clothing immediately and wash. Wash skin thoroughly with soap and water after handling. Solvents should not be used to clean skin because of increased penetration potential - protective skin oils can be dissolved by solvents.

MATERIAL SAFETY DATA SHEET

PRODUCT NAME: EPO-TEK 377, Part B

***HMIS: HEALTH-** 2 **FIRE-**1 **REACTIVITY-** 1

Carcinogen: NTP (No**) IARC (**No**) OSHA (**No**)**

***** HMIS CODE ratings are estimated by Epoxy Technology.

EPOXY TECHNOLOGY
14 FORTUNE DRIVE
BILLERICA, MA 01821

EMERGENCY PHONE:
US/CANADA: 800-255-3924
INT'L COLLECT: + 813-248-0585

DATE REVISED: 4/4/2006
REV: B

I. IDENTIFICATION & PHYSICAL DATA

PERCENT VOLATILE: NA
BOILING POINT: NA
VAPOR DENSITY: >Air
APPEARANCE: Amber Liquid
ODOR: Mild

VAPOR PRESSURE: NA
SOLUBILITY IN WATER: Low
EVAPORATION RATE: <BUAC
SPECIFIC GRAVITY: NA

II. HAZARDOUS INGREDIENTS CAS# WT % TOXICITY DATA

There are no hazardous ingredients that require reporting per OSHA's Communication Standards or by Sara Title III.

III. FIRE & EXPLOSION DATA

FLASH POINT: >200F
EXTINGUISHING MEDIA: Dry chemical, foam, carbon dioxide.
UNUSUAL FIRE & EXPLOSION HAZARDS: Avoid fumes liberated by heat.
SPECIAL FIRE FIGHTING PROCEDURES: Wear self contained breathing apparatus and complete personal protective equipment. Remove all ignition sources. Use a water spray to cool fire exposed containers.

IV. REACTIVITY DATA

STABILITY: Stable **HAZARDOUS POLYMERIZATION:** Will not occur.
CONDITIONS TO AVOID: Excessive heat.
MATERIALS TO AVOID: Strong oxidizing and reducing agents.
HAZARDOUS DECOMPOSITION PRODUCTS: Fumes produced when heated to decomposition may include oxides of nitrogen, carbon monoxide, and carbon dioxide.

V. HEALTH HAZARD DATA

EFFECTS OF OVER EXPOSURE

INGESTION: Contains materials that may be slightly toxic. Ingestion can severely upset the gastric system.
INHALATION: Hot vapors can cause headaches, nausea, dizziness, and respiratory irritation, if inhaled.
SKIN CONTACT: Contains an irritating constituent. May cause dermatitis.
EYE CONTACT: Contains an irritating constituent**.** Irritating to the eyes. Can cause injury.
CHRONIC EFFECTS OF OVER EXPOSURE: It may cause dermatitis and sensitization.

EMERGENCY & FIRST AID PROCEDURES

EYE CONTACT: In case of eye contact, flush with water for at least 15 minutes. Get medical attention immediately.
SKIN CONTACT: In case of skin contact, clean with soap and water. Do not use solvents. Remove contaminated clothing.
INGESTION: Get medical attention immediately.
INHALATION: Remove employee to fresh air. If discomfort persists, get medical attention.

VI. SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS SPILLED: Eliminate ignition sources. Use eye and skin protection. Place leaking containers in a well ventilated area. Absorb spillage with inert material and dispose.
WASTE DISPOSAL METHOD: Incinerate or use hazardous waste treatment procedures that are in accordance with federal, state and local regulations.

VII. SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION: Wear an NIOSH approved respirator for organic vapors whenever high level exposure to vapors or mist is anticipated.
VENTILATION: Locale exhaust recommended for exposure control.
PROTECTIVE GLOVES: Impervious gloves - neoprene or equivalent. A combination of barrier cream and gloves is recommended.
EYE PROTECTION: Chemical splash goggles recommended.
OTHER PROTECTIVE EQUIPMENT: For operations where contact can occur, use a face shield and impervious apron. A safety shower and eye wash facility should be available.

VIII. SPECIAL PRECAUTIONS: Avoid contact with skin and eyes. Avoid breathing vapors. Keep containers closed when not in use. Remove all contaminated clothing immediately and wash. Wash skin thoroughly with soap and water after handling. Solvents should not be used to clean skin because of increased penetration potential - protective skin oils can be dissolved by solvents.

REGULATORY INFORMATION

EPOXY TECHNOLOGY
14 FORTUNE DRIVE
BILLERICA, MA 01821
TEL: (978) 667 – 3805

PRODUCT NAME: EPO-TEK 377
DATE REVISED: 4/4/2006
REV: B

1. SARA TITLE III SECTION 313 SUPPLIER NOTIFICATION

This product contains the following toxic chemicals subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right To Know Act of 1986 (40 CFR 372). None

2. TSCA Inventory Status

All the components of this product are listed on the TSCA Inventory.

3. RCRA Status

This product contains the following chemicals listed on the 40 CFR Part 261.33: None

4. CERCLA Status

This product contains the following chemicals listed on the 40 CFR Part 302.4: Pthalic Anhydride@ <4% in Part B only.

5. Transportation

Part A

Not Restricted

Part B

Not Restricted

ALL-CLEAR SODA ASH
Dense Soda Ash
Material Safety Data Sheet

Manufactured by:
North American Chemical Company
8300 College Boulevard, Overland Park, Kansas 66210

1 CHEMICAL PRODUCT & COMPANY IDENTIFICATION

PRODUCT NAME: Dense Soda Ash
MANUFACTURER:
North American Chemical Company
8300 College Boulevard
Overtand Park, KS 66210

EMERGENCY PHONE NUMBER:
24 Hour Information Service: 760-372-2291
CHEMTREC: 800-424-9300
PREPARATION/REVISION DATE: December 10,1995
Supersedes November, 1994 version

2 COMPOSITION/INFORMATION ON INGREDIENTS

Note: See Section 15 for Exposure Limits.
PRODUCT NAME: Dense Soda Ash
FORMULA: NA_2CO_3
CHEMICAL NAME: Sodium Carbonate
SYNONYMS: Bisodium carbonate, carbonic acid, disodium salt: carbonic acid sodium salt: crystal carbonate

COMPONENTS:
Material: Dense Soda Ash
CAS Number 497-19-8
Percent: 99.7%

Soda ash is hazardous under the OSHA Hazard Communication Standard based on animal chronic toxicity studies of similar organic borates.

3 HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: Soda Ash is a white powdered substance that is not flammable, combustible, or explosive. Soda Ash decomposes at temperatures above 1,000ºC, releasing carbon dioxide gas. Contact with eyes causes severe irritation and contact with skin or nose causes moderate irritation. Soda Ash has low toxic by ingestion, however, may cause burns of the gastrointestinal tract if swallowed.
ROUTES OF EXPOSURE; Inhalation, dermal and eye contact incidental ingestion.
INHALATION: Dust causes irritation to nose, throat and respiratory tract (see Section 15).
EYE CONTACT: Causes severe irritation.
DERMAL CONTACT: Dust causes irritation and redness of skin. Sensitivity reactions may occur from repeated topical use.
INGESTION: Low toxicity by ingestion. If swallowed, may cause burns of the mouth, nose and throat. Ingestion of large quantities may produce corrosion of the gastrointestinal tract, vomiting, diarrhea. circulatory collapse or death.
CANCER: Soda Ash (or any component of Soda ash) is not considered a carcinogen.
REPRODUCTIVE: No Available
TARGET ORGANS: No target organs have been determined in humans or animals from Soda ash.
SIGNS AND SYMPTOMS OF EXPOSURE: Symptoms of accidental over-exposure include severe eye irritation, burning sensation to the nose, throat and eyes, redness and irritation of the skin, and coughing or sneezing. Ingestion may cause severe inflation of the gastrointestinal tract, vomiting, and diarrhea.

See Section 11 for details on Toxicological Data.

4 EMERGENCY & FIRST AID PROCEDURES

EYES: Immediately flush eyes with plenty of water for at least 15 minutes. If irritation persists, call a physician.
SKIN: Wash with soap and water until no evidence of chemical remains (15-20 minutes). Wash clothing before reuse. Thoroughly clean shoes before reuse.
INHALATION: Remove from exposure area to fresh air immediately. Treat symptomatically and supportively.
INGESTION: If swallowed, do not induce vomiting. Give large quantities of water. Never give anything by mouth to an unconscious person Call a physician.

5 FIRE FIGHTING MEASURES

GENERAL HAZARD: This product is not flammable and does not support combustion
UEL/LEL: Not Applicable
FLASH POINT: Not Applicable
AUTOIGNITION TEMPERATURE: Not Applicable
FLAMMABILITY CLASSIFICATION: Not Applicable
EXTINGUISHING MEDIA: Most fire extinguishing agents may be used in fires involving sodium sulfate.

6 ACCIDENTAL RELEASE MEASURES

ACTION TO TAKE FOR SPILLS OR LEAKS:

7 HANDLING & STORAGE

GENERAL: Store in cool, dry area. Keep container tightly closed. Good housekeeping should be maintained to minimize dust accumulation and generation.
HYGIENIC PRACTICES: Wash hands thoroughly with soap and water after handling, and before eating, drinking, or smoking.

8 EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: Use general dilution and local exhaust ventilation techniques to meet nuisance exposure limit (see Section 15).
EYE PROTECTION: Use goggles or vented safety glasses in excessively dusty conditions. Ensure eyewash fountain is located in immediate work area.
SKIN PROTECTION: Not required under normal conditions. Use if excessively dusty or if skin is damaged. Wear gloves that will not allow alkaline solutions to penetrate.
RESPIRATORY PROTECTION: Use appropriate NIOSH/MSHA certified respirators when levels are expected to exceed exposure limits (see Section 15)

9 PHYSICAL & CHEMICAL PROPERTIES

SOLUBILITY IN WATER: 16.3% at 22.6°C
APPEARANCE: White granular solid, odorless
MOLECULAR WEIGHT: 105.99
BOILING POINT: Not Applicable
MELTING POINT: 851 °C
pH VALUE: @ 20°C 1 % solution 11.37
FLASH POINT: Not Applicable
SPECIFIC GRAVITY: 2.533
VAPOR PRESSURE: Not Applicable

10 STABILITY & REACTIVITY DATA

STABILITY: Stable under normal conditions. May react violently with strong acids. Carbon dioxide gas and large quantities of heat can be evolved. Reacts with hydrated lime in the presence of moisture to form caustic soda, a corrosive.
INCOMPATIBILITY: Keep away from aluminum powder, fluorine, phosphorous pentoxide. sulfuric acid, ammoniacal silver nitrate and molten lithium.
HAZARDOUS DECOMPOSITION PRODUCTS: Soda Ash decomposes at temperatures above 1000°C, releasing carbon dioxide gas (CO_2). Carbon dioxide is an asphyxiant and may affect respiration rate or interfere with breathing. The sodium oxide residue sublimes at 1275°C, forming vapors and mists of caustic soda on contact with moisture or water
HAZARDOUS POLYMERIZATION: Will not occur.

11 TOXICOLOGICAL EFFECTS

EYES: Dry, powdered sodium carbonate, as 25% to 75% of a mixture with dry sodium sulfate. applied to eyes of rabbits and monkeys in a systematic study was judged "corrosive" or "harmful " to both species, whether or not followed by irrigation at two minutes after application. However, most monkey eyes exposed to 50% mixture showed little or no persistent injury 21 days after exposure.
SKIN: An aqueous solution, 50% weight/volume, of sodium carbonate was applied to the intact and abraded skins of rabbits and guinea pigs. The sites were examined at 4, 24, and 48 hours and scored for erythema, edema, or corrosion. The abraded skins of the guinea pigs were negligibly affected, but the rabbit skins showed moderate erythema and edema.
INHALATION: Male rats were exposed to an aerosol of a 2% aqueous solution of sodium carbonate, 4 hours a day. 5 days a week, for 3.5 months.
In observations from exposure at approximately 70 mg/cubic meter, the weight gain of the exposed group was 24% less than that of controls.
Inhalation LC50 in the rat was 2,300 mg/m³/2 hours, mouse - 1,200 mg/m³/2 hours, and guinea pig - 800 mg/m³/2 hours.
INGESTION: Low acute oral toxicity; reported LD_{50}s in rats was 4,090 mg/kg of body weight. Reported LD_{50} in mice
CARCINOGENICITY: Soda Ash (or any of the components of Soda Ash) is not listed as a carcinogen by the Environmental Protection Agency (EPA), the State of California, or the International Agency for the Research on Cancer (IARC).
REPRODUCTIVE: An intrauterine dose of 0.085 mg/kg given to pregnant mice on day 4 of pregnancy caused preimplantation mortality.
MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Skin or eye disorders or damaged skin may be aggravated by exposure to this product. Respiratory disorders may be aggravated by exposure to this product.

12 ECOLOGICAL DATA

FISH TOXICITY: Not Available
BIRD TOXICITY: Not Available
INVERTEBRATE TOXICITY: Not Available
PHYTOTOXICITY: Not Available
ENVIRONMENTAL FATE DATA: Occurs in nature as the hydrate. thermonitrite, and decahydrate, natron or natrite.

13 DISPOSAL CONSIDERATIONS

DISPOSAL GUIDANCE: Small quantities of Soda Ash can usually be disposed of at municipal landfill sites, and requires no special treatment. Tonnage quantities are not, however, recommended for the landfill, and if possible, should be re-used for an appropriate application. Refer to state and local regulation for applicable site-specific requirements. Keep out of drinking water sources.
CALIFORNIA HAZARDOUS WASTE DESIGNATION: California identifies substances with acute LD_{50}s of less than 5.,000 mg/kg as "hazardous wastes". Soda Ash is therefore considered a "hazardous waste" if spilled in California.

See Section 15 for details on Regulatory Information.

14 TRANSPORT REGULATIONS

US DEPARTMENT of TRANSPORTATION (DOT) IDENTIFICATION NUMBER: Soda Ash is not a DOT Hazardous Material or Hazardous Substance.
INTERNATIONAL TRANSPORTATION: Soda Ash has no U.N. number, and is not regulated under international rail, highway, water, or air transport regulations.

15 REGULATORY INFORMATION

TSCA NUMBER: 497-19-8
RCRA(40CFR261): Non Regulated
CERCLA (SUPERFUND): Not listed under any section.
CLEAN WATER ACT (CWA): Soda Ash is not regulated by any water quality criteria under Section 304, is not listed as priority pollutant under Section 307, and is not listed as a hazardous substance under Section 311.
SAFE DRINKING WATER ACT (SDWA): Not regulated under SDWA, 42 USC 300g-1, 40 CFR 141 et seq. Consult state and local regulations for possible water quality advisories involving boron.
OCCUPATIONAL EXPOSURE LIMITS: Soda Ash is listed/regulated by OSHA, CAL OSHA, or ACGIH as "Particulate Not Otherwise Classified" or "Nuisance Dust".
OSHA: Permissible Exposure Limit: 15 mg/m^3, total dust
5 mg/m^3, respirable dust
ACGIH: Threshold Limit Value: 10 mg/m^3
CALIFORNIA OSHA; Permissible Exposure Limit: 10mg/m^3
INTERNATIONAL AGENCY for RESEARCH on CANCER: Not listed as a carcinogen.
NTP ANNUAL REPORT ON CARCINOGENS: Not listed as a carcinogen
OSHA CARCINOGEN: Not listed as an OSHA carcinogen.
CONEG MODEL LEGISLATION: Meets all CONEG requirements relating to heavy metal limitations on components of packaging materials
CALIFORNIA PROPOSITION 65: Not listed as carcinogen or reproductive toxin.
FEDERAL DRUG AGENCY (FDA): Pursuant to 21 CFR 582.1742 soda ash is approved by the FDA for use in substance added to human foods affirmed as generally recognized as safe (GRAS). Sodium carbonate used as a general purpose food additive in animal drugs, feeds, and related products is generally GRAS when used in accordance with good manufacturing or feeding practice.
WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEMS (WHMIS): With the exception of the 16 section format, this MSDS conforms to current WHMIS standards.

16 OTHER INFORMATION

OTHER INFORMATION:
Product Label Text Hazard Information:

- May be harmful if swallowed.
- May cause eye irritation.
- Avoid contact with eyes, skin and clothing.
- Not for food or drug use.
- Practice good housekeeping.
- Refer to MSDS.
- KEEP OUT OF THE REACH OF CHILDREN.

National Fire Protection Association (NFPA) Classification:
4 = Severe, 3 = Serious, 2 = Moderate, 1 = Slight, 0 = Minimal

Health	2
Flammability	0
Reactivity	0

Hazardous Materials Information Systems (HMIS):
4 = Extreme, 3 = High, 2 = Moderate, 1 = Slight, 0 = Insignificant

Blue:	(Acute Health)	2
Red:	(Flammability)	0
Yellow:	(Reactivity)	0

NOTICE

Judgements as to the suitability of information herein for purchaser's purposes are necessarily purchaser's responsibility. Therefore, although reasonable care has been taken in the preparation of such information. North American Chemical Company extends no warranties, makes no representations, and assumes no responsibility as to the accuracy or suitability of such information for application to purchaser's intended purposes or for consequences of its use.

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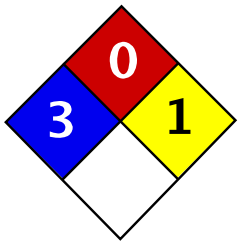


Material Safety Data Sheet
Sodium Hydroxide, 50% MSDS

Section 1: Chemical Product and Company Identification

Product Name: Sodium Hydroxide, 50%

Catalog Codes: SLS3127, SLS4549

CAS#: Mixture.

RTECS: Not applicable.

TSCA: TSCA 8(b) inventory: Sodium hydroxide; Water

CI#: Not applicable.

Synonym: Sodium Hydroxide, 50% Solution

Chemical Name: Not applicable.

Chemical Formula: Not applicable.

Contact Information:

Sciencelab.com, Inc.
14025 Smith Rd.
Houston, Texas 77396

US Sales: **1-800-901-7247**
International Sales: **1-281-441-4400**

Order Online: ScienceLab.com

CHEMTREC (24HR Emergency Telephone), call:
1-800-424-9300

International CHEMTREC, call: 1-703-527-3887

For non-emergency assistance, call: 1-281-441-4400

Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	% by Weight
Sodium hydroxide	1310-73-2	50
Water	7732-18-5	50

Toxicological Data on Ingredients: Sodium hydroxide LD50: Not available. LC50: Not available.

Section 3: Hazards Identification

Potential Acute Health Effects:
Very hazardous in case of skin contact (corrosive, irritant, permeator), of eye contact (irritant, corrosive), of ingestion, . Slightly hazardous in case of inhalation (lung sensitizer). Liquid or spray mist may produce tissue damage particularly on mucous membranes of eyes, mouth and respiratory tract. Skin contact may produce burns. Inhalation of the spray mist may produce severe irritation of respiratory tract, characterized by coughing, choking, or shortness of breath. Severe over-exposure can result in death. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering.

Potential Chronic Health Effects:
CARCINOGENIC EFFECTS: Not available.
MUTAGENIC EFFECTS: Not available.
TERATOGENIC EFFECTS: Not available.

DEVELOPMENTAL TOXICITY: Not available.
The substance is toxic to lungs.
Repeated or prolonged exposure to the substance can produce target organs damage. Repeated or prolonged contact with spray mist may produce chronic eye irritation and severe skin irritation. Repeated or prolonged exposure to spray mist may produce respiratory tract irritation leading to frequent attacks of bronchial infection. Repeated exposure to a highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.

Section 4: First Aid Measures

Eye Contact:
Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Cold water may be used. Get medical attention immediately. Finish by rinsing thoroughly with running water to avoid a possible infection.

Skin Contact:
In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Cover the irritated skin with an emollient. Cold water may be used.Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.

Serious Skin Contact:
Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek immediate medical attention.

Inhalation:
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.

Serious Inhalation:
Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek medical attention.

Ingestion:
If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.

Serious Ingestion: Not available.

Section 5: Fire and Explosion Data

Flammability of the Product: Non-flammable.

Auto-Ignition Temperature: Not applicable.

Flash Points: Not applicable.

Flammable Limits: Not applicable.

Products of Combustion: Not available.

Fire Hazards in Presence of Various Substances: Not applicable.

Explosion Hazards in Presence of Various Substances: Non-explosive in presence of open flames and sparks, of shocks.

Fire Fighting Media and Instructions: Not applicable.

Special Remarks on Fire Hazards: Not available.

Special Remarks on Explosion Hazards:
Sodium hydroxide reacts to form explosive products with ammonia + silver nitrate.
Benzene extract of allyl benzenesulfonate prepared from allyl alcohol, and benzene sulfonyl chloride in presence of aquesous sodium hydroxide, under vacuum distillation, residue darkened and exploded.
Sodium Hydroxde + impure tetrahydrofuran, which can contain peroxides, can cause serious explosions.
Dry mixtures of sodium hydroxide and sodium tetrahydroborate liberate hydrogen explosively at 230-270 deg. C.
Sodium Hydroxide reacts with sodium salt of trichlorophenol + methyl alcohol + trichlorobenzene + heat to cause an explosion. (Sodium hydroxide)

Section 6: Accidental Release Measures

Small Spill:
Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container. If necessary: Neutralize the residue with a dilute solution of acetic acid.

Large Spill:
Corrosive liquid. Poisonous liquid.
Stop leak if without risk. Absorb with DRY earth, sand or other non-combustible material. Do not get water inside container. Do not touch spilled material. Use water spray curtain to divert vapor drift. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed. Call for assistance on disposal. Neutralize the residue with a dilute solution of acetic acid. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

Section 7: Handling and Storage

Precautions:
Do not ingest. Do not breathe gas/fumes/ vapor/spray. Never add water to this product. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such as oxidizing agents, reducing agents, metals, acids, alkalis, moisture.

Storage: Keep container tightly closed. Keep container in a cool, well-ventilated area.

Section 8: Exposure Controls/Personal Protection

Engineering Controls:
Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value.

Personal Protection:
Face shield. Full suit. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Gloves. Boots.

Personal Protection in Case of a Large Spill:
Splash goggles. Full suit. Vapor respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits:
Sodium hydroxide
STEL: 2 (mg/m3) from ACGIH (TLV) [United States]
TWA: 2 CEIL: 2 (mg/m3) from OSHA (PEL) [United States]
CEIL: 2 (mg/m3) from NIOSHConsult local authorities for acceptable exposure limits.

Section 9: Physical and Chemical Properties

Physical state and appearance: Liquid.

Odor: Odorless.

Taste: Alkaline. Bitter. (Strong.)

Molecular Weight: Not applicable.

Color: Clear Colorless.

pH (1% soln/water): Basic.

Boiling Point: 140°C (284°F)

Melting Point: 12°C (53.6°F)

Critical Temperature: Not available.

Specific Gravity: 1.53 (Water = 1)

Vapor Pressure: The highest known value is 2.3 kPa (@ 20°C) (Water).

Vapor Density: The highest known value is 0.62 (Air = 1) (Water).

Volatility: Not available.

Odor Threshold: Not available.

Water/Oil Dist. Coeff.: Not available.

Ionicity (in Water): Not available.

Dispersion Properties: See solubility in water.

Solubility: Easily soluble in cold water.

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Excess heat, incompatible materials, water/moisture

Incompatibility with various substances:
Reactive with oxidizing agents, reducing agents, metals, acids, alkalis.
Slightly reactive with water

Corrosivity:
Extremely corrosive in presence of aluminum, brass.
Corrosive in presence of copper, of stainless steel(304), of stainless steel(316).
Non-corrosive in presence of glass.

Special Remarks on Reactivity:
Hygroscopic. Much heat is evolved when solid material is dissolved in water. Therefore cold water and caution must be used for this process.
Generates considerable heat when a sodium hydroxide solution is mixed with an acid
Sodium hydroxide solution and octanol + diborane during a work-up of a reaction mixture of oxime and diborane in tetrahyrofuran is very exothermic, a mild explosion being noted on one occassion.
Reactive with water, acids (mineral, non-oxidizing, e.g. hydrochloric, hydrofluoric acid, muriatic acid, phosphoric), acids (mineral, oxidizing e.g. chromic acid, hypochlorous acid, nitric acid, sulfuric acid), acids (organic e.g. acetic acid, benzoic acid, formic acid, methanoic acid, oxalic acid), aldehydes (e.g. acetaldehyde, acrolein, chloral

hydrate, foraldehyde), carbamates (e.g. carbanolate, carbofuran), esters (e.g. butyl acetate, ethyl acetate, propyl formate), halogenated organics (dibromoethane, hexachlorobenzene, methyl chloride, trichloroethylene), isocyanates (e.g. methyl isocyanate), ketones (acetone, acetophenone, MEK, MIBK), acid chlorides, strong bases, strong oxidizing agents, strong reducing agents, flammable liquids, powdered metals and metals (i.e aluminum, tin, zinc, hafnium, raney nickel), metals (alkali and alkaline e.g. cesium, potassium, sodium), metal compounds (toxic e.g. berylium, lead acetate, nickel carbonyl, tetraethyl lead), mitrides (e.g. potassium nitride, sodium nitride), nitriles (e.g. acetonitrile, methyl cyanide), nitro compounds (organic e.g. nitrobenzene, nitromethane), acetic anhydride, hydroquinone, chlorohydrin, chlorosulfonic acid, ethylene cyanohydrin, glyoxal, hydrosulfuric acid, oleum, propiolactone, acylonitrile, phorosous pentoxide, chloroethanol, chloroform-methanol, tetrahydroborate, cyanogen azide, 1,2,4,5 tetrachlorobenzene, cinnamaldehyde.
Reacts with formaldehyde hydroxide to yield formic acid, and hydrogen. (Sodium hydroxide)

Special Remarks on Corrosivity: Very caustic to aluminum and other metals in presence of moisture.

Polymerization: Will not occur.

Section 11: Toxicological Information

Routes of Entry: Absorbed through skin. Dermal contact. Eye contact. Inhalation.

Toxicity to Animals:
LD50: Not available.
LC50: Not available.

Chronic Effects on Humans: Not available.

Other Toxic Effects on Humans:
Extremely hazardous in case of inhalation (lung corrosive).
Very hazardous in case of skin contact (corrosive, irritant, permeator), of eye contact (corrosive), of ingestion, .

Special Remarks on Toxicity to Animals: Not available.

Special Remarks on Chronic Effects on Humans: Investigation as a mutagen (cytogenetic analysis), but no data available. (Sodium hydroxide)

Special Remarks on other Toxic Effects on Humans:
Acute Potential Health Effects:
Skin: May be harmful if absorbed through skin. Causes severe skin irritation and burns. May cause deep penetrating ulcers of the skin.
Eyes: Causes severe eye irritation and burns. May cause chemical conjunctivitis and corneal damage.
Inhalation: Harmful if inhaled. Causes severe irritation of the respiratory tract and mucous membranes with coughing, burns, breathing difficulty, and possible coma. Irritation may lead the chemical pneumonitis and pulmonary edema. Causes chemical burns to the respiratory tract and mucous membranes.
Ingestion: May be fatal if swallowed. May cause severe and permanent damage to the digestive tract. Causes

Section 12: Ecological Information

Ecotoxicity: Not available.

BOD5 and COD: Not available.

Products of Biodegradation:
Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The products of degradation are less toxic than the product itself.

Special Remarks on the Products of Biodegradation: Not available.

Section 13: Disposal Considerations

Waste Disposal:
Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14: Transport Information

DOT Classification: Class 8: Corrosive material

Identification: : Sodium hydroxide, solution (Sodium hydroxide) UNNA: UN1824 PG: II

Special Provisions for Transport: Not available.

Section 15: Other Regulatory Information

Federal and State Regulations:
Illinois toxic substances disclosure to employee act: Sodium hydroxide
Illinois chemical safety act: Sodium hydroxide
New York release reporting list: Sodium hydroxide
Rhode Island RTK hazardous substances: Sodium hydroxide
Pennsylvania RTK: Sodium hydroxide
Minnesota: Sodium hydroxide
Massachusetts RTK: Sodium hydroxide
New Jersey: Sodium hydroxide
Louisiana spill reporting: Sodium hydroxide
TSCA 8(b) inventory: Sodium hydroxide; Water
CERCLA: Hazardous substances.: Sodium hydroxide: 1000 lbs. (453.6 kg);

Other Regulations: OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).

Other Classifications:

WHMIS (Canada):
CLASS D-2A: Material causing other toxic effects (VERY TOXIC).
CLASS E: Corrosive liquid.

DSCL (EEC):

HMIS (U.S.A.):

Health Hazard: 3

Fire Hazard: 0

Reactivity: 1

Personal Protection:

National Fire Protection Association (U.S.A.):

Health: 3

Flammability: 0

Reactivity: 1

Specific hazard:

Protective Equipment:

Gloves.
Full suit.
Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate.
Face shield.

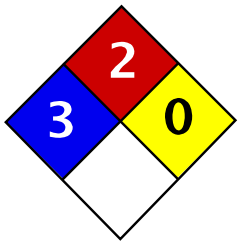
Section 16: Other Information

References: Not available.

Other Special Considerations: Not available.

Created: 10/09/2005 06:32 PM

Last Updated: 10/09/2005 06:32 PM



Health	2
Fire	2
Reactivity	0
Personal Protection	H

Material Safety Data Sheet
Aniline MSDS

Section 1: Chemical Product and Company Identification

Product Name: Aniline

Catalog Codes: SLA1735

CAS#: 62-53-3

RTECS: BW6650000

TSCA: TSCA 8(b) inventory: Aniline

CI#: Not applicable.

Synonym: Aminobenzene; Benzenamine; Aminophen

Chemical Name: Aniline

Chemical Formula: C6H5NH2

Contact Information:

Sciencelab.com, Inc.
14025 Smith Rd.
Houston, Texas 77396

US Sales: **1-800-901-7247**
International Sales: **1-281-441-4400**

Order Online: ScienceLab.com

CHEMTREC (24HR Emergency Telephone), call:
1-800-424-9300

International CHEMTREC, call: 1-703-527-3887

For non-emergency assistance, call: 1-281-441-4400

Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	% by Weight
Aniline	62-53-3	100

Toxicological Data on Ingredients: Aniline: ORAL (LD50): Acute: 250 mg/kg [Rat.]. 464 mg/kg [Mouse]. DERMAL (LD50): Acute: 820 mg/kg [Rabbit.]. 1400 mg/kg [Rat].

Section 3: Hazards Identification

Potential Acute Health Effects:
Hazardous in case of skin contact (irritant, permeator), of eye contact (irritant), of ingestion, of inhalation. Severe over-exposure can result in death.

Potential Chronic Health Effects:
Slightly hazardous in case of skin contact (sensitizer).
CARCINOGENIC EFFECTS: Classified A3 (Proven for animal.) by ACGIH. 3 (Not classifiable for human.) by IARC.
MUTAGENIC EFFECTS: Mutagenic for mammalian somatic cells. Mutagenic for bacteria and/or yeast.
TERATOGENIC EFFECTS: Not available.
DEVELOPMENTAL TOXICITY: Not available.
The substance may be toxic to blood, kidneys, liver, bladder, spleen, cardiovascular system, central nervous system (CNS).
Repeated or prolonged exposure to the substance can produce target organs damage. Repeated exposure to a

Section 4: First Aid Measures

Eye Contact:
Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Cold water may be used. Get medical attention. Finish by rinsing thoroughly with running water to avoid a possible infection.

Skin Contact:
In case of contact, immediately flush skin with plenty of water. Cover the irritated skin with an emollient. Remove contaminated clothing and shoes. Cold water may be used.Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.

Serious Skin Contact:
Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek immediate medical attention.

Inhalation:
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.

Serious Inhalation:
Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. WARNING: It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled material is toxic, infectious or corrosive. Seek immediate medical attention.

Ingestion:
Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.

Serious Ingestion: Not available.

Section 5: Fire and Explosion Data

Flammability of the Product: Combustible.

Auto-Ignition Temperature: 615°C (1139°F)

Flash Points: CLOSED CUP: 70°C (158°F).

Flammable Limits: LOWER: 1.3% UPPER: 23%

Products of Combustion: These products are carbon oxides (CO, CO2), nitrogen oxides (NO, NO2...).

Fire Hazards in Presence of Various Substances:
Flammable in presence of open flames and sparks, of heat.
Non-flammable in presence of shocks.

Explosion Hazards in Presence of Various Substances:
Risks of explosion of the product in presence of mechanical impact: Not available.
Risks of explosion of the product in presence of static discharge: Not available.

Fire Fighting Media and Instructions:
SMALL FIRE: Use DRY chemical powder.
LARGE FIRE: Use water spray, fog or foam. Do not use water jet.

Special Remarks on Fire Hazards:
Ignites on contact with sodium peroxide + water.
Aniline ignites spontaneously in presence of red fuming nitric acid.
Sodium peroxide or potassium peroxide is spontaneouly flammable with aniline.

When heated to decomposition it emits toxic fumes.

Special Remarks on Explosion Hazards:
Spontaneously explosive reactions occur with benzenediazonium -2-carboxylate, dibenzoyl peroxide, fluorine nitrate, nitrosyl perchlorate, red fuming nitric acid, peroxodisulfuric acid, and tetranitromethane.
Addition of a drop of aniline to 1 gram of dibenzoyl peroxide leads to mildly explosive decompostion after a short delay.
Addition of aniline to nitromethane renders it susceptible to initiation by a detonator.
Anililne reacts with perchloric acid, and then formaldehyde to produce explosive and combustible condensed resin.

Section 6: Accidental Release Measures

Small Spill:
Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container. If necessary: Neutralize the residue with a dilute solution of acetic acid.

Large Spill:
Combustible material.
Keep away from heat. Keep away from sources of ignition. Stop leak if without risk. Neutralize the residue with a dilute solution of acetic acid. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

Section 7: Handling and Storage

Precautions:
Keep locked up.. Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not ingest. Do not breathe gas/fumes/ vapor/spray. Wear suitable protective clothing. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such as oxidizing agents, metals, acids, alkalis.

Storage:
Air and light sensitive. Store in light-resistance container. Keep container in a cool, well-ventilated area. Keep container tightly closed and sealed until ready for use. Avoid all possible sources of ignition (spark or flame).

Section 8: Exposure Controls/Personal Protection

Engineering Controls:
Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.

Personal Protection:
Splash goggles. Lab coat. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

Personal Protection in Case of a Large Spill:
Splash goggles. Full suit. Vapor respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits:
TWA: 7.6 (mg/m3) from ACGIH (TLV) [United States] SKIN
TWA: 2 (ppm) from ACGIH (TLV) [United States] SKIN
TWA: 2 [Canada]
TWA: 7.6 (mg/m3) [Canada]
TWA: 5 (ppm) from OSHA (PEL) [United States]

TWA: 19 (mg/m3) from OSHA (PEL) [United States]
TWA: 1 (ppm) [United Kingdom (UK)]
TWA: 4 (mg/m3) [United Kingdom (UK)]Consult local authorities for acceptable exposure limits.

Section 9: Physical and Chemical Properties

Physical state and appearance: Liquid. (Oily liquid.)

Odor: Aromatic. Amine like.

Taste: Burning.

Molecular Weight: 93.13 g/mole

Color: Colorless.

pH (1% soln/water): Basic.

Boiling Point: 184.1°C (363.4°F)

Melting Point: -6°C (21.2°F)

Critical Temperature: 425.6°C (798.1°F)

Specific Gravity: 1.0216 (Water = 1)

Vapor Pressure: 0.1 kPa (@ 20°C)

Vapor Density: 3.22 (Air = 1)

Volatility: Not available.

Odor Threshold: 2.4 ppm

Water/Oil Dist. Coeff.: The product is more soluble in oil; log(oil/water) = 0.9

Ionicity (in Water): Not available.

Dispersion Properties: See solubility in water, methanol, diethyl ether.

Solubility: Soluble in cold water, hot water, methanol, diethyl ether.

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Not available.

Incompatibility with various substances: Reactive with oxidizing agents, metals, acids, alkalis.

Corrosivity: Non-corrosive in presence of glass.

Special Remarks on Reactivity:
Air and light sensitive. May darken on exposure to light or air.
Incompatible with strong oxidizing agents , strong acids, bases, aluminum, fluorine, formaldehyde, iron, nitric acid, silver perchlorate, sodium peroxide, sulfuric acid, zinc, hydrogen peroxide, benzenediazonium-2-carboxylate, boron trichloride, tetranitromethane, trichloronitromethane, diisopropyl peroxydicarbonate, hexachloromelamine, peroxomonosulfuric acid, albumin, iron salts, perchloric acid, nitrobenzene, alkalis, potassium peroxide, glycerine ,

fuming nitric acid, peroxydisulfuric acid, N-chloro compounds, N-bromides (e.g. n-bromosuccinimide), nitrosyl fluroide, toluene diisocyanate, performic acid.
Formaldehyde + aniline reacts violently with 90% performic acid, acetic anhyride.
Aniline + trichloronitromethane can produce a violent reaction.
Aniline can react vigorously with oxidizing materials.
Violent reactions can occur with peroxyformic acid, diisopropyl peroxydicarbonate, fluorine, trichloronitromethane, chlorosulfonic acid, peroxydisulfuric acid, FO3Cl, nitric acid + N2O4 + sulfuric acid, b-propiolactone, AgClO4.

Special Remarks on Corrosivity: Not available.

Polymerization: Will not occur.

Section 11: Toxicological Information

Routes of Entry: Absorbed through skin. Dermal contact. Eye contact. Inhalation. Ingestion.

Toxicity to Animals:
WARNING: THE LC50 VALUES HEREUNDER ARE ESTIMATED ON THE BASIS OF A 4-HOUR EXPOSURE.
Acute oral toxicity (LD50): 250 mg/kg [Rat.].
Acute dermal toxicity (LD50): 820 mg/kg [Rabbit.].
Acute toxicity of the vapor (LC50): 175 7 hours [Mouse].

Chronic Effects on Humans:
CARCINOGENIC EFFECTS: Classified A3 (Proven for animal.) by ACGIH. 3 (Not classifiable for human.) by IARC.
MUTAGENIC EFFECTS: Mutagenic for mammalian somatic cells. Mutagenic for bacteria and/or yeast.
May cause damage to the following organs: blood, kidneys, liver, bladder, spleen, cardiovascular system, central nervous system (CNS).

Other Toxic Effects on Humans: Hazardous in case of skin contact (irritant, permeator), of ingestion, of inhalation.

Special Remarks on Toxicity to Animals: Not available.

Special Remarks on Chronic Effects on Humans:
May affect genetic materials.
May cause adverse reproductive effects.
It may cause cancer. However, IARC has found inadequate evidence in humans.
Human: passes through the placenta.

Special Remarks on other Toxic Effects on Humans:

Section 12: Ecological Information

Ecotoxicity: Not available.

BOD5 and COD: Not available.

Products of Biodegradation:
Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The products of degradation are less toxic than the product itself.

Special Remarks on the Products of Biodegradation: Not available.

Section 13: Disposal Considerations

Waste Disposal:

Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14: Transport Information

DOT Classification: CLASS 6.1: Poisonous material.

Identification: : Aniline UNNA: 1547 PG: II

Special Provisions for Transport: Not available.

Section 15: Other Regulatory Information

Federal and State Regulations:
California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer, birth defects or other reproductive harm, which would require a warning under the statute: Aniline
California prop. 65 (no significant risk level): Aniline: 0.1 mg/day (value)
California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer which would require a warning under the statute: Aniline
Connecticut hazardous material survey.: Aniline
Illinois toxic substances disclosure to employee act: Aniline
Illinois chemical safety act: Aniline
New York release reporting list: Aniline
Rhode Island RTK hazardous substances: Aniline
Pennsylvania RTK: Aniline
Minnesota: Aniline
Massachusetts RTK: Aniline
Massachusetts spill list: Aniline
New Jersey: Aniline
New Jersey spill list: Aniline
Louisiana RTK reporting list: Aniline
Louisiana spill reporting: Aniline
California Director's List of Hazardous Substances: Aniline
TSCA 8(b) inventory: Aniline
TSCA 8(a) IUR: Aniline
TSCA 8(d) H and S data reporting: Aniline: 10/4/92
SARA 302/304/311/312 extremely hazardous substances: Aniline
SARA 313 toxic chemical notification and release reporting: Aniline
CERCLA: Hazardous substances.: Aniline: 5000 lbs. (2268 kg)

Other Regulations:
OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).
EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.

Other Classifications:

WHMIS (Canada):
CLASS B-3: Combustible liquid with a flash point between 37.8°C (100°F) and 93.3°C (200°F).
CLASS D-1A: Material causing immediate and serious toxic effects (VERY TOXIC).
CLASS D-2B: Material causing other toxic effects (TOXIC).

DSCL (EEC):
R23/24/25- Toxic by inhalation, in contact with skin and if swallowed.
R36/38- Irritating to eyes and skin.
R40- Possible risks of irreversible effects.
S2- Keep out of the reach of children.

S28- After contact with skin, wash immediately with plenty of water.
S36/37- Wear suitable protective clothing and gloves.
S46- If swallowed, seek medical advice immediately and show this container or label.

HMIS (U.S.A.):

Health Hazard: 2

Fire Hazard: 2

Reactivity: 0

Personal Protection: h

National Fire Protection Association (U.S.A.):

Health: 3

Flammability: 2

Reactivity: 0

Specific hazard:

Protective Equipment:
Gloves.
Lab coat.
Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate.
Splash goggles.

Section 16: Other Information

References:
-Hawley, G.G.. The Condensed Chemical Dictionary, 11e ed., New York N.Y., Van Nostrand Reinold, 1987.
-Material safety data sheet emitted by: la Commission de la SantÃ© et de la SÃ©curitÃ© du Travail du QuÃ©bec.
-SAX, N.I. Dangerous Properties of Indutrial Materials. Toronto, Van Nostrand Reinold, 6e ed. 1984.
-The Sigma-Aldrich Library of Chemical Safety Data, Edition II.
-Guide de la loi et du rÃ¨glement sur le transport des marchandises dangeureuses au canada. Centre de conformitÃ© internatinal LtÃ©e. 1986.
Registery of Toxic Effects of Chemical Substances (RTECS) database, REPROTEXT data base, Ariel Global View database.

Other Special Considerations: Not available.

Created: 10/11/2005 11:19 AM

Last Updated: 10/11/2005 11:19 AM

Material Safety Data Sheet
(MSDS-HCL)

PRODUCT IDENTIFICATION	
Product Name	Hydrochloric Acid Solution 20 Deg. Be – 31.5% 22 Deg. Be – 35.2%
Trade Names and Synonyms	Hydrogen Chloride (Aqueous) Muriatic Acid
Manufacturer/Distributor	Trans Chem, Inc. 1259 Safe Energy Dr. Port Allen, Louisiana 70767 (225) 389-9133 Various others
Transportation Emergency	**800-255-3924 (24 hrs -- *CHEM • TEL*)**

HAZARDOUS COMPONENTS			
Material or Component	**CAS No.**	**TLV**	**PEL**
Hydrochloric Acid	7647-01-0	$7mg/m^3$	5PPM
N/A = Not assigned NE = Not established			

PHYSICAL DATA	
Boiling Point	127° F
Vapor Pressure	24mm Hg – 20 Deg. Be 100mm Hg – 22 Deg. Be
Solubility in Water	Complete
Specific Gravity	1.16 @ 15.5° C 20 Deg. Be 1.1789 @ 15.5° C 22 Deg. Be
Melting Point	N/A
Vapor Density	Similar to Water
Evaporation Rate	Not Applicable
Appearance and Odor	Clear Colorless to Yellowish Fuming Liquid, Pungent and Irritating

HAZARDOUS REACTIVITY
Stable under ordinary conditions of use and storage. Does not polymerize. Incompatible with aluminum and aluminum alloys, carbon steel, copper and copper alloys, and nylon. Hydrogen gas will be formed if acid contacts metal.

FIRE AND EXPLOSION DATA	
Flashpoint	Not Flammable
Extinguishing Media	Use any means suitable for extinguishing surrounding fire.
Decomposition Products	Contact with most metals may produce Hydrogen gas to potentially explosive limits.
Unusnal Explosion	Containers may explode when heated. Consult the 2000 Emergency Response Guidebook, Guide 157 for further details.

HEALTH HAZARDS / FIRST AID	
Inhalation	Inhalation causes severe irritation of upper respiratory tract. FA: Remove person to to fresh air. If not breathing, give artificial respiration. Call physician.
Ingestion	CORROSIVE ! Ingestion of Hydrochloric Acid can cause burns of the mouth, throat, esophagus and gastrointestinal tract. FA: DO NOT INDUCE VOMITING. Give large quantities of water or milk of magnesia. Never give anything by mouth to an unconscious person. Get immediate medical attention.
Skin Contact	CORROSIVE ! Can cause redness, pain and skin burns. Can cause some tissue destruction. FA: Immediately flush with water.
Eye Contact	CORROSIVE ! FA: Continuously flush eyes with large amounts of water for at least 20 minutes. If irritation continues, seek medical attention.

SPILL OR LEAK PROCEDURES	
Spill/leak	In the event of a spill or leak, keep upwind. Ventilate enclosed areas until spill or leak is contained, neutralized and prepared for removal.
Waste disposal	Disposal of waste material or residue may be subject to federal, state, or local regulation. Before transporting waste material see 49 CFR 172.

SPECIAL PROTECTION INFORMATION	
Ventilation	Use only in areas with adequate ventilation.
Eye Protection	Use chemical safety goggles, plus a safety shield is recommended. Contact lenses should not be worn when working with this material.
Skin Protection	Wear impervious protective clothing; i.e., Boots, Gloves, Lab Coat, Apron or Coveralls to prevent skin contact.
Other	If working in an area of potential exposure, use an NIOSH approved respirator when material is fuming and exceeds the TLV.

STORAGE CONDITIONS
Store and handle only in containers suitably lined with or constructed of materials specified, by the manufacturer, for the product. Protect against physical damage. Keep separated from incompatible materials.

REGULATORY INFORMATION	
Proper shipping name	Hydrochloric acid
Hazard class	8
UN Number	UN1789
DOT Label & Placard	Corrosive
NFPA / HMIS Ratings	Health – 3; Flammability – 0; Reactivity – 0
SARA Title III	Reporting Sections 302, 311 & 313

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MSDS prepared by: Allen M. Sweeney
Original publication date: 8/5/1999
Revision date 10/27/06

Encl: 06

PHYSICAL AND CHEMICAL PROPERTIES OF THE RAW MATERIAL

1 Acetanilide:

Acetanilide is odorless white shining crystalline leaflets or white crystalline powder. It is combustible solid and moderate fire hazard when exposed to heat or flame. Physical and chemical properties of Acetanilide are as given below:

Sr. No.	Properties	
1.	Solubility	1gm/185 ml water
2.	Specific Gravity	1.219 @ 15 ^{0}C
3.	Melting Point	113 – 115 ^{0}C
4.	Vapour Density (Air=1)	4.65
5.	Vapour Pressure (mm Hg):	1 @ 114 ^{0}C

It is stable under ordinary conditions of use and storage and appreciably volatile at 95 $_{o}$C. It is incompatible with strong oxidizing agents, caustics and alkalies. On burning, it may produce carbon monoxide, carbon dioxide and nitrogen oxides. Hazardous polymerization of Acetanilide will not occur. Contact of Acetanilide with heat, flames, ignition sources and Incompatibles should be avoided. Flammability of Acetanilide is rated 3 and its reactivity is rated 1 by NFPA. Above flash point, explosive vapor-air mixtures may be formed. For extinguishing fire, water spray, dry chemical, alcohol foam, or carbon dioxide should be used.

2 Caustic Soda:

Sodium hydroxide is white flaked and odourless and identified as a corrosive hazard of Class 8, when spilled on the ground, it evaporates and some toxic vapour may be formed but alkali vapour cloud will be vary small and of no consequence.

Sodium hydroxide			
Sr. No.	**Properties**		**Description**
1.	Chemical Name	:	Sodium Hydroxide
2.	Molecular Weight	:	40 gm/mole
3.	Appearance	:	White flakes/pellets
4.	Flash Point	:	Not pertinent
5.	Fire Point	:	No
6.	Boiling Point	:	1390 °C
7.	Melting Point	:	318.4 °C
8.	Solubility	:	Soluble in water at 30 °C
9.	Specific Gravity	:	2.12
10.	CAS. No.	:	1310-73-2
11.	Protective Equipment	:	Use chemical safety goggles, safety shield, Boots, gloves, Lab Coat, Apron. Contact lenses must not be worn when working with this material.
12.	Toxicological Information	:	**TLV: 2 ppm**

13.	Fire Extinguishing Measures	:	Non-Flammable, keep containers cool by spraying water if exposed to heat or flame. If exposed heat or flame toxic gases are produced.
14.	First Aid Measures	:	**Eye Contact:** immediately flush eyes with water for at least 15 minutes **Skin Contact**: Remove the wetted clothes & Immediately flush with plenty of water. **Inhalation:** Remove person to fresh air, if not breathing, give artificial respiration. **Ingestion:** if affected person is conscious, have him drink water or milk. Get medical as quickly as possible.

For, Associated Dyestuff Pvt. Ltd.

Director

3 Chloro Sulphonic Acid:

Chloro Sulphonic acid is light colour liquid with strong odour. It is easily soluble in easily soluble in cold water and hot water. Physical and chemical properties of Chloro Sulphonic Acid are as given below:

Sr. No.	Properties	
1.	pH (1% sol_n/water)	1 (Acidic)
2.	Boiling Point	158 °C
3.	Melting Point	-158 °C
4.	Specific Gravity	1.76 (Water = 1)
5.	Vapour Press	1 mm of Hg (@ 20 °C)
6.	Vapour Density	4.02 (Air = 1)
7.	Instability Temperature	158 °C

Chloro Sulphonic acid is extremely reactive or incompatible with alkalis, moisture. It is reactive with reducing agents, organic materials, metals. It is highly corrosive in presence of aluminum, zinc, corrosive in presence of steel, of copper and slightly corrosive to corrosive in presence of stainless steel, of stainless steel. It is non-corrosive in presence of glass. It is not combustible in the nature; therefore, fire extinguishers are not required.

4. Ethylene Oxide:

Ethylene oxide is colourless gas with a sweet odor. It is flammable over an extremely wide range in air and forms explosive mixtures with air which may be ignited by rapid compression. As per National Fire Protection Association (USA), rating for flammability: 4, health: 3 and reactivity is 3. Physical and chemical properties of Ethylene Oxide are as given below:

Sr. No.	Properties	
1.	Appearance	Colourless
2.	Boiling Point	10.7 °C
3.	Melting Point	-111 °C
4.	Specific Gravity	0.882
5.	Vapour Density	1.52 g/l
6.	Flash Point	-20 ^{o}C
7.	Explosion limits	LEL: 3%, UEL: 100%
8.	Auto ignition	430 °C

It is stable when isolated, but reacts violently with water, bases, oxidizing metals, acids, alcohols, alkali metals, ammonia, chemically active metals and their salts. Ethylene oxide is unstable at elevated temperatures. It should be stored at temperatures less than 54 ^{o}C.

Vapors of ethylene oxide may react violently with caustic soda, hydrated lime (quicklime), magnesium chloride, ammonia, alcohols and amines. Most of the materials other than stainless steel or nickel will cause polymerization or decomposition. Decomposition of ethylene oxide may cause exothermic rearrangement.

Hazardous polymerization of Ethylene oxide will not occur. Metal acting as catalysts for the decomposition of ethylene oxide include copper, silver, mercury, magnesium and their alloys. Potassium, tin, zinc, aluminum and iron oxides tend to accelerate the polymerization of Ethylene oxide. Electrical equipment in Ethylene oxide handling area should be non sparking or explosion proof. Earth-ground or bond should be done in piping and equipment associated with the Ethylene oxide handling.

In the event of fire, water mist or spray, Carbon dioxide, dry chemicals and foams should be used as fire extinguishing media. It must be diluted 22 times by volume in water before it is no longer flammable.

5. Oleum (65%):

Oleum is viscous liquid and highly toxic, may have a sharp and choking odour. It also known as Pyro Sulphuric acid. It contains 20% SO_3, therefore, called as Sulphuric Acid fuming. Oleum is stable but very hygroscopic and reacts violently with water. It is incompatible with organic materials, powdered metals, bases, halides.

Physical and chemical properties of Oleum are as given below:

For, Associated Dyestuff Pvt. Ltd.

Director

Sr. No.	Properties	
1.	pH	0.3 (1N solution at 25°C)
2.	Molecular Weight	178.14
3.	Physical State	Fuming liquid.
4.	Odor Threshold	< 1 mg/m3.
5.	Vapour Pressure at 20°C	20%: 1.1 mmHg
6.	Vapour Density at 20°C	2.8 (Air = 1.0)
7.	Boiling Point	10.7 °C
8.	Melting Point	-111 °C
9.	Specific Gravity at 4°C	20%: 1.916;
10	Evaporation Rate	0.56 g/m_2/s at 30°C, 16 km/hr wind speed.
11	Solubility	Miscible in all proportions in water. Reacts violently with water.

It is not flammable but highly reactive and strong dehydrating agent, which may cause ignition of finely divided combustible materials on contact. It reacts violently with water with evolution of heat can react with organic materials explosively. When it reacts with many metals to liberate hydrogen gas which can form explosive mixtures with air and hydrogen, a highly flammable gas, can accumulate to explosive concentrations inside drums, or any types of steel containers or tanks upon storage.

6. Soda Ash:

Soda ash is odourless, white powder or granules. It is not considered to be a fire and explosion hazard. Physical and chemical properties of Soda Ash are as given below:

Soda Ash			
Sr. No.	Properties		Description
01	Chemical Name	:	Sodium Carbonate
02	Molecular Weight	:	106 gm/mole
03	Appearance	:	Crystalline Powder, colorless to white
04	Flash Point	:	N.A.
05	Fire Point	:	N.A.
06	Boiling Point	:	Not available
07	Melting Point	:	851°C
08	Solubility	:	33% in water
09	Specific Gravity	:	2.25
10	CAS. No.	:	497-19-8
11	Protective Equipment	:	Chemical safety goggles, protective gloves & clothing
12	Toxicological Information	:	LD50 (oral-rat): 6600 mg/kg
13	Fire Extinguishing Measures	:	Explosion may occur when applied to red-hot aluminum, wear self contained breathing apparatus and protective clothing to prevent contact with skin and clothing.
14	First Aid Measures	:	1. Harmful if swallowed, may cause irritation, avoid breathing vapors or dust, use with adequate ventilation. 2. Avoid contact with Eyes, Skin & clothes. Wash thoroughly after handling. Keep containers closed.

It is stable under ordinary conditions of use and storage. It is hygroscopic in nature and readily absorbs moisture from the air. Solutions of soda ash are strong bases. On decomposition it produces oxides of carbon and sodium oxide. Hazardous polymerization of soda ash will not occur. It incomputable and reacts with fluorine, aluminum, phosphorous pentoxide, sulfuric acid, zinc, lithium, moisture, calcium hydroxide and 2,4,6- trinitrotoluene. It reacts violently with acids to form carbon dioxide. The conditions of moisture, heat, dusting and incompatibles should be avoided.

7. Sulphuric Acid (98%):

Sulphuric acid is colourless and odourless oily liquid and identified as a corrosive hazard of class 8. As a result of spillage on the ground, it evaporates and forms a toxic vapour cloud. Sulphuric acid is a strong acidic oxidizer and reacts with many metals to form flammable hydrogen gas, which forms explosive mixtures with air. When reacts with water to produce heat and toxic and corrosive fumes. It is miscible in all proportions water.

Sr. No.	Properties	
1.	Boiling Point	327 ^{0}C
2.	Melting Point	-2 ^{0}C
3.	Specific Gravity	1.84
4.	Vapour pressure	<0.3 mm Hg at 20 ^{0}C
5.	Vapour density	3.4

It should be avoided from water, most common metals, organic materials, strong reducing agents, combustible materials, bases, oxidizing agents. When it react with metals rapidly or

violent and generates hydrogen which is flammable and explosion hazard. For fire fighting, carbon dioxide and dry chemical power should be used as fire extinguishing media but water should not be for this purpose.

8. Acetic Acid:

It is clear and colourless liquid with strong vinegar-like order. It is infinitely soluble in the water. Hazardous polymerization of acetic acid is not occurred. Acetic acid is stable under normal conditions but heat and sunlight can contribute to instability. It releases heat and toxic, irritating vapors when mixed with water. Acetic acid contracts slightly upon freezing which may cause the container to burst.

It is incompatible with chromic acid, nitric acid, ethylene glycol, perchloric acid, phosphorous tri-chloride, oxidizers, sodium peroxide, strong caustics, most metals (except aluminum), carbonates, hydroxides, oxides, and phosphates. It should be avoided with heat, flame, ignition sources, freezing and incompatibles.

It forms carbon dioxide and carbon monoxide when heated to decomposition. It may also release toxic and irritating vapors. Physical and chemical properties of acetic acid are as given below:

Sr. No.	Properties	
1.	Boiling Point	327 ^{0}C
2.	pH	2.4 (1.0M solution)
3.	Density	1.05
4.	Boiling point	118 ^{0}C
5.	Melting Point	16.7 ^{0}C
6.	Specific Gravity	1.05
7.	Vapour pressure	11 mm Hg at 20 ^{0}C

8.	Vapour density	2.07
10.	Flash point	40 ^{0}C
11.	Explosion limits	4% - 16%
12.	Ignition temperature	426 ^{0}C

Above flash point, vapor-air mixtures of acetic acid are explosive within flammable limits. Vapors can flow along surfaces to distant ignition source and flash back. When it contacts with strong oxidizers, it may cause fire. It reacts with most metals to produce hydrogen gas, which can form an explosive mixture with air. Dry chemical, foam or carbon dioxide can be used for extinguishing fire. Water spray may be used to keep fire exposed containers cool.

9. Aniline:

Aniline is colourless oily liquid with weak amine odour and darkens on exposure to light or air. Physical and chemical properties of Aniline are as given below:

Sr. No.	Properties	
1.	Solubility	3.5 gm in 100 gm water @ 20 ^{0}C
2.	% Volatiles by volume	100 @ 21 ^{0}C
3.	Boiling point	184 ^{0}C
4.	Melting Point	-6.2 ^{0}C
5.	Specific Gravity	1.022 @ 20 ^{0}C
6.	Vapour pressure	0.7 mm Hg at 25 ^{0}C
7.	Vapour density	3.22 at 185 ^{0}C
8.	Flash point	70 ^{0}C

10.	Explosion limits	1.3 – 11 %
11.	Auto Ignition temperature	615 ^{0}C

It is combustible liquid and flammable when exposed to heat or flame. In contact with strong oxidizers it may cause fire or explosion. Above flash point, aniline vapor-air mixtures are explosive within flammable limits and sealed containers may rupture when heated. Dry chemical, foam, carbon dioxide or water spray can be used as fire extinguishing media.

It is stable under normal conditions. However, it is incompatible with oxidizing agents, bases, acids, iron and iron salts, zinc, aluminum. It is sensitive to light. Containers should be protected against physical damage and stored in a cool, dry well-ventilated location, away from any area where the fire hazard may be acute. Outside or detached storage should be preferred. Aniline should be separated from incompatibles. Containers should be bonded and grounded for transfers to avoid static sparks. Storage and handling areas should be No Smoking areas. Non-sparking type tools and equipment, including explosion proof ventilation. Freezing of aniline should be protected. Containers of aniline may be hazardous when empty since they retain product residues, vapors, liquid.

10 Cyanuric Chloride:

Cyanuric Chloride is white crystalline solid. It is stable under ordinary conditions of use and storage. It is incompatible with strong oxidizing agents and water. It is soluble and reacts with water. It is sensitive to heat and melted between 145 ^{0}C - 148 ^{0}C. Boiling point of Cyanuric Chloride is 190 ^{0}C. Hazardous polymerization of Cyanuric Chloride will not occur.

11 H-Acid:

H- Acid is 1-amino-8-hydroxynaphthalene-3,6-disulfonic acid. It is white to gray-yellow powder. It is slightly soluble in water. It is stable in normal conditions. As per National Fire Protection Association (USA), rating for flammability is 1, health is 1 and reactivity is 0.

12 Hydrochloric Acid:

Hydrochloric acid is colorless to slightly yellow with a pungent, irritating odour and identified as a corrosive hazard of class 8. When spilled on the ground, it evaporates and some toxic vapour may be formed but acid vapour cloud will be vary small and of no consequence is anticipated.

Hydrochloric Acid			
Sr. No.	**Properties**		**Description**
1.	Chemical Name	:	Hydrochloric Acid
2.	Molecular Weight	:	36.5
3.	Appearance	:	Clear Colorless to Yellowish Fuming liquid, pungent and irritating
4.	Flash Point	:	Not Available
5.	Fire Point	:	Not Available
6.	Boiling Point	:	127 °F
7.	Melting Point	:	Not Available
8.	Solubility	:	Completely Soluble in water
9.	Specific Gravity	:	1.16 at 15.5 °C
10.	CAS. No.	:	7647-01-0
11.	Protective Equipment	:	Use chemical safety goggles, safety shield, Boots, gloves, Lab Coat, Apron. Contact lenses must not be worn when working with this material.
12.	Toxicological Information	:	Oral-rat LD50: 900 mg/kg
13.	Fire Extinguishing Measures	:	Not Flammable, containers may explode when heated, contact with most metals may produce Hydrogen gas to potentially explosive limits.

14.	First Aid Measures	:	**Eye Contact:** Corrosive, immediately flush eyes with water for at least 20 minutes **Skin Contact**: can cause redness, pain and skin burns. Can cause some tissue destruction. Immediately flush with plenty of water. **Inhalation:** causes severe irritation of upper respiratory tract. Remove person to fresh air, if not breathing, give artificial respiration. **Ingestion:** can cause burns of mouse, throat, and esophagus tract. Give large quantity of water or milk of magnesia; never give anything by mouth to an unconscious person.

For, Associated Dyestuff Pvt. Ltd.

Director

13. Sodium Bicarbonate:

It is odourless white crystalline powder. It is not considered to be a fire and explosion hazard. Physical and chemical properties of Bicarbonate of Soda are as given below:

Sr. No.	Properties	
1.	Solubility	7.8 gm in 100 gm water @ 18 ^{0}C
2.	Density	2.2
3.	pH	8.3 (0.1 molar @ 25 ^{0}C
4.	Melting Point	60 ^{0}C

It is stable under ordinary conditions of use and storage. On decomposition it produces carbon dioxide. Hazardous polymerization of Bicarbonate of Soda will not occur. It reacts with acids to form carbon dioxide and dangerous reaction with mono ammonium phosphate or a sodium potassium alloy. Condition of heat, moisture and incompatibles should be avoided.

14. Sodium Nitrate ($NaNO_2$):

Sodium Nitrite is odourless white or yellowish-white crystalline granules. It is not combustible, but it is a strong oxidizer and its heat of reaction with reducing agents or combustibles may cause ignition and increases the flammability of any combustible material.

When Sodium Nitrite contacts with oxidizable, it may cause extremely violent combustion. It may explode when heated to 537 ^{0}C or on severe impact or on contact with cyanides, ammonium salts, cellulose, lithium, potassium plus ammonia, and sodium thiosulfate. Physical and chemical properties of Sodium Nitrite are as given below:

Sr. No.	Properties	
1.	Solubility	85.2 gm in 100 gm water @ 20 ^{0}C
2.	Density	2.17
3.	pH	9.0 Aqueous solution
4.	Melting Point	271 ^{0}C
5.	Boiling Point	>320 ^{0}C

It is stable in closed containers at room temperature. It is very hygroscopic in nature. It is slowly oxidizes to sodium nitrate when exposed to air. On decomposition, it produces oxides of nitrogen. Hazardous polymerization of sodium nitrite will not occur. It reacts vigorously with reducing materials and is incompatible with many substances including ammonium salts, cellulose, cyanides, lithium, potassium plus ammonia, sodium thiosulfate, aminoguanide salts, butadiene, phthalic acid, phthalic anhydride, reducants, sodium amide,

sodium disulphite, sodium thiocyanate, urea, wood and organic matter. Contact of Sodium Nitrite with heat, flame, ignition sources, shock, friction, incompatibles should be avoided.

15. Vinyl Sulphone:

Vinyl Sulphone is whit to grey color fine powder. It is maximum 1 % insoluble in water. Vinyl sulphone is slightly flammable at > 290 degree C in presence of open flames and sparks, of heat. Thermal decomposition may produce CO and /or CO oxides of nitrogen, hydrogen chloride and other decomposition products. Vinyl sulphone is stable under normal temperature and pressure. It is reactive with strong oxidizers. For small fire, dry chemical powder should be used while for large fire, water spray, co, fog or foam should be used. However, water jet should not be used.

16. J Acid:

J Acid is Phenyl J. Acid. It is stored in powder form. It is stable at normal condition of usage and does not have potential for fire.

17. MPDSA:

MPDSA is Meta Phenylene Di Amine 4 – Sulphonic Acid. It is Odourless light brown to white very file crystals. It is neutral by pH value and soluble in water.

MPDSA		
Sr. No.	**Properties**	**Description**
1.	Chemical Name	2,4 Diamino Benzenesulphonic acid
2.	Molecular Weight	188 gm/mole
3.	Appearance	Brownish Powder
4.	Flash Point	----
5.	Fire Point	----
6.	Boiling Point	----
7.	Melting Point	Above 300 °C

8.	Solubility	Highly Soluble in water & alkali media
9.	Specific Gravity	1.1 for 25% Solution
10.	CAS. No.	88-63-1
11.	Protective Equipment	Safety Glasses, Adequate Ventilation
12.	Toxicological Information	LD 50: 3480 mg/kg (oral- rat)
13.	Fire Extinguishing Measures	Use CO_2, extinguishing powder or water jet. It is combustible material. Development of hazardous combustion gases or vapors possible in the event of fire.
14.	First Aid Measures	**Eye Contact:** check for or remove any contact lenses, immediately flush eyes with water for at least 15 minutes. **Skin Contact**: remove the contaminated clothes as quickly as possible. Thoroughly clean shoes before use. Wash with disinfectant soap and cover the contaminated skin with an anti-bacterial cream. **Inhalation:** seek immediate medical attention. **Ingestion:** prompt medical attention is mandatory in all cases of overexposure. Do not induce vomiting, loosen tights clothing.

18. Acetic Anhydride:

Acetic anhydride is clear, colourless liquid with strong acetic odour. It is flammable. It is soluble in ether, chloroform and benzene. It is incompatible with strong oxidizing agents, water, strong bases and alcohols. Solubility of acetic anhydride in water is appreciable. Above flash point, vapor-air mixtures of acetic anhydride are explosive within flammable limits. Vapors can flow along surfaces to distant ignition source and flash back. Contact with strong oxidizers may cause fire. It reacts with most metals to produce hydrogen gas, which can form an explosive mixture with air. Physical and chemical properties of acetic anhydride are as given below:

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Sr. No.	Properties	
1.	Solubility	85.2 gm in 100 gm water @ 20 ^{0}C
2.	Density	2.17
3.	pH	9.0 Aqueous solution
4.	Melting Point	-73 ^{0}C
5.	Boiling Point	139 ^{0}C
6.	Vapour density:	3.5 (air = 1)
7.	Vapour pressure:	4 mm Hg at 20 ^{0}C
8.	Flash point:	54 ^{0}C
9.	Explosion limits:	2.7 - 10.1%

Dry chemical, alcohol foam, or carbon dioxide should be used as fire extinguisher. Water spray should be used with caution as it reacts with water

For, Associated Dyestuff Pvt. Ltd.

Director

19. MPD:

MPD is known as 2-Methyl-2, 4-pentandiol and is a liquid form. It is stable under normal conditions of storage and handling. MPD is incompatible with strong oxidizing agents, strong acids and strong reducing agents. Physical and chemical properties of 2-Methyl-2, 4-pentandiol are as given below:

Sr. No.	Properties	
1.	Solubility	85.2 gm in 100 gm water @ 20 ^{0}C
2.	Density	0.93 gm / CM^3
3.	pH	9.0 Aqueous solution
4.	Melting Point	-40 ^{0}C
5.	Boiling Point	198 ^{0}C
6.	Vapour density:	4.1 (air = 1)
7.	Vapour pressure:	negligible at 20 ^{0}C
8.	Flash point:	54 ^{0}C
9.	Explosion limits:	2.7 - 10.1%

For, Associated Dyestuff Pvt. Ltd.

Director

20. K Acid:

K Acid is 2 Naphthylamine 3:6:8 Trisulphonic Acid. It is stored in powder form. It is stable at normal condition of usage and does not have potential for fire.

21. MUA:

MUA is Meta Ureido Aniline. It is odourless light grey to white powder. It is acidic by pH value. It is slightly soluble in cold water and it will dissolve at 55 ºC in hot water.

22. F. C. Acid:

FC Acid is 4:4' Diamino Diphenyl Amine 2 Sulphonic Acid. It is dark blue to grey powder. It is stable under ordinary conditions of use and storage. It is soluble in water.

23. CPC

1. CPC Blue			
No.	Properties		Description
01	Chemical Name	:	(SP-4-1)-[29 H,31H-phthalocyaninato (2-)-N^{29},N^{30},N^{31},N^{32}]Copper
02	Molecular Weight	:	576.08
03	Appearance	:	Bright Blue micro crystals with purple luster
04	Solubility	:	Soluble in 98 % H2SO4, Practically insoluble in water, alcohol and hydrocarbon.
05	Specific Gravity	:	1.5 (water = 1)

06	CAS No	:	147-14-8
07	Protective Equipment	:	Splash goggles, Lab Coat, Dust respirator, Hand Gloves, Boots.
08	Toxicological Information	:	Not Available
09	Fire Extinguishing measures	:	Dry Chemical Powder, Water Spray, Fog of Foam, Do not use water jet.
10	First Aid measures	:	Check for and remove any contact lenses. Do not use an eye ointment. Seek medical attention. After contact with skin, wash immediately with plenty water. Wash with a disinfectant soap and cover the contaminated skin with an anti bacterial cream. In case of ingestion do not induce vomiting. Loosen tight clothing such as collar, tie, belt or waistband. If the victim is not breathing, perform mouth – to – mouth resuscitation.

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Enclosure: 07

Chemical Name & Physical Form of Raw Materials with its storage facility

Sr. No.	Name of Raw Material	Container Type	MOC Container	Physical form
1	Aniline	Tank	MS	Liquid
2	Acetic Acid	Tank	HDPE	Liquid
3	Acetanilide	Bag	HDPE	Flakes
4	Ammonium Molybdate	Bag	HDPE	Solid
5	Aluminium Chloride	Bag	HDPE	Solid
6	Acetic Anhydride	Carboys	HDPE	Liquid
7	Beta Chloro	Carboys	HDPE	Liquid
8	Chloro Sulphonic Acid	Tank	MS	Liquid
9	Cuprous Chloride	Bag	HDPE	Solid
10	CPC	Bag	HDPE	Solid
11	Copper Phthalocyanine	Bag	HDPE	Solid
12	Chlorine	Cylinder	MS	Liquefied Gas
13	Caustic Soda Lye (48%)	Tank	MS	Liquid
14	Cynuric Chloride	Drum	MS	Powder

15	Ethylene Oxide	Tank	MS	Liquefied Compressed gas
16	J. Acid	Bag	HDPE	Powder
17	K. Acid	Bag	HDPE	Powder
18	MPDSA	Bag	HDPE	Powder
19	MUA	Bag	HDPE	Powder
20	NMJ Acid	Bag	HDPE	Powder
21	Phthalic Anhydride	Bag	HDPE	Powder
22	PCl_3	Tank	MS	Liquid
23	HCL	Tank	HDPE /MSRL	Liquid
24	H. Acid	Bag	HDPE	Solid
25	Oleum	Tank	MS	Liquid
26	Sodium Bi. Sulphate	Bag	HDPE	Solid
27	Sulphuric Acid	Tank	MS	Liquid
28	Sulpho Tobias Acid	Bag	HDPE	Powder
29	Sodium Hydroxide	Bag	HDPE	Powder
30	Tri Chloro benzene	Tank	MS	Liquid
31	Nitro benzene	Tank	MS	Liquid
32	Ortho Nitro Toluene	Tank	MS	Liquid

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33	Beta Napthol	Bag	HDPE	Powder
34	Thionyl Chloride	Tank	MS	Liquid
35	Xylene	Tank	MS	Liquid
36	Mono Chloro benzene	Tank	MS	Liquid
37	Liq. Ammonia	Tank	HDPE	Liquid
38	Nitrogen	Cylinder	--	Gas

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Enclosure: 08

Details of Hazardous Chemicals

The Raw Materials, which are termed as Hazardous Chemicals as per the **"Manufacturing, Storage and Import of Hazardous Chemicals Rules, 1989**", are as listed in below **Table**

Hazardous Chemicals	Reference The Manufacturer, storage & Import of Hazardous chemical Rules 1989	Maximum Quantity to be Stored at a time	Threshold Storage quantity in MT as per schedule 3 for application Rules 10-12
Acetic Anhydride	Sr.No. 3 (part II, Sch 1 of MSIHCR, 1989	15	--
Acetic Acid	Sr.No. 2 (part II, Sch 1 of MSIHCR, 1989	25	--
Aluminum Chloride	Sr.No. 22 (part II, Sch 1 of MSIHCR, 1989	15	--
Cuprous Chloride (Copper & its Compound)	Sr.No. 146 (Part II, Schedule 1 of MSICR, 1989	10	
Sulphuric Acid	Sr.No. 591 (part II, Sch 1 of MSIHCR, 1989	10	--
Phthalic Anhydride	Sr.No. 508 (Part II, Schedule 1 of MSICR, 1989	175	--
Oleum	Sr.No. 444 (Part II, Schedule 1 of MSICR, 1989	10	---

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Nitro benzene	Sr.No. 425 (Part II, Schedule 1 of MSICR, 1989	10	---
Caustic Soda	Sr.No. 571 (Part II, Schedule 1 of MSICR, 1989	10	--
Chloro Sulphonic Acid	Sr.No. 136 (Part II, Schedule 1 of MSICR, 1989	45	---
Chlorine	Sr.No. 119 (Part II, Schedule 1 of MSICR, 1989	30	25 MT
Ethylene Oxide	Sr.No. 269 (Part II, Schedule 1 of MSICR, 1989	25	50 MT
PCl_3	Sr.No. 506 (Part II, Schedule 1 of MSICR, 1989	25	--

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Enclosure: 09

Manufacturing process & Chemical Reaction

1. CHEMICAL REACTION FOR CPC BLUE:-

$4C_8H_4O_3$ + $12CON_2H_4$ + Cu

Phthalic Anhydride
M.W. 148 x 4
(592)

Urea
M.W. 60 * 12 = 720

M.W. = 63.5

1375.5

$C_{32}H_{16}CUN_8$ + $16NH_3$ + $12CO_2$

Copper Phthalocyanine
M.W. = 575.5

M.W. = 17 * 16 = 272

M.W. = 44 * 12 =528

1375.5

Clarification regarding side reaction:-

The main raw material for manufacturing of Copper Phthalocyanine is Phthalic Anhydride, Urea and Cuprous Chloride.

Excess quantity of Phthalic anhydride and urea are forming Phthalimide and isoindoline derivatives.
Excess of Cuprous Chloride is generating Cupric Chloride and that is finding their way in the effluent.

Molyblate used as catalyst also goes in the effluent. Alkali and Acidic washes are removing the impurities from the product and taking them in the liquid effluent.

Excess of Sulphuric Acid in the effluent is neutralized by lime in primary ETP and calcium Sulphate is precipated. In this calcium Sulphate sludge, Phthalimide and isoindoline derivatives, copper and molybdenum are also present.

2 & 3 CHEMICAL REACTION FOR ALPHA BLUE & BETA BLUE:-

The manufacture of Alpha Blue & Beta Blue from CPC Blue does not involve a chemical process except reorientation and crystallization of copper Phthalocyanine Alpha Blue.

CPC Crude ⟶ **ALPHA BLUE / BETA BLUE**
Polymorphic form of CPC

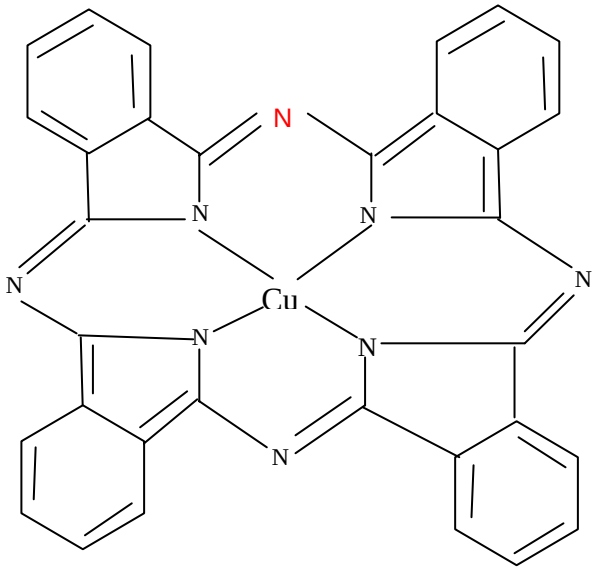
1100 Kgs of crude CPC produces 1050 Kgs of Copper Phthalocyanine Alpha Blue. About 50 Kgs of impurities, undercover and lost copper Phthalocyanine is left in the effluent.

Due to reorientation and Crystallization the structure and molecular product of CPC Blue, Alpha Blue & Beta Blue are same.

Loss of CPC in spent Sulphuric Acid can be minimized by optimizing temperature, Concentration of Sulphuric Acid and quantity of water.

DIRECT BLUE-86:

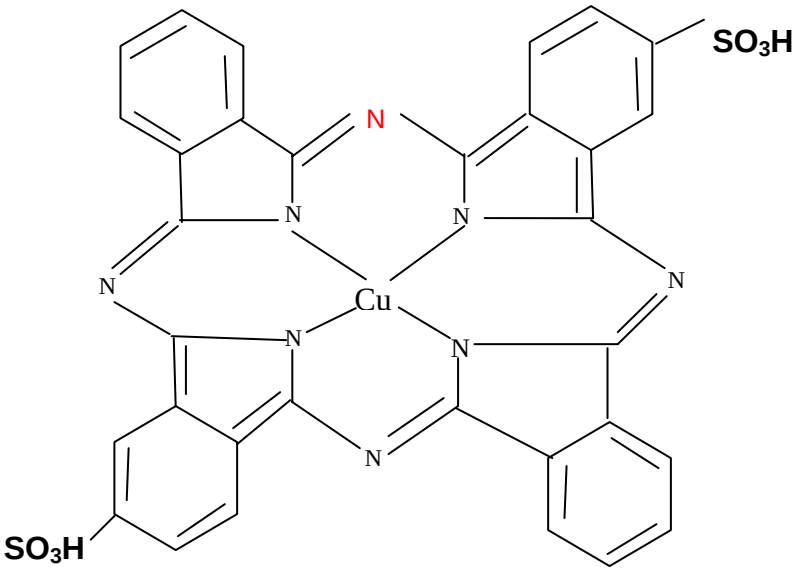
1. SULPHONATION:



COPPER PHTHALOCYANINE: MW = 576

+ $2H_2S_20_7$

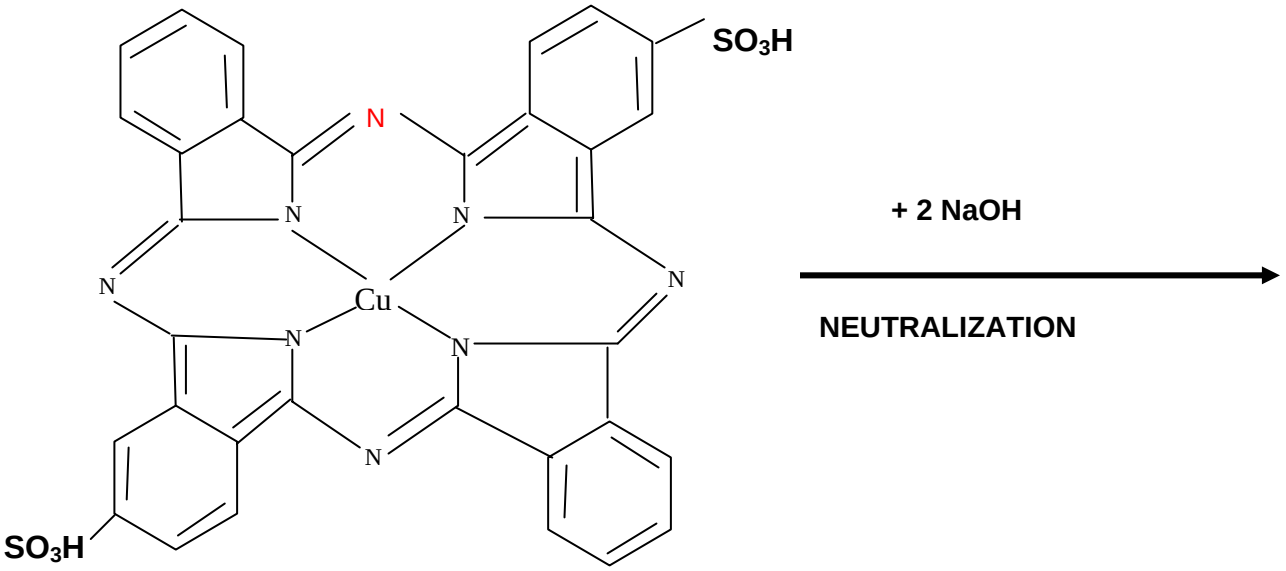
OLEUM
MW = 178



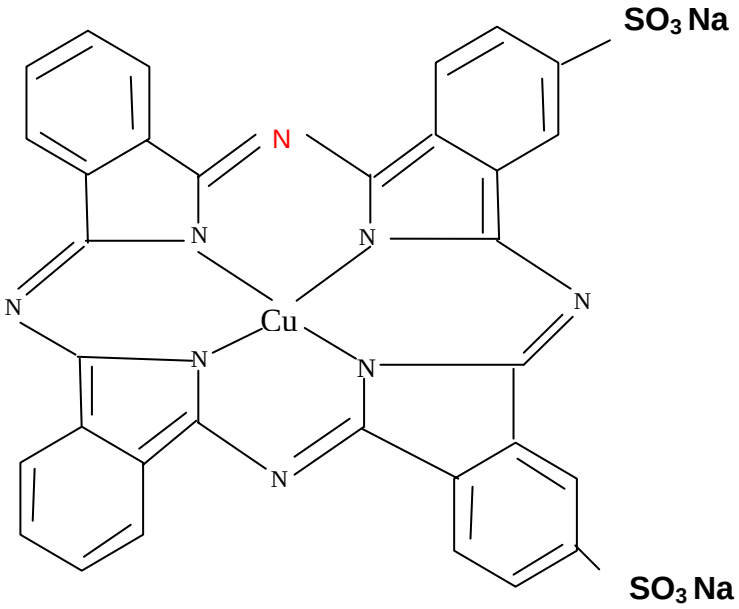
+ $2H_2SO_4$

DIRECT BLUE MW = 736

2. CONDENSATION:



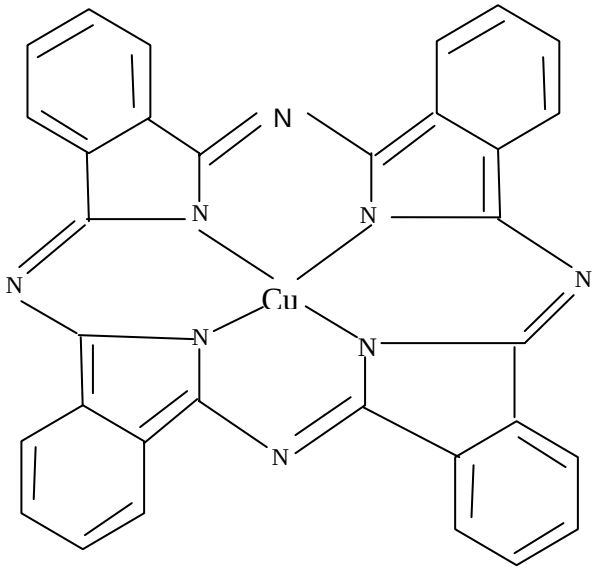
DIRECT BLUE MW = 736



DIRECT BLUE - 86 MW = 780

DIRECT BLUE-199:

1. SULPHONATION:

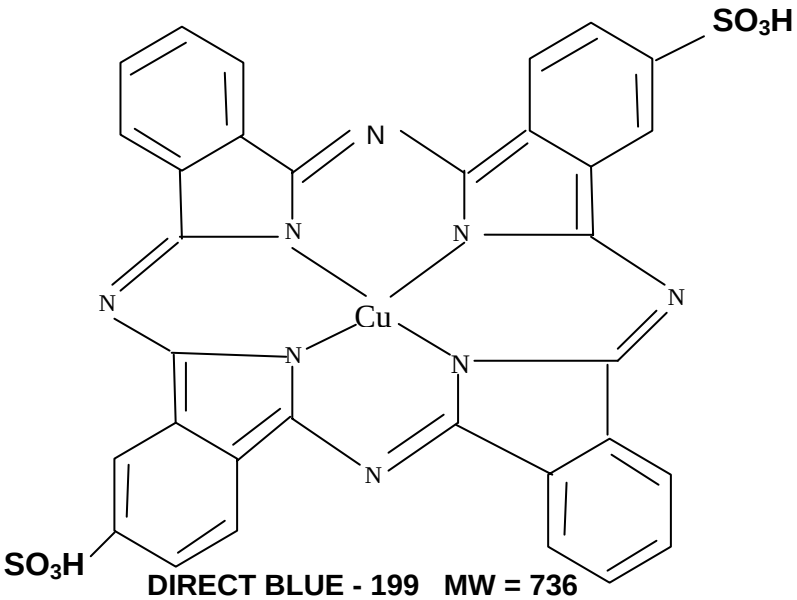


COPPER PHTHALOCYANINE: MW = 576

PCl3

\+ **$2ClSO_3H$**

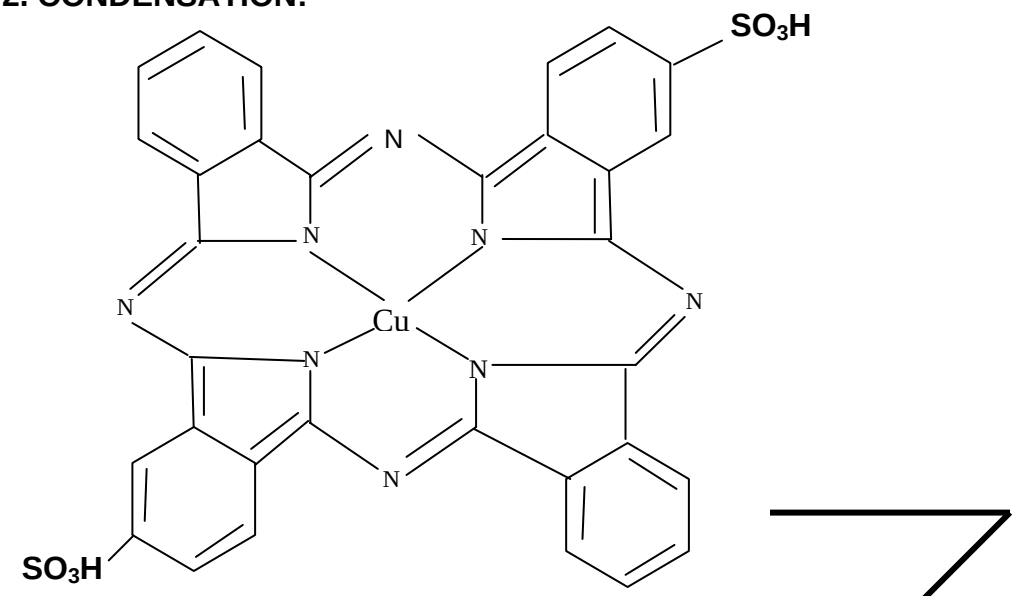
CSA
MW = 116.5



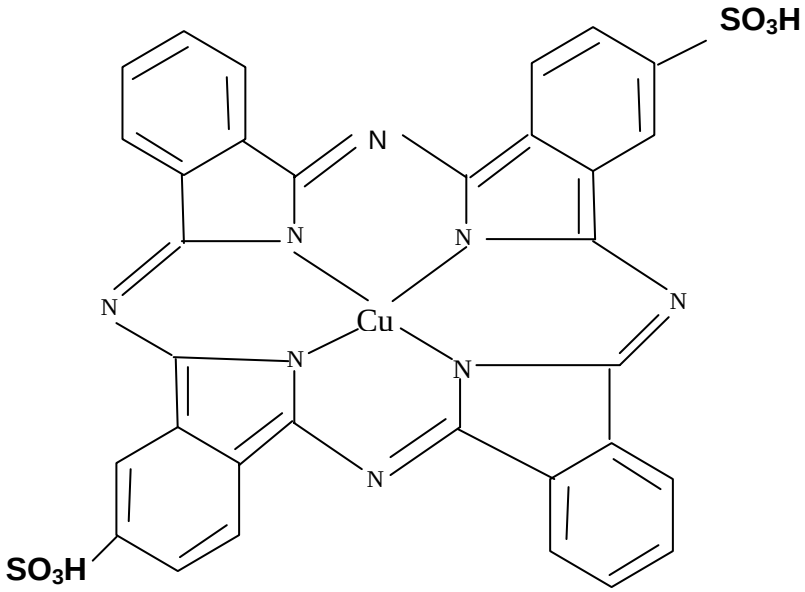
\+ **$2HCl$**

DIRECT BLUE - 199 MW = 736

2. CONDENSATION:



DIRECT BLUE-199 MW = 736

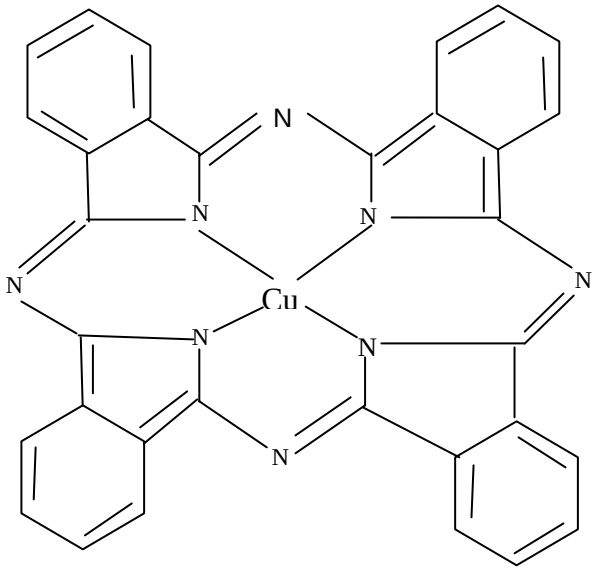


DIRECT BLUE - 199 MW = 736

CHEMICAL REACTIONS:

REACTIVE BLUE-G:

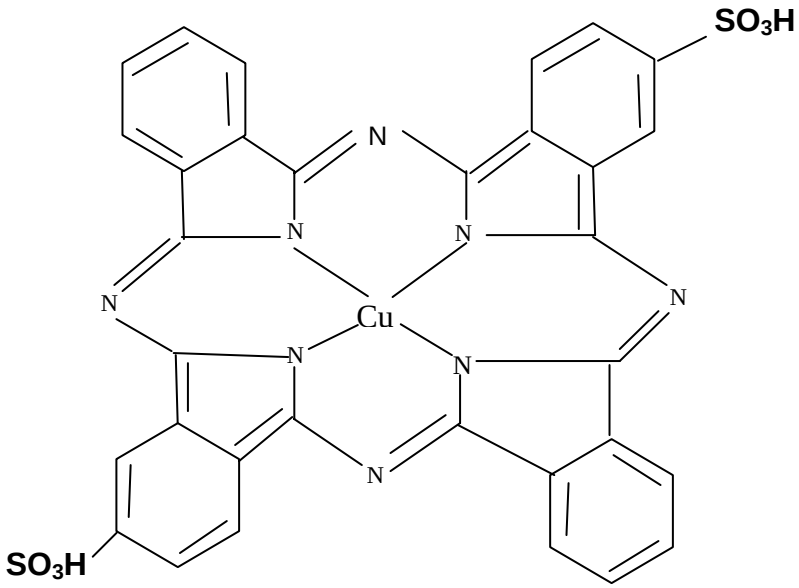
1. SULPHONATION:



COPPER PHTHALOCYANINE: MW = 576

\+ **$2CLSO_3H$**

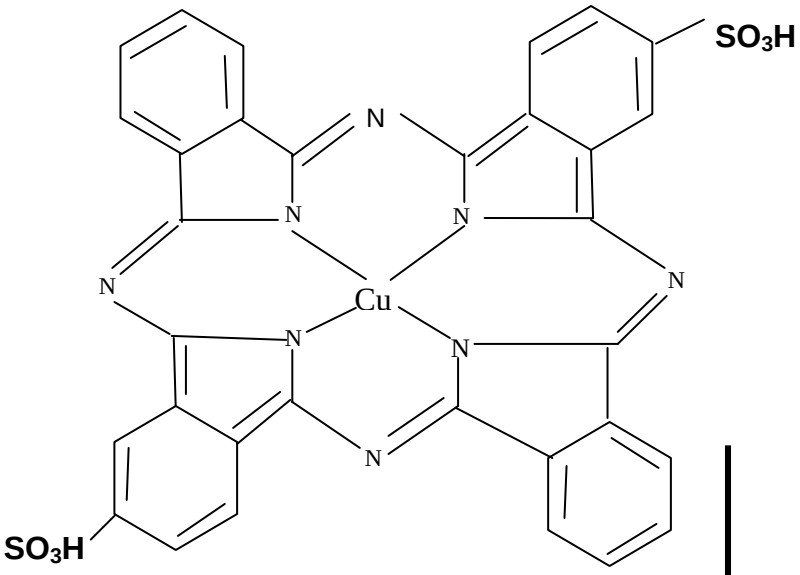
CSA
MW = 116.5



\+ **2HCl**

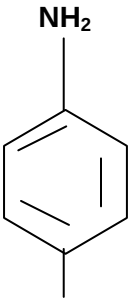
DIRECT BLUE MW = 736

2. CONDENSATION:



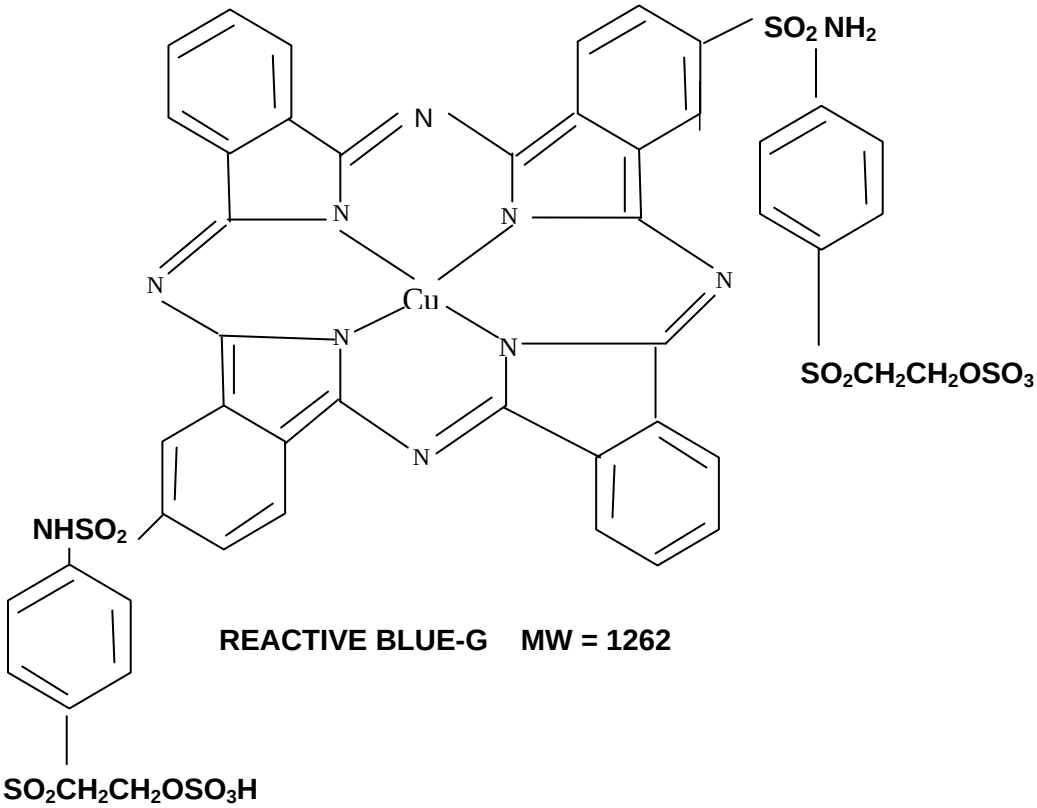
DIRECT BLUE MW = 736

+



$SO_2CH_2CH_2OSO_3H$

VINYL SULPHONE MW = 281

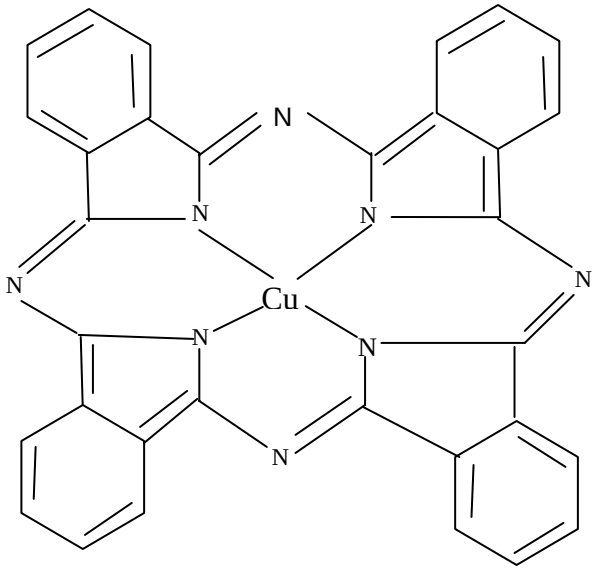


+ H2O

REACTIVE BLUE-G MW = 1262

REACTIVE BLUE H5G:

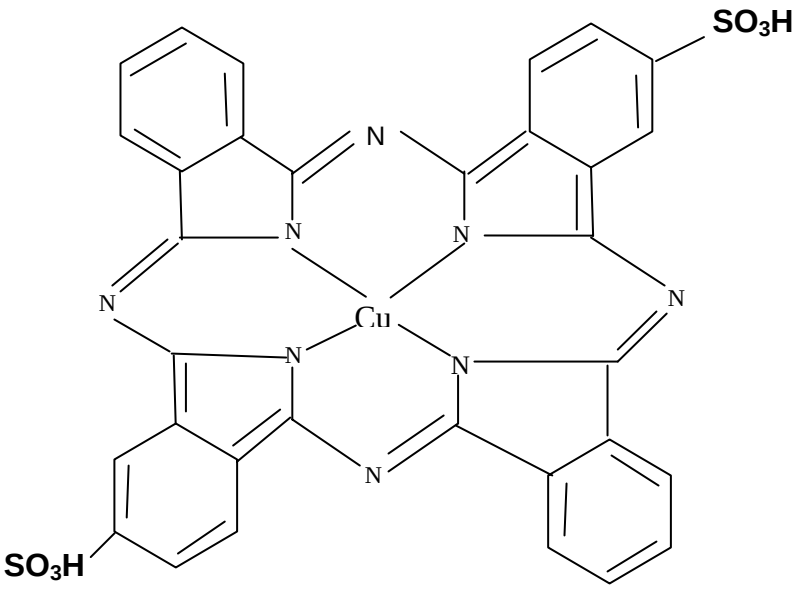
1. SULPHONATION:



+ **$2CLSO_3H$**

CSA
MW = 116.5

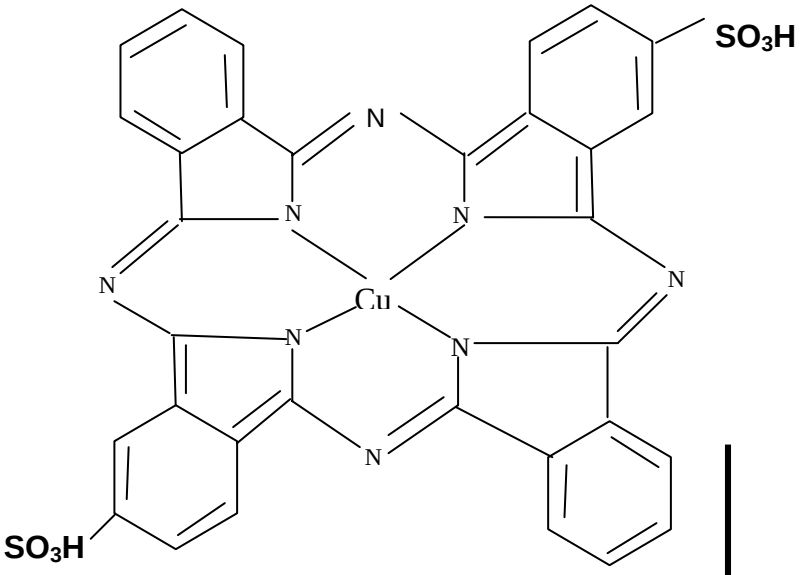
COPPER PHTHALOCYANINE: MW = 576



+ **2HCL**

DIRECT BLUE MW = 736

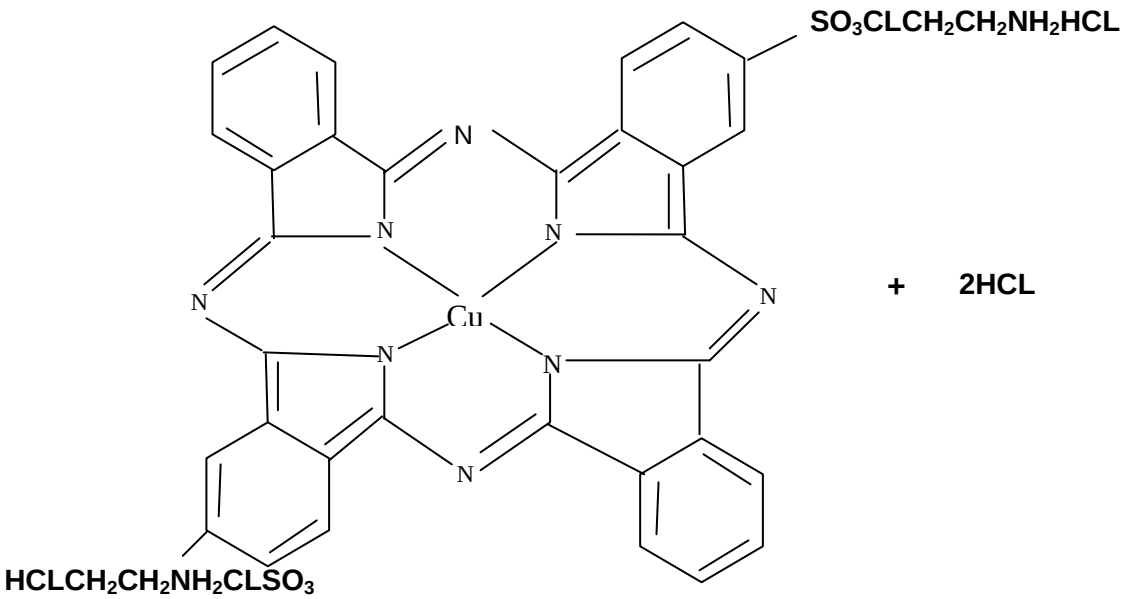
2. CONDENSATION:



+ **2 $CLCH_2CH_2NH_2HCL$**

B-CHLORO MW = 116.5

DIRECT BLUE MW = 736



+ **2HCL**

REACTIVE BLUEH5G MW = 895

For, Associated Chemicals Pvt. Ltd.

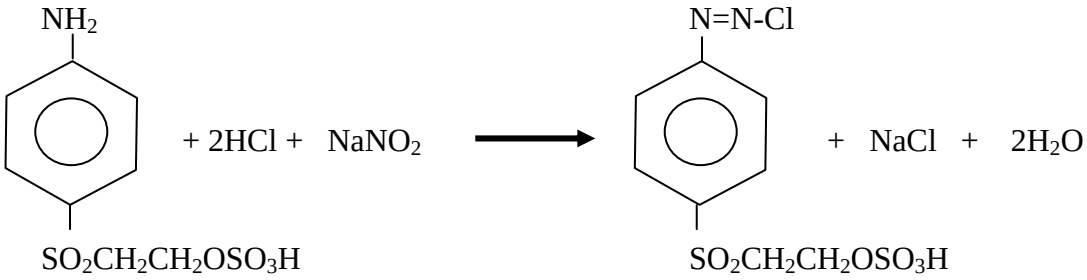
Director

Enclosure: 10

Mass Balance of each Product

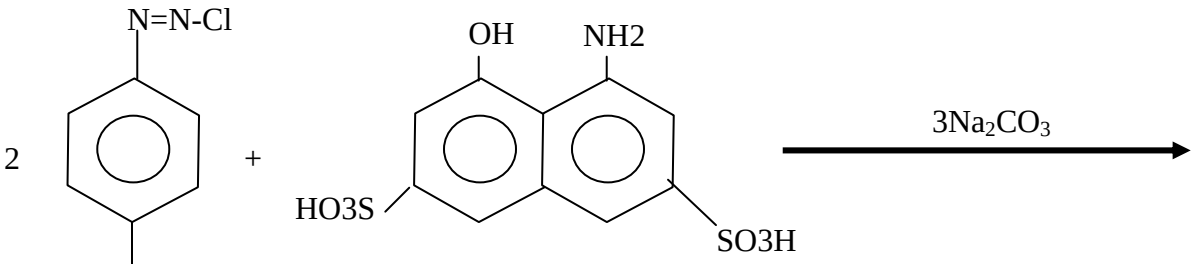
1. CHEMICAL REACTION FOR REACTIVE BLACK B:-

(1) VINYL SULPHONE DIAZOTIZATION:-

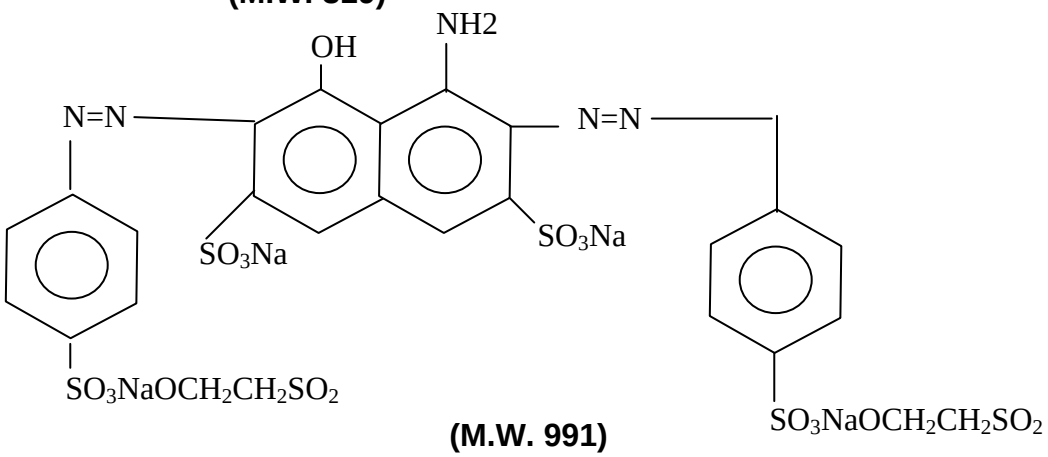


(M.W. 281) **(M.W. 328.5)**

(2) COUPLING I WITH H.ACID:-



(M.W. 657) **(M.W. 319)**



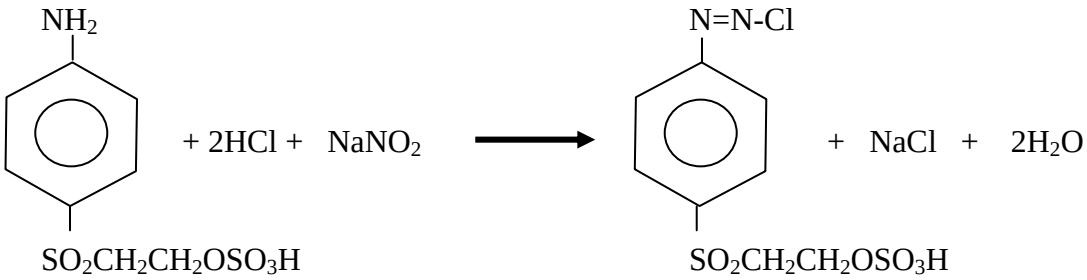
(M.W. 991)

+ 2NaCl + 3CO_2 + 3H_2O

DYE STRUCTURE OF REACTIVE BLACK 5

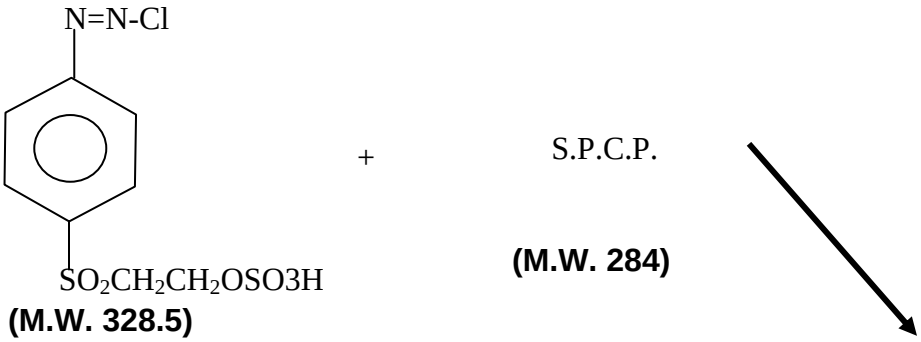
2. CHEMICAL REACTION FOR REACTIVE YELLOW FG:-

(1) VINYL SULPHONE DIAZOTIZATION:-



(M.W. 281) **(M.W. 328.5)**

(2) COUPLING I WITH SPCP:-



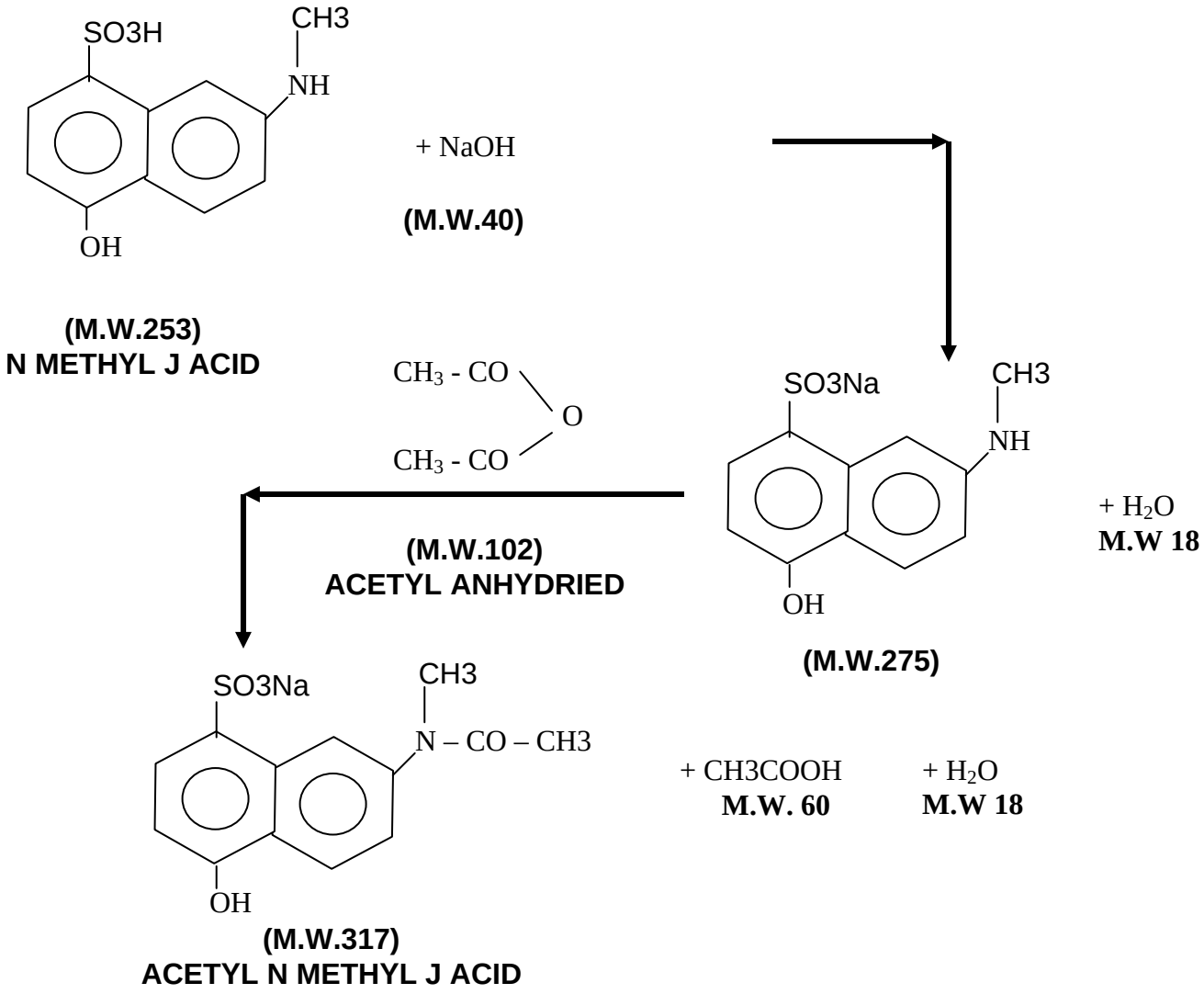
(M.W. 328.5) **(M.W. 284)**

Reactive Yellow FG + HCl.

(M.W. 576) **(M.W. 36.5)**

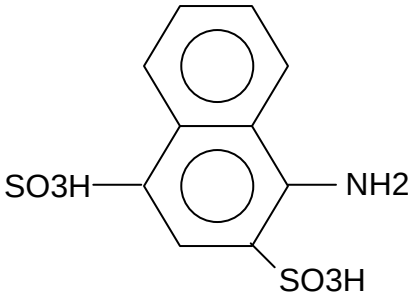
11. CHEMICAL REACTION FOR REACTIVE ORANGE M_2R:-

(1. Acetylation of NMJ)



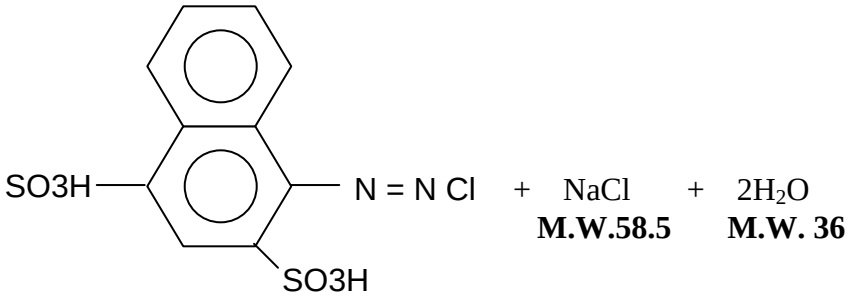
CONTINUE CHEMICAL REACTION FOR REACTIVE ORANGE M_2R: PAGE 2

(2. Di Azotization of STA)



(M.W.303)

+ 2HCl **M.W.73** + NaNO2 **M.W. 69**

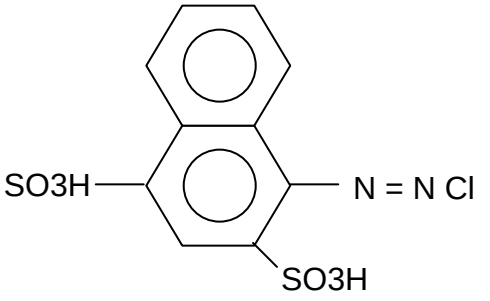


+ NaCl **M.W.58.5** + $2H_2O$ **M.W. 36**

Diazo of STA M.W.350.5

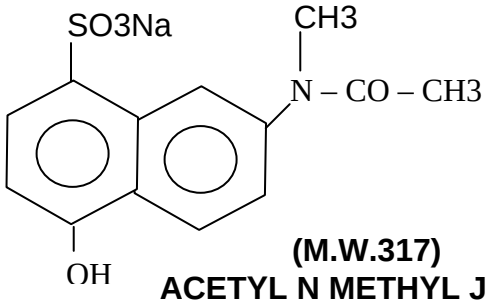
CONTINUE CHEMICAL REACTION FOR REACTIVE ORANGE M2R: PAGE 3

(3. Coupling Acetyl – N –Methyl J Acid with STA Diazo)



Diazo of STA M.W.350.5

\+

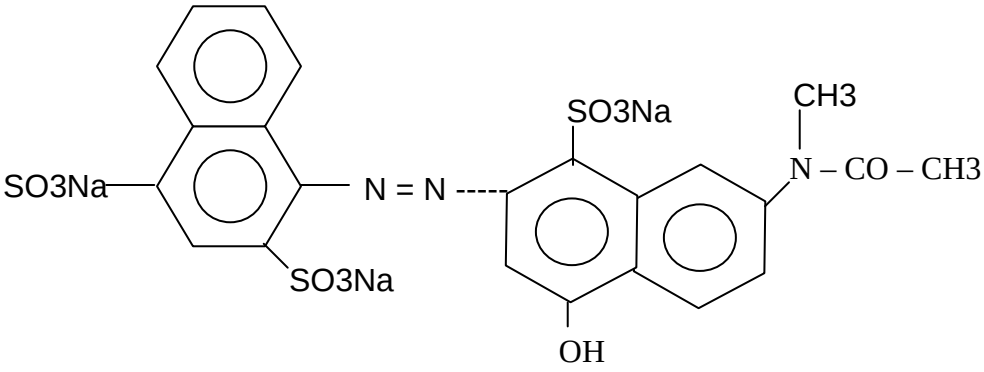


(M.W.317)
ACETYL N METHYL J ACID

\+ NaCl + $2H_2O$
M.W.58.5 **M.W. 36**

2NaHCO3
M.W. 168

\+ CH_3COOH + H_2O
M.W. 60 **M.W 18**



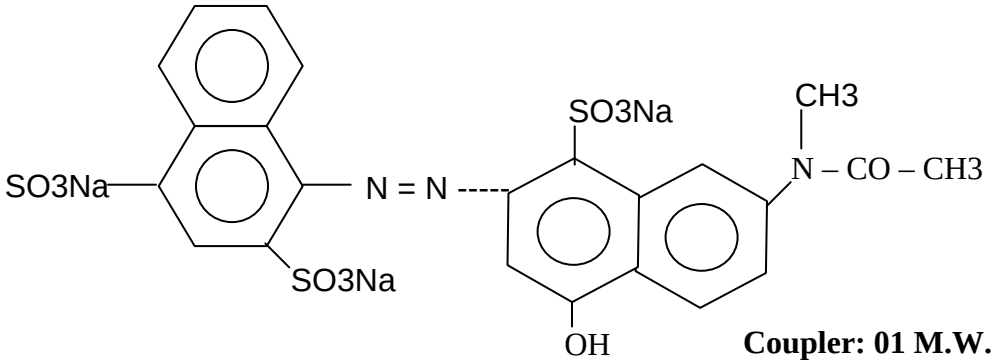
Coupler: 01 M.W. 675

\+ NaCl + $2H_2O$ + CH_3COOH + H_2O + $2CO_2$ + $2H_2O$ + HCl

M.W.58.5 **M.W. 36** **M.W. 60** **M.W 18** **M.W.88** **M.W. 36** **M.W. 36.5**

CONTINUE CHEMICAL REACTION FOR REACTIVE ORANGE M2R: PAGE 4

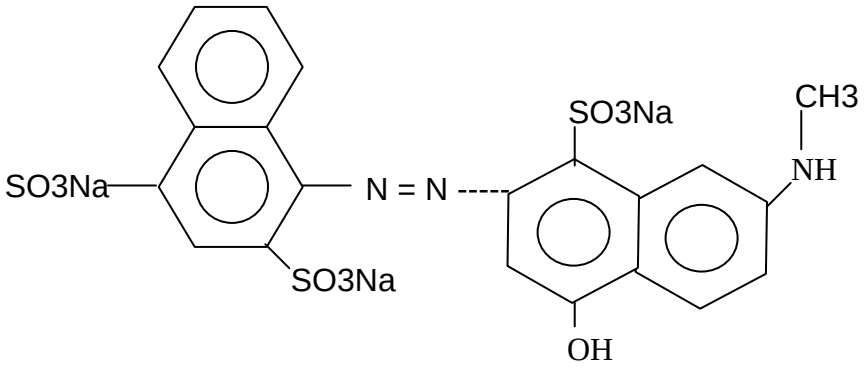
(4. Hydrolysis)



Coupler: 01 M.W. 675

+ NaCl **M.W.58.5** + $2H_2O$ **M.W. 36** + CH3COOH **M.W. 60** + H_2O **M.W 18** + $2CO_2$ **M.W.88** + $2H_2O$ **M.W. 36** + HCl **M.W. 36.5**

NaOH
M.W. 40



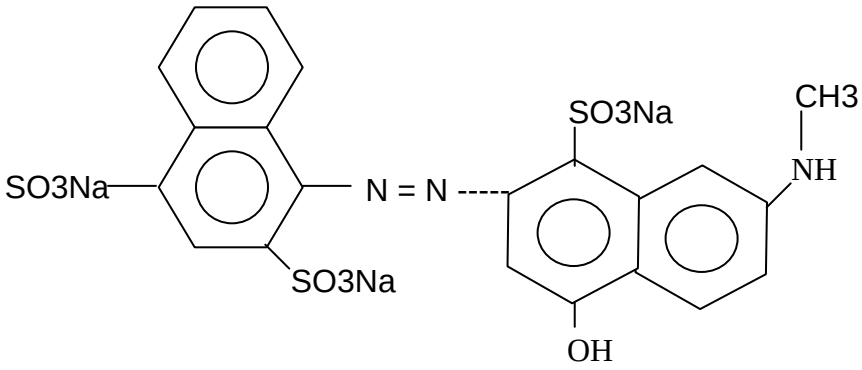
(M.W.633)
BASE OF ORANGE H2R

+ CH3COONa **(M.W.82)** (In **Filtrate)** + + NaCl **M.W. 58.5** **(With Product)**

$2H_2O$ **M.W. 36** (In **Filtrate)** + CH3COOH **M.W. 60** (In **Filtrate)** + H_2O **M.W 18** (In **Filtrate)** + $2CO_2$ **M.W.88 (In Air)** + $2H_2O$ **M.W. 36** (In **Filtrate)** + HCl **M.W. 36.5** **(In Filtrate)**

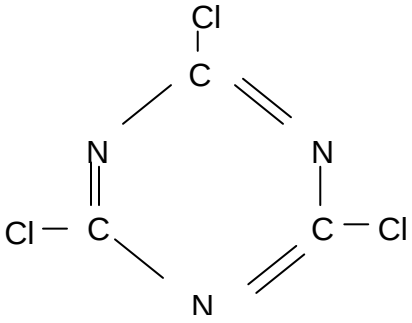
CONTINUE CHEMICAL REACTION FOR REACTIVE ORANGE M2R: PAGE 5

(5. Cynuration of Base)

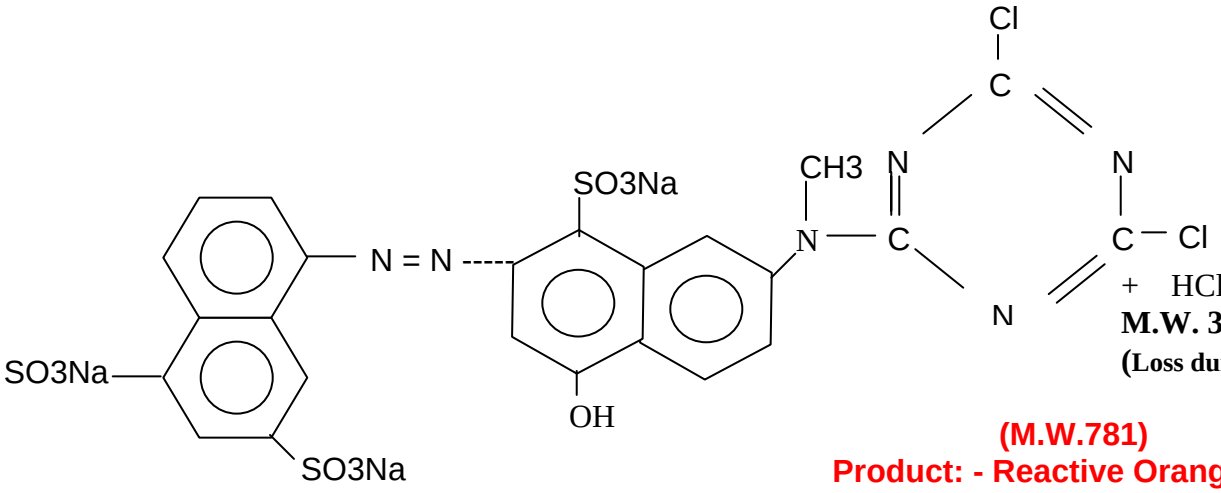


+ NaCl
M.W. 58.5
(With Product)

(M.W.633)
BASE OF ORANGE M_2R



(M.W.184.5)
CYNURIC CHLORIDE



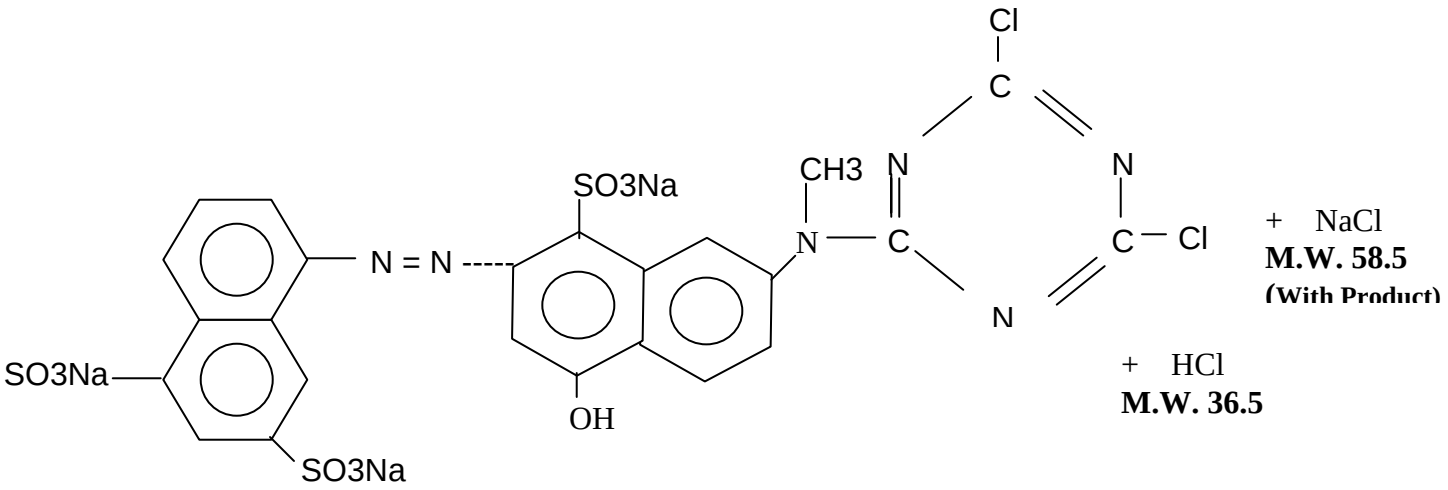
+ NaCl
M.W. 58.5
(With Product)

+ HCl
M.W. 36.5
(Loss during spray drying)

(M.W.781)
Product: - Reactive Orange M_2R

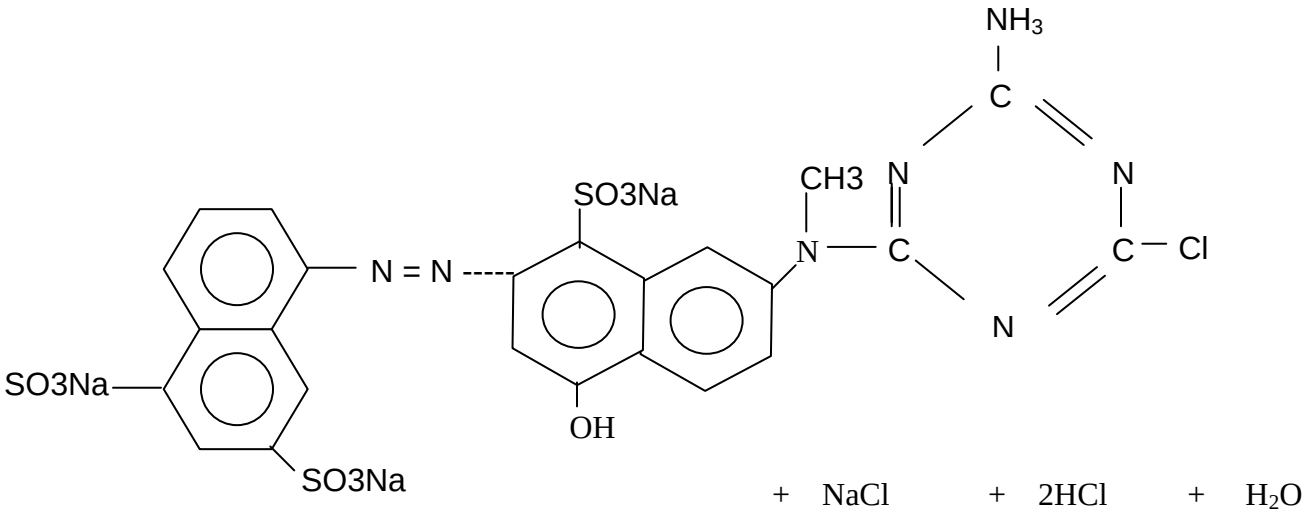
CONTINUE CHEMICAL REACTION FOR REACTIVE ORANGE M2R: PAGE 6

(6. Isolation)



(M.W.781)
Product: - Reactive Orange M_2R

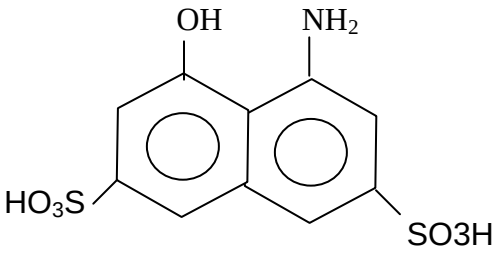
NH_4OH
M.W. 35



(M.W.762.5)
Product: - Reactive Orange M2R

10. CHEMICAL REACTION FOR REACTIVE RED M8B (Red – 11):-

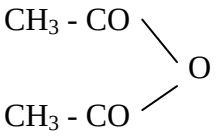
(A) Acetylation of H Acid



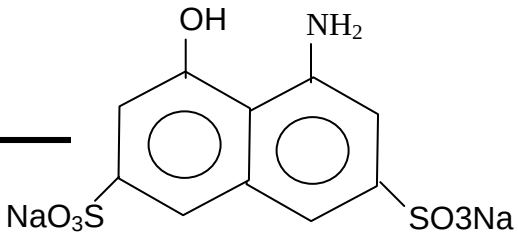
+ 2NaOH

(M.W.80)

(M.W.319)
H ACID

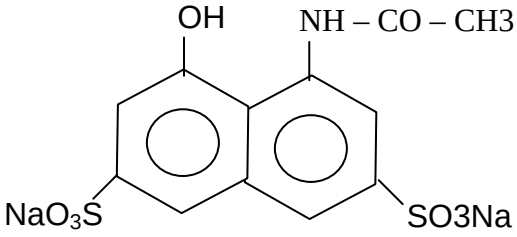


(M.W.102)
ACETYL ANHYDRIED



+ $2H_2O$
M.W 36

(M.W.363)

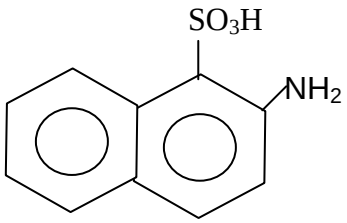


+ CH3COOH
M.W. 60

+ $2H_2O$
M.W 36

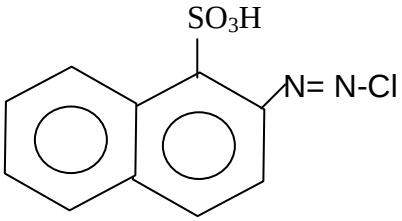
(M.W.405)
ACETYL H - ACID

(B) Diazotization of Tobias Acid



+ 2HCl **M.W.73** + NaNO2 **M.W. 69**

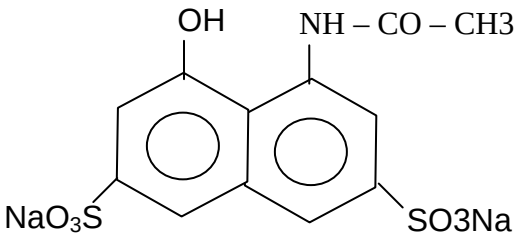
(M.W.223)
TOBIAS ACID



+ NaCl **M.W.58.5** + $2H_2O$ **M.W. 36**

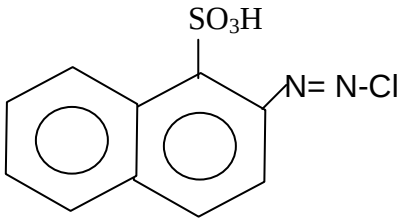
Diazo of STA M.W.270.5

(C) Coupling of Tobias Acid Diazo & Acetyl H Acid



(M.W.405)
ACETYL H - ACID

\+

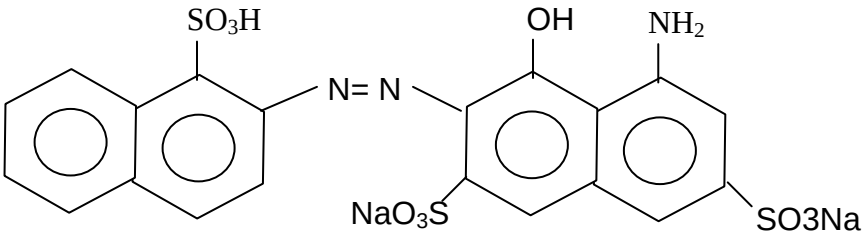


Diazo of STA M.W.270.5

+ CH3COOH **M.W. 60** + $2H_2O$ **M.W 36**

+ NaCl **M.W.58.5** + $2H_2O$ **M.W. 36**

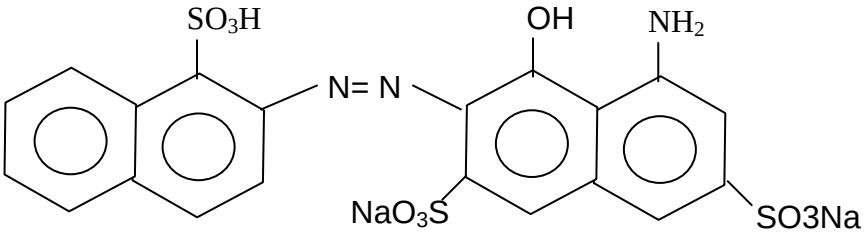
NaOH
M.W 40



(M.W.597)
COUPLER

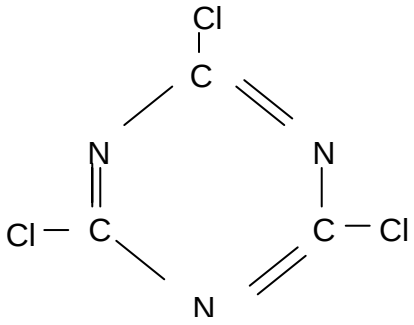
+ CH3COOH **M.W. 60** + $2H_2O$ **M.W 36** + NaCl **M.W.58.5** + $2H_2O$ **M.W. 36** + HCl **M.W. 36.5** + CH_3COONa **M.W. 82**

(D) Cynuration:-



(M.W.597)
COUPLER

+

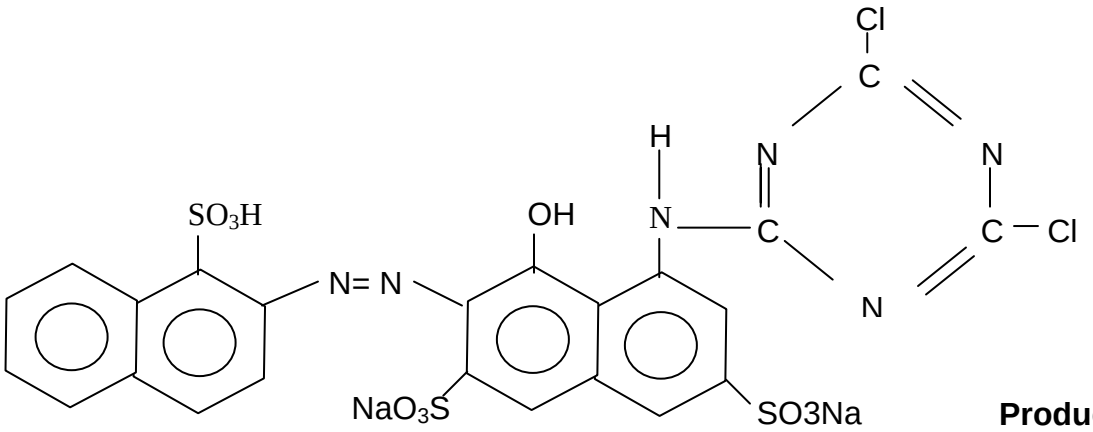


+ CH3COOH + $2H_2O$ + NaCl + $2H_2O$ + HCl **Cynuric Chloride**

M.W. 60 **M.W 36** **M.W.58.5** **M.W. 36** **M.W. 36.5** **M.W. 184.5**

+ CH3COONa

M.W. 82



(M.W.745)
Product: - Reactive Red M8B

+ CH3COOH + $2H_2O$ + NaCl + $2H_2O$ + 2HCl

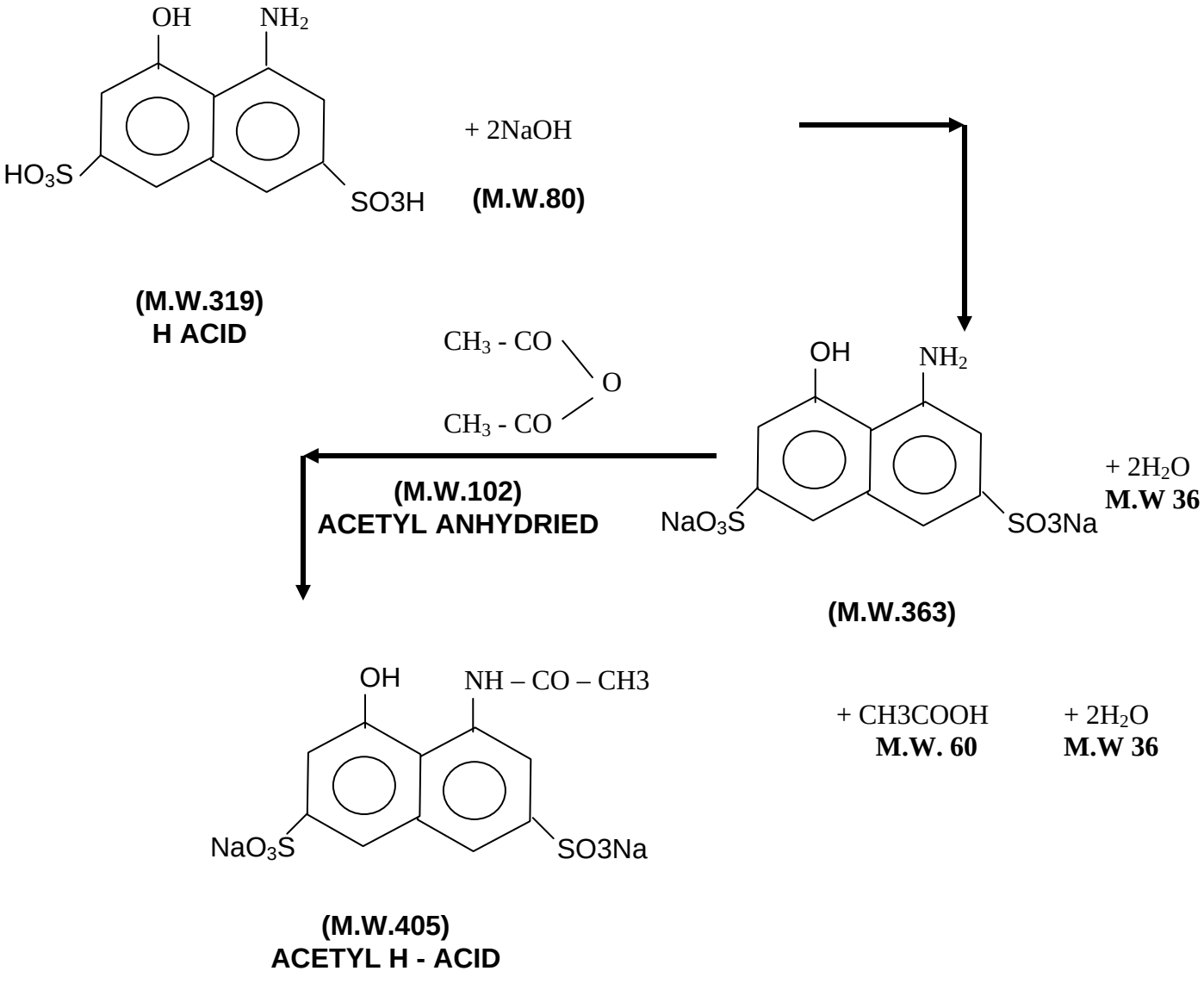
M.W. 60 **M.W 36** **M.W.58.5** **M.W. 36** **M.W. 73**

+ CH3COONa

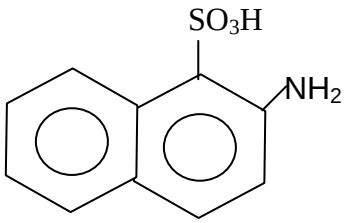
M.W. 82

7. CHEMICAL REACTION FOR REACTIVE RED ME_6BL (250):-

(A) Acetylation of H Acid

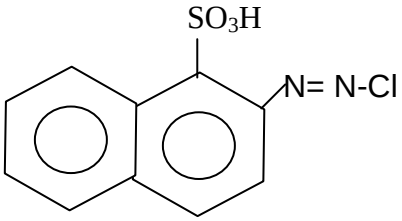


(B) Diazotization of Tobias Acid



+ 2HCl **M.W.73** + NaNO2 **M.W. 69**

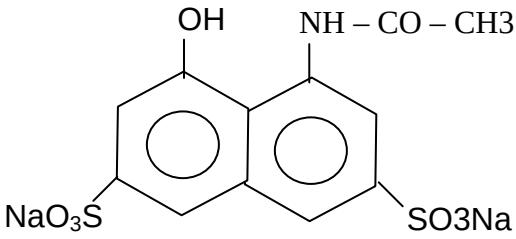
(M.W.223)
TOBIAS ACID



+ NaCl **M.W.58.5** + $2H_2O$ **M.W. 36**

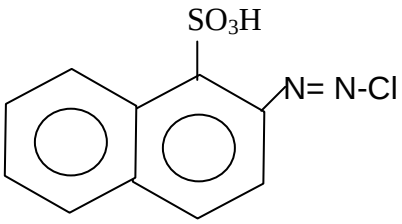
Diazo of STA M.W.270.5

(C) Coupling of Tobias Acid Diazo & Acetyl H Acid



(M.W.405)
ACETYL H - ACID

+

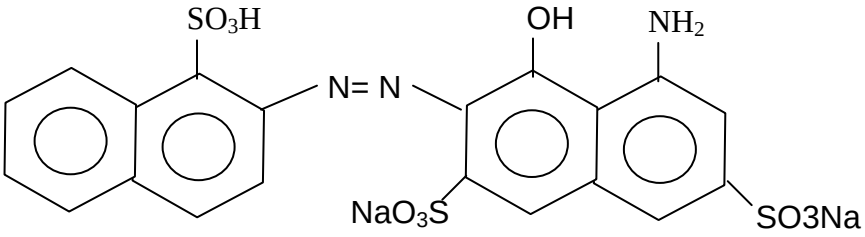


Diazo of STA M.W.270.5

+ CH3COOH **M.W. 60** + $2H_2O$ **M.W 36**

+ NaCl **M.W.58.5** + $2H_2O$ **M.W. 36**

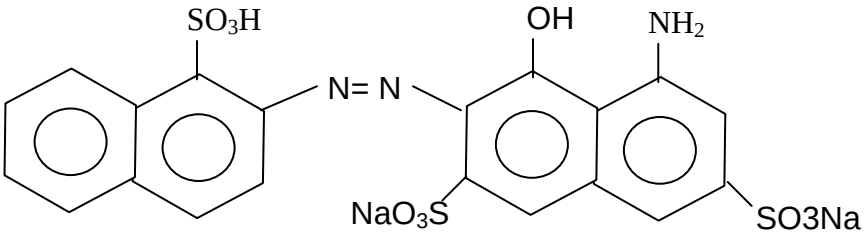
NaOH
M.W 40



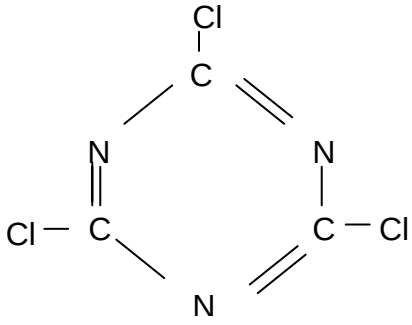
(M.W.597)
COUPLER

+ CH3COOH **M.W. 60** + $2H_2O$ **M.W 36** + NaCl **M.W.58.5** + $2H_2O$ **M.W. 36** + HCl **M.W. 36.5** + CH_3COONa **M.W. 82**

(D) Cynuration:-



(M.W.597)
COUPLER

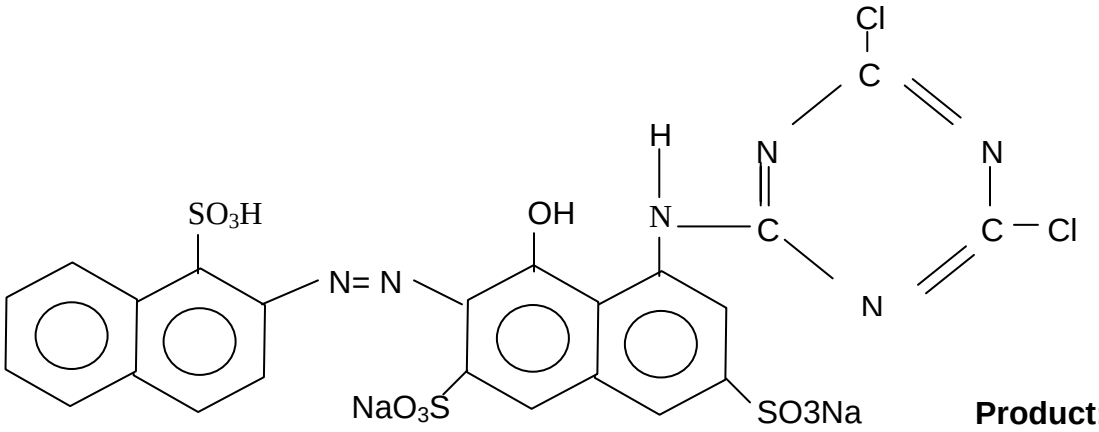


+ CH3COOH + $2H_2O$ + NaCl + $2H_2O$ + HCl

M.W. 60 **M.W 36** **M.W.58.5** **M.W. 36** **M.W. 36.5**

Cynuric Chloride
M.W. 184.5

+ CH3COONa
M.W. 82

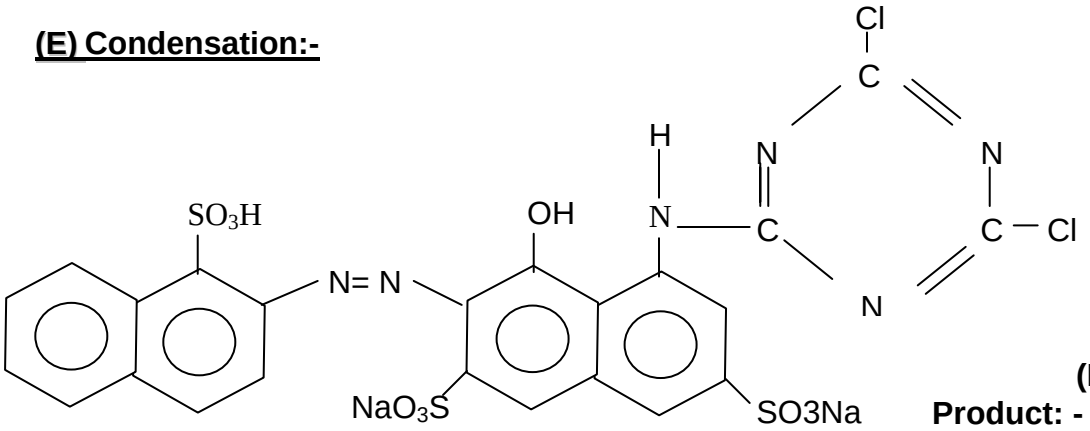


(M.W.745)
Product: - Reactive Red M8B

+ CH3COOH + 4 H_2O + NaCl + 2HCl + CH3COONa

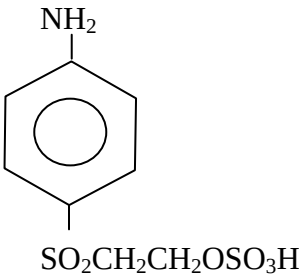
M.W. 60 **M.W 36** **M.W.58.5** **M.W. 73** **M.W. 82**

(E) Condensation:-



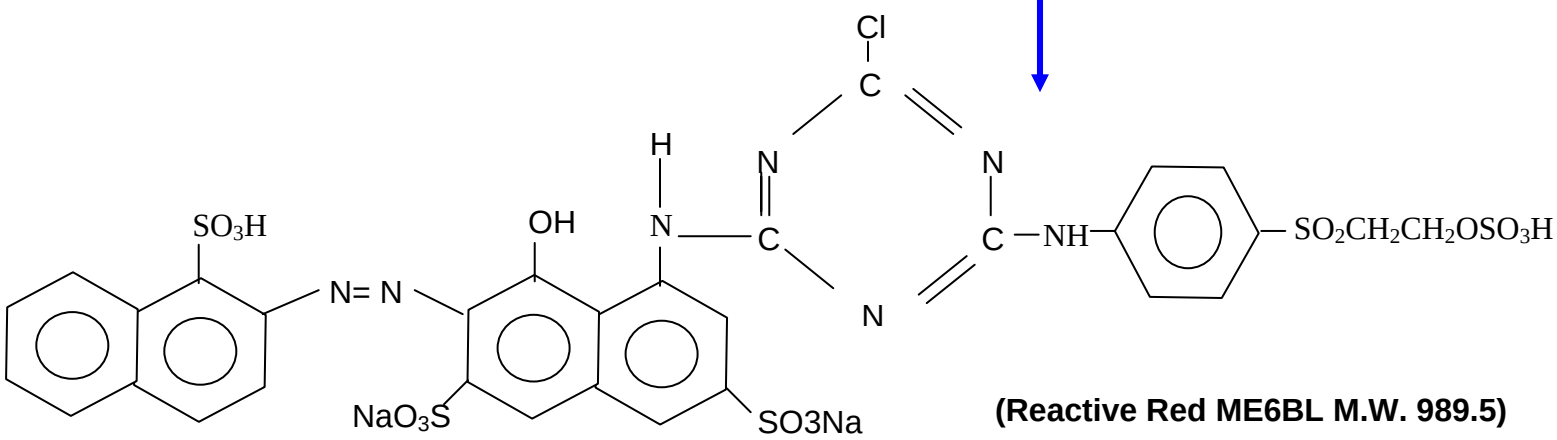
(M.W.745)
Product: - Reactive Red M8B

+ CH3COOH **M.W. 60** + 4 H_2O **M.W 36** + CH3COONa **M.W. 82** +



+ NaCl **M.W.58.5** + 2HCl **M.W. 73**

(Vinyl Sulphone M.W. 281)



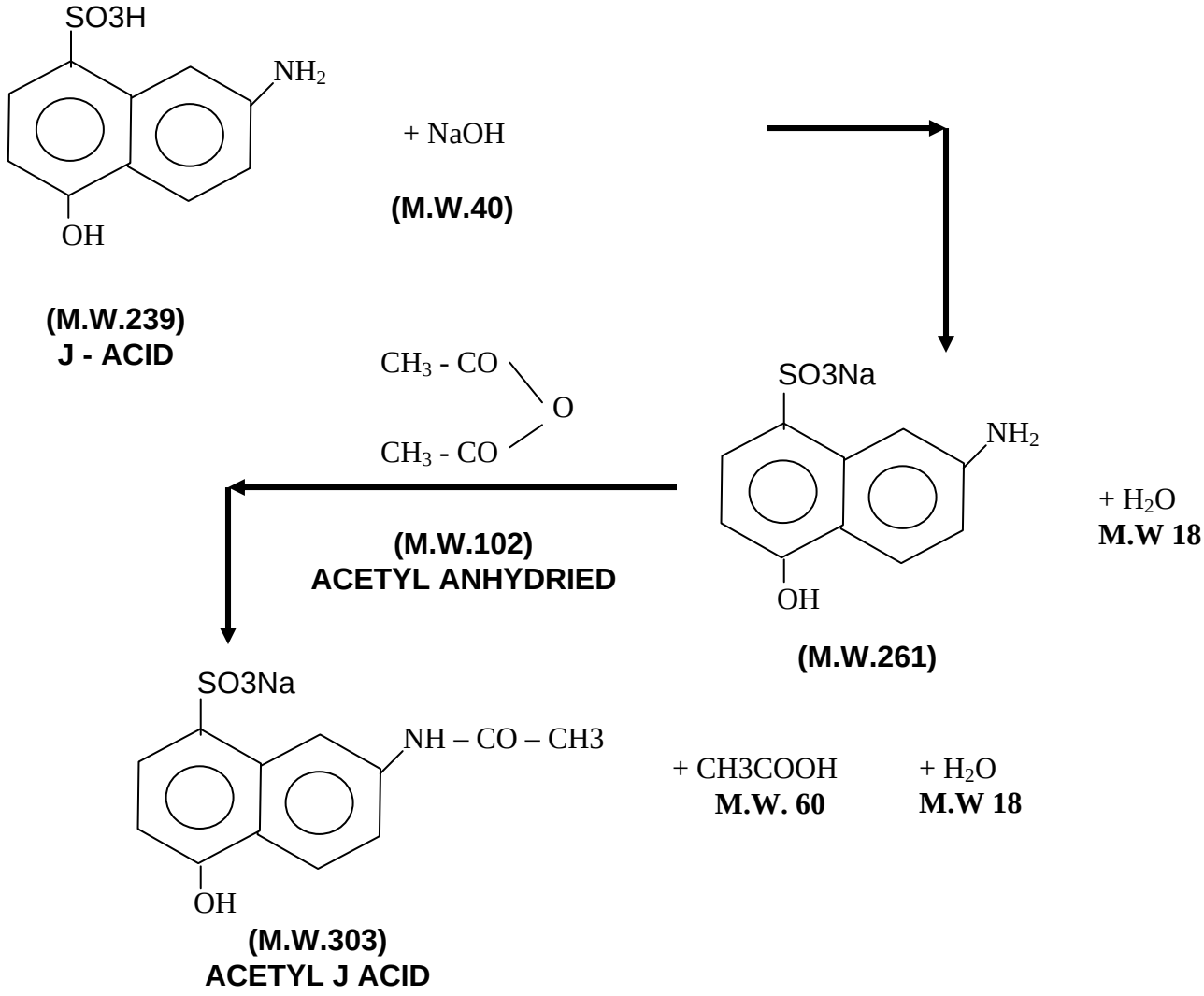
(Reactive Red ME6BL M.W. 989.5)

+ CH3COOH **M.W. 60** + 4 H_2O **M.W 36** + CH3COONa **M.W. 82** +

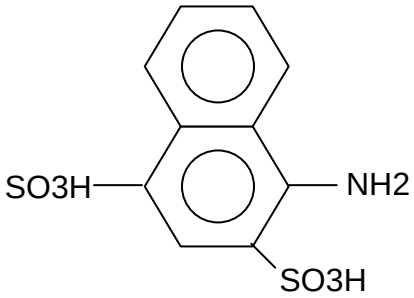
+ NaCl **M.W.58.5** + 2HCl **M.W. 73** + HCl **M.W. 36.5**

6. CHEMICAL REACTION FOR REACTIVE ORANGE ME2RL (Orange - 122):-

(A) Acetylation of J Acid:-

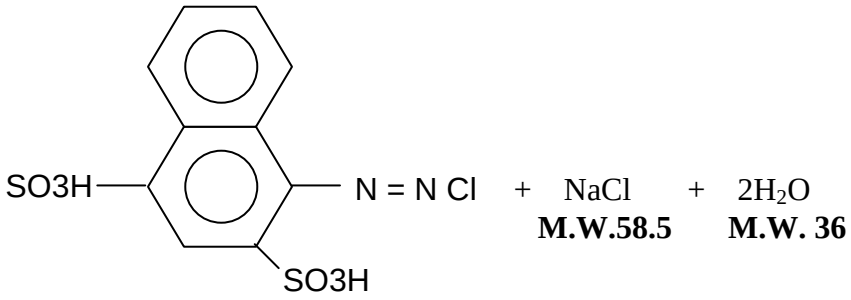


(B) STA Diazo:-



(M.W.303)

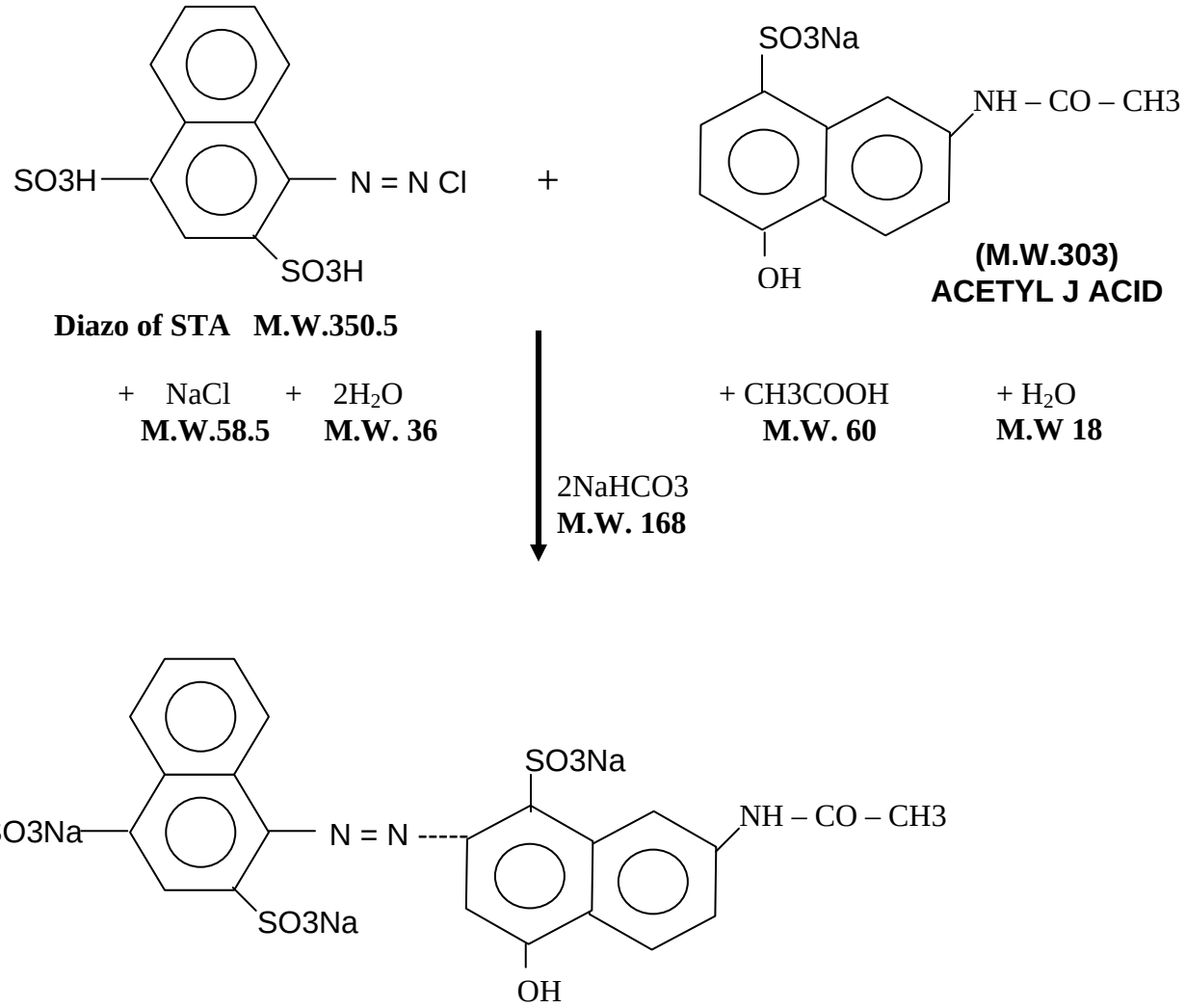
+ 2HCl **M.W.73** + $NaNO_2$ **M.W. 69**



+ NaCl **M.W.58.5** + $2H_2O$ **M.W. 36**

Diazo of STA M.W.350.5

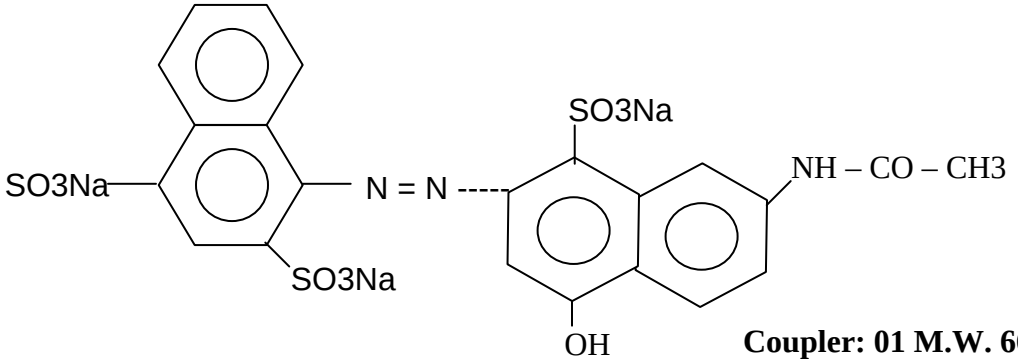
(C) Coupling of Acetyl J acid with STA Diazo:-



Coupler: 01 M.W. 661

+ NaCl	+ $2H_2O$	+ CH3COOH	+ H_2O	+ $2CO_2$	+ $2H_2O$	+ HCl	
M.W.58.5	**M.W. 36**	**M.W. 60**	**M.W 18**	**M.W.88**	**M.W. 36**	**M.W. 36.5**	

(D) Hydrolysis

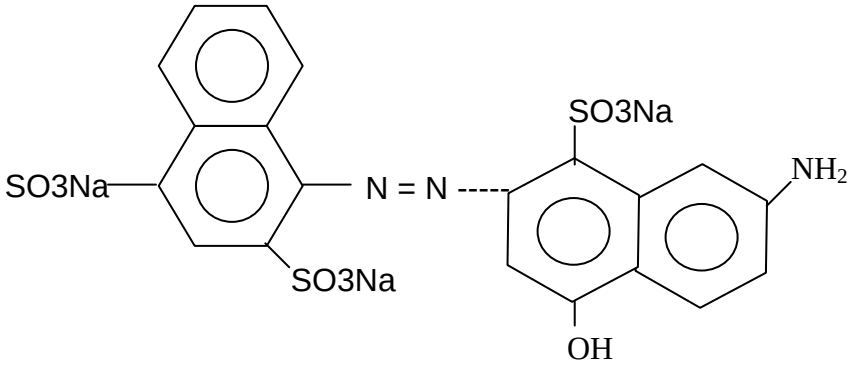


Coupler: 01 M.W. 661

+ NaCl + $2H_2O$ + CH3COOH + H_2O + $2CO_2$ + $2H_2O$ + HCl

M.W.58.5 **M.W. 36** **M.W. 60** **M.W 18** **M.W.88** **M.W. 36** **M.W. 36.5**

NaOH
M.W. 40



+ CH3COONa + NaCl

(M.W.82) **M.W. 58.5**

(In **Filtrate)** **(With Product)**

(M.W.619)

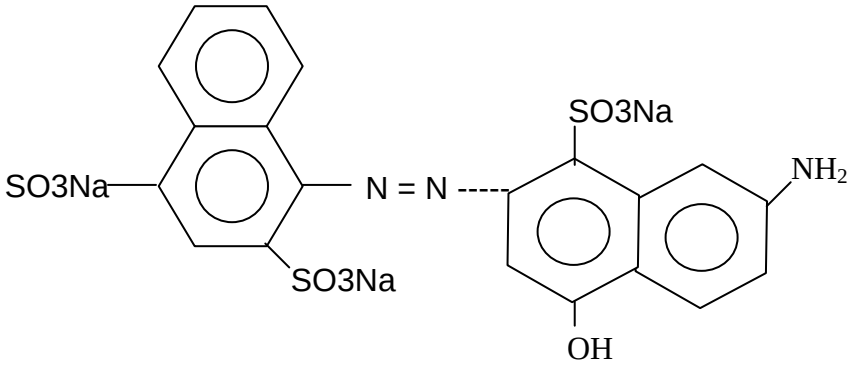
BASE OF ORANGE ME2RL

$2H_2O$ + CH3COOH + H_2O + $2CO_2$ + $2H_2O$ + HCl

M.W. 36 **M.W. 60** **M.W 18** **M.W.88** **M.W. 36** **M.W. 36.5**

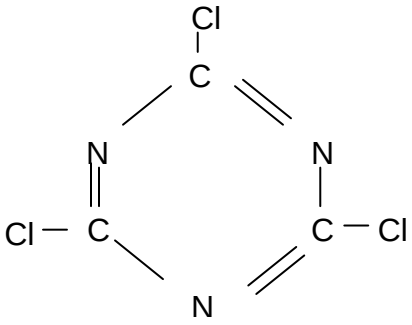
(In **Filtrate)** (In **Filtrate)** (In **Filtrate)** **(In Air)** (In **Filtrate)** **(In Filtrate)**

(E) Cynuration of Base

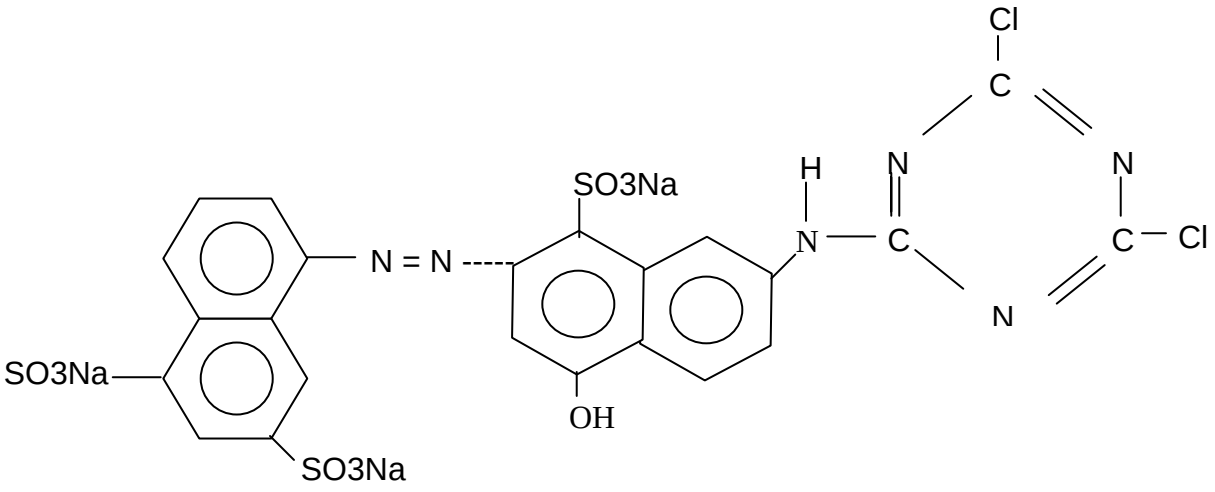


+ NaCl
M.W. 58.5
(With Product)

(M.W.619)
BASE OF ORANGE ME2RL



(M.W.184.5)
CYNURIC CHLORIDE

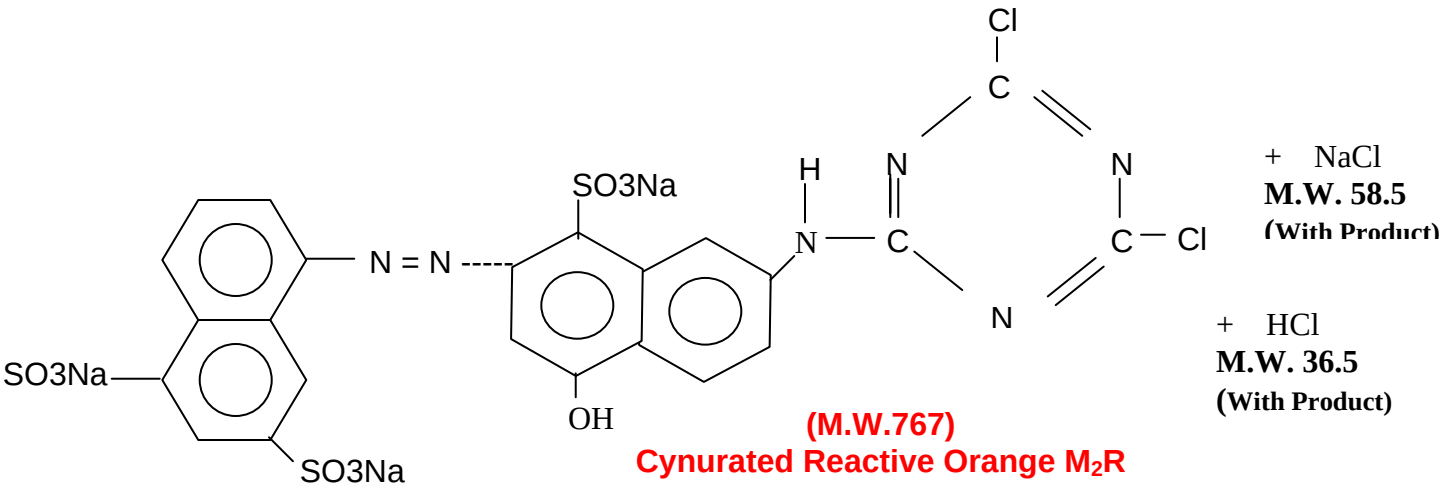


+ NaCl
M.W. 58.5
(With Product)

+ HCl
M.W. 36.5
(With Product)

(M.W.767)
Cynurated Reactive Orange ME$_2$RL

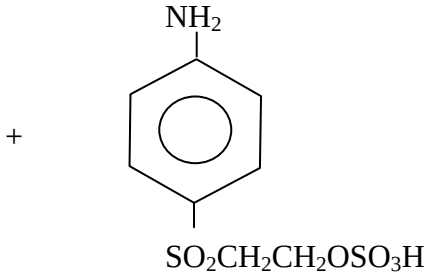
(F) Condensation with Vinyl Sulphone



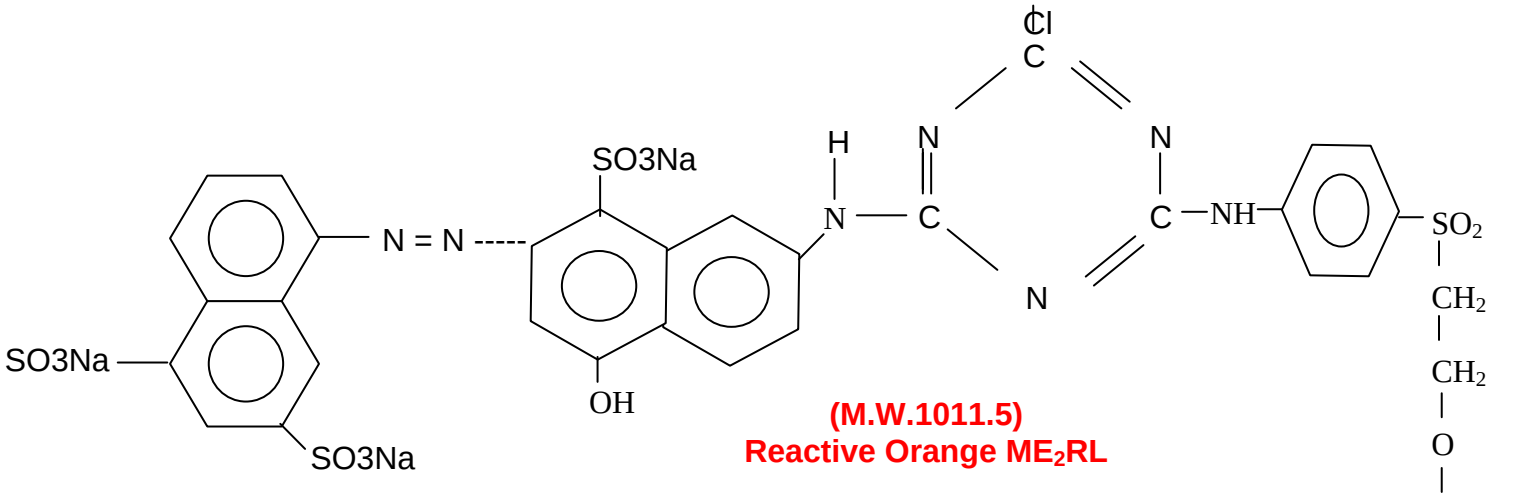
+ NaCl
M.W. 58.5
(With Product)

+ HCl
M.W. 36.5
(With Product)

(M.W.767)
Cynurated Reactive Orange M_2R



(Vinyl Sulphone M.W. 281)



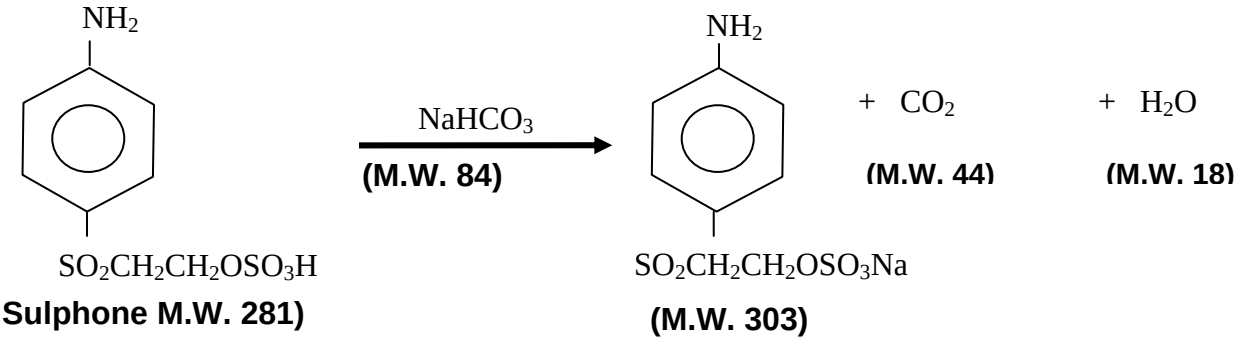
(M.W.1011.5)
Reactive Orange ME_2RL

+ NaCl
M.W. 58.5
(With Product)

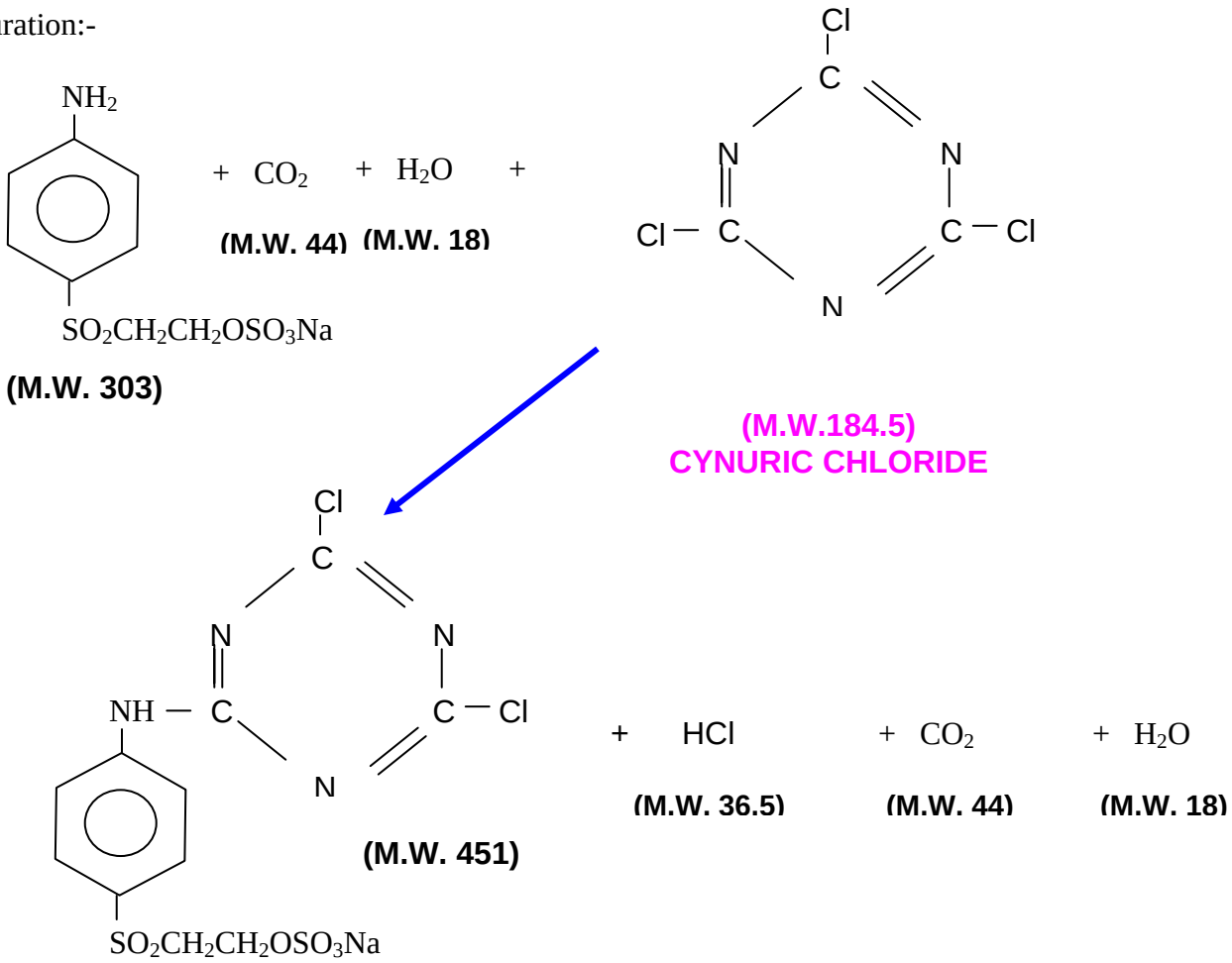
+ 2HCl
M.W. 73
Loss during spray drying

3. CHEMICAL REACTION FOR REACTIVE RED ME_4BL (Red- 195):-

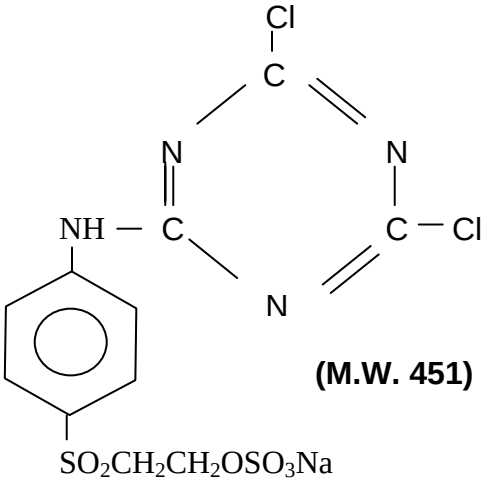
(A)



(B) Cynuration:-



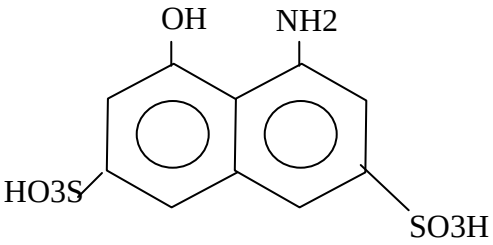
(C) COUPLING CYNURATED VS WITH H.ACID:-



(M.W. 451)

\+ HCl + CO_2 + H_2O +

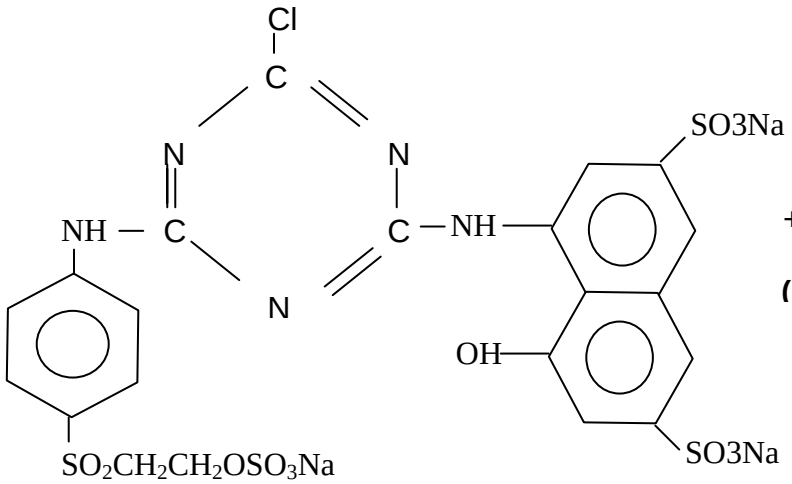
(M.W. 36.5) **(M.W. 44)** **(M.W. 18)**



Na_2CO_3

(M.W. 106)

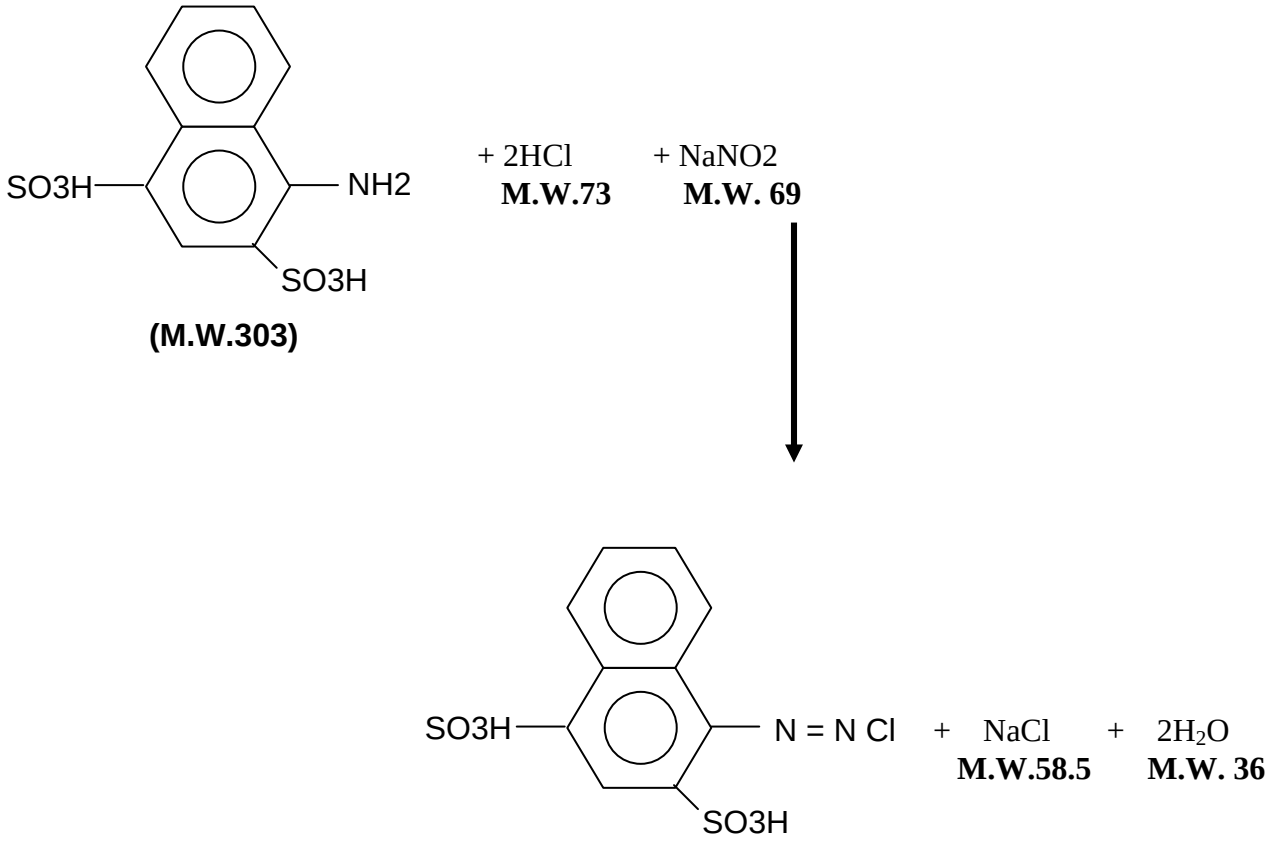
(H ACID M.W. 319)



\+ 2HCl + 2 CO_2 + $2H_2O$

(M.W. 777.5) COUPLER 1 **(M.W. 73)** **(M.W. 88)** **(M.W. 36)**

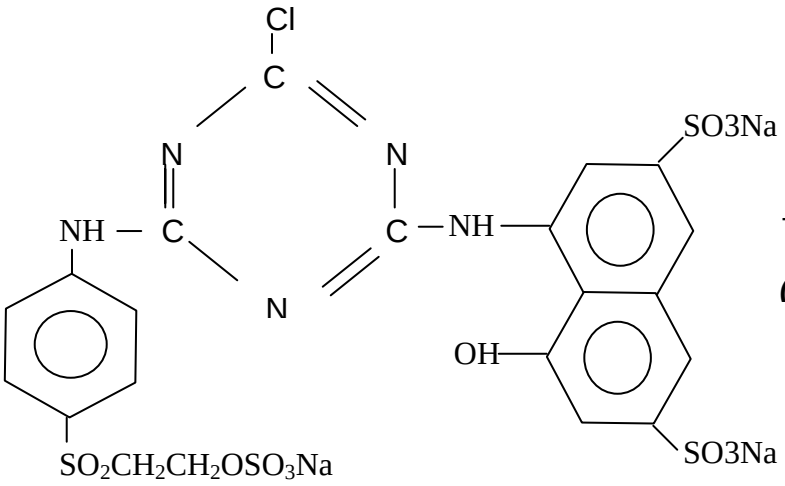
(D) PREAPARATION OF STA DIAZO:-



(M.W.303)

Diazo of STA M.W.350.5

(E) COUPLING OF COUPLER 1WITH STA DIAZO:-



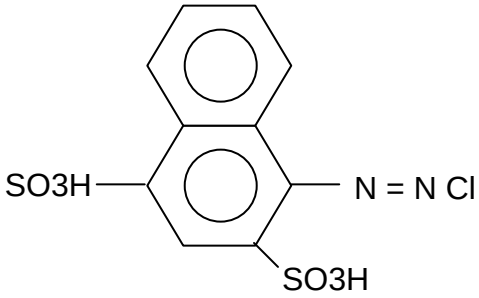
+ 2HCl + 2 CO_2 + $2H_2O$

(M.W. 777.5) COUPLER 1 **(M.W. 73)** **(M.W. 88)** **(M.W. 36)**

+

2NaHCO3

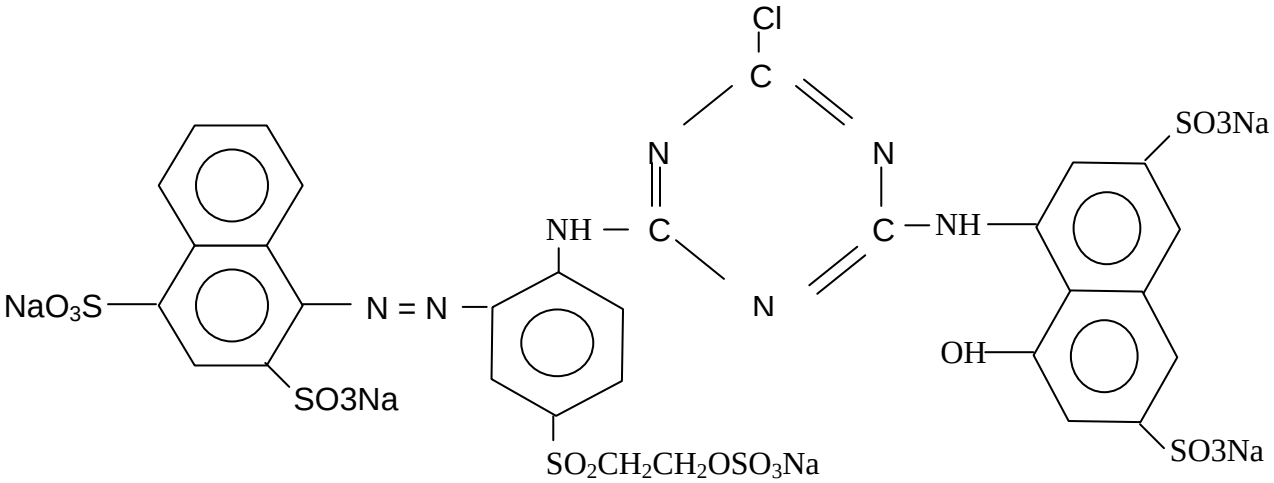
M.W. 168



+ NaCl + $2H_2O$

M.W.58.5 **M.W. 36**

Diazo of STA M.W.350.5



Reactive Red 195 M.W. 1135.5

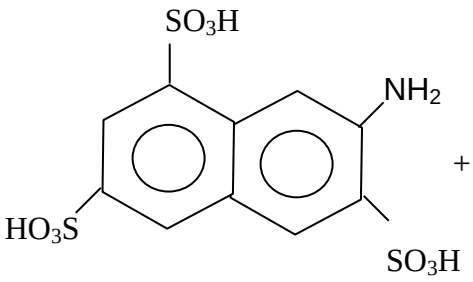
+ 3HCl + 4 CO_2 + 6 H_2O + NaCl

M.W.58.5

(M.W. 109.5) **(M.W. 176)** **(M.W. 108)**

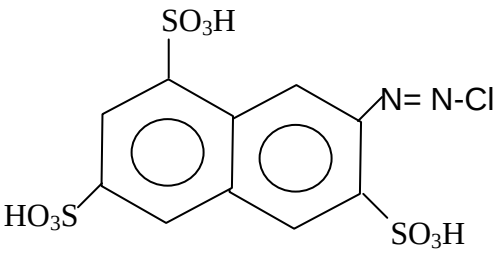
5. CHEMICAL REACTION FOR REACTIVE GOLDEN YELLOW ME4RL (YELLOW 145):-

(A) DIAZO OF K - ACID



+ 2HCl **M.W.73** + NaNO2 **M.W. 69**

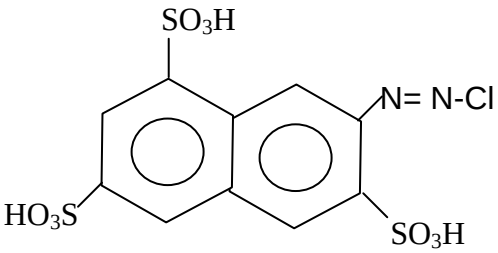
(M.W.383)
K ACID



+ NaCl **M.W.58.5** + $2H_2O$ **M.W. 36**

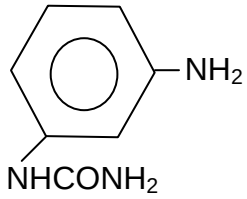
Diazo of K Acid M.W.430.5

(B) COUPLING WITH META URIDO ANILINE



Diazo of K Acid M.W.430.5

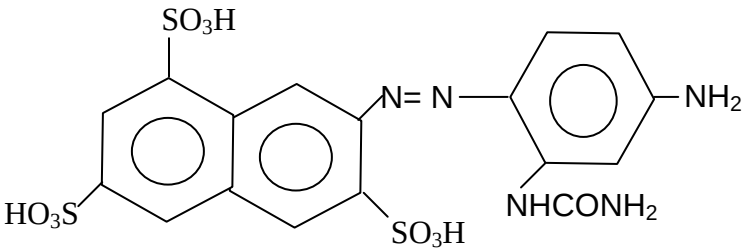
+



Meta Urido Aniline M.W.151

+ NaCl + $2H_2O$

M.W.58.5 **M.W. 36**

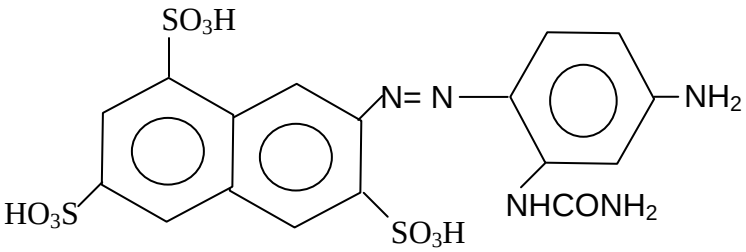


+ NaCl + $2H_2O$ + HCl

M.W.58.5 **M.W. 36** **M.W. 36.5**

Coupler 1 M.W. 545

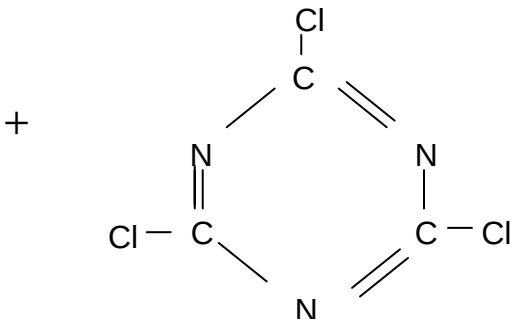
C) CYNURATION:-



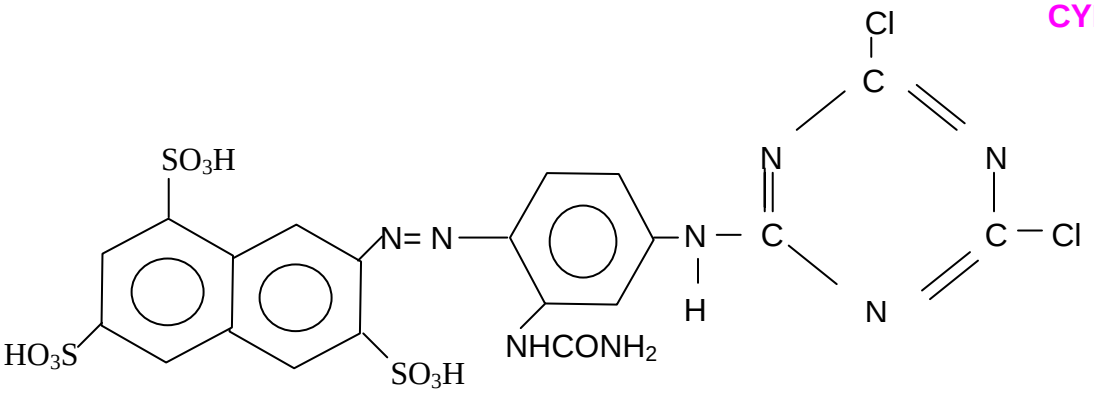
+ NaCl + $2H_2O$ + HCl

M.W.58.5 **M.W. 36** **M.W. 36.5**

Coupler 1 M.W. 545



(M.W.184.5)
CYNURIC CHLORIDE

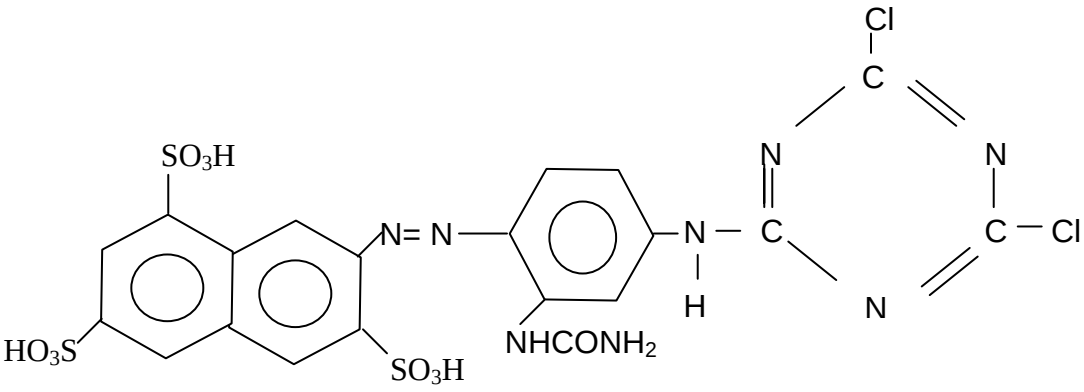


+ NaCl + $2H_2O$ + 2HCl

M.W.58.5 **M.W. 36** **M.W. 73**

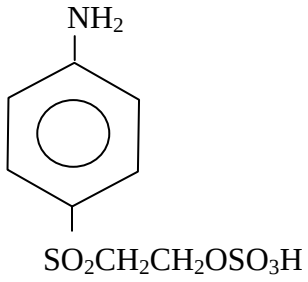
Coupler 2 M.W. 693

D) CONDENSATION WITH VINYL SULPHONE:-



Coupler 2 M.W. 693

+

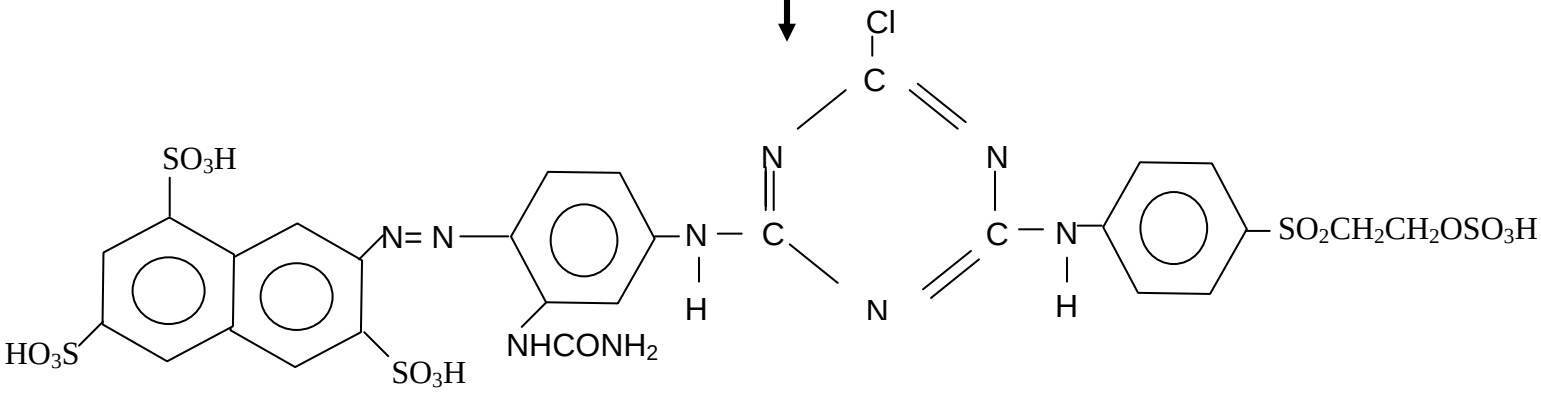


$SO_2CH_2CH_2OSO_3H$

(Vinyl Sulphone M.W. 281)

+ NaCl + $2H_2O$ + 2HCl

M.W.58.5 M.W. 36 M.W. 73



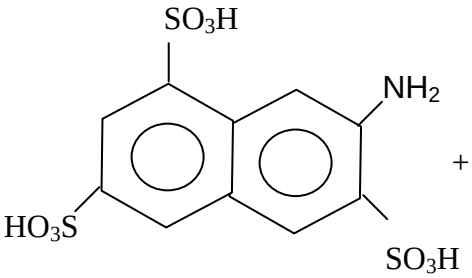
Reactive Yellow 145 (Yellow MERL) M.W. 937.5

+ NaCl + $2H_2O$ + 3HCl

M.W.58.5 M.W. 36 M.W. 109.5

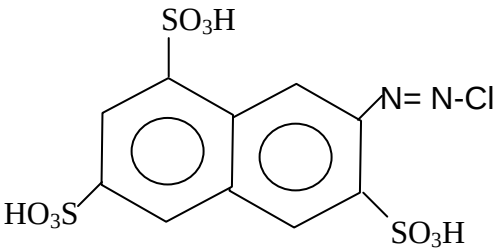
9. CHEMICAL REACTION FOR REACTIVE GOLDEN YELLOW HER -

(A) DIAZO OF K - ACID



+ 2HCl **M.W.73** + NaNO2 **M.W. 69**

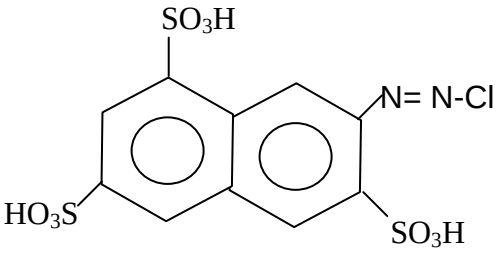
(M.W.383)
K ACID



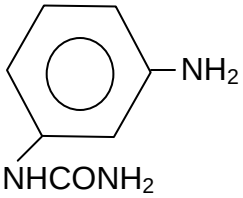
+ NaCl **M.W.58.5** + $2H_2O$ **M.W. 36**

Diazo of K Acid M.W.430.5

(B) COUPLING WITH META URIDO ANILINE



+

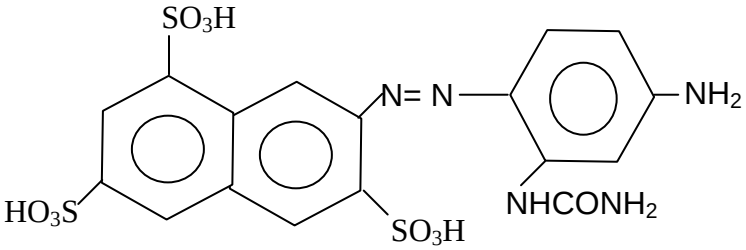


Diazo of K Acid M.W.430.5

Meta Urido Aniline M.W.151

+ NaCl + $2H_2O$

M.W.58.5 **M.W. 36**

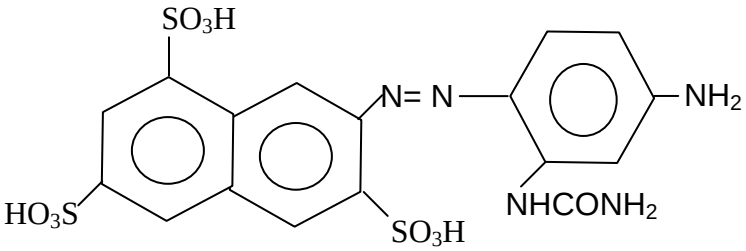


+ NaCl + $2H_2O$ + HCl

M.W.58.5 **M.W. 36** **M.W. 36.5**

Coupler 1 M.W. 545

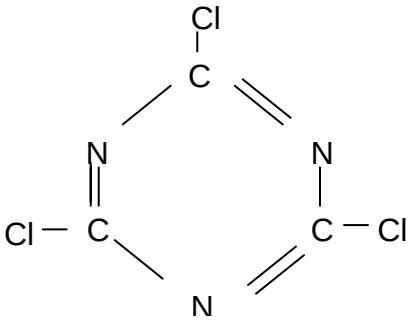
C) CYNURATION:-



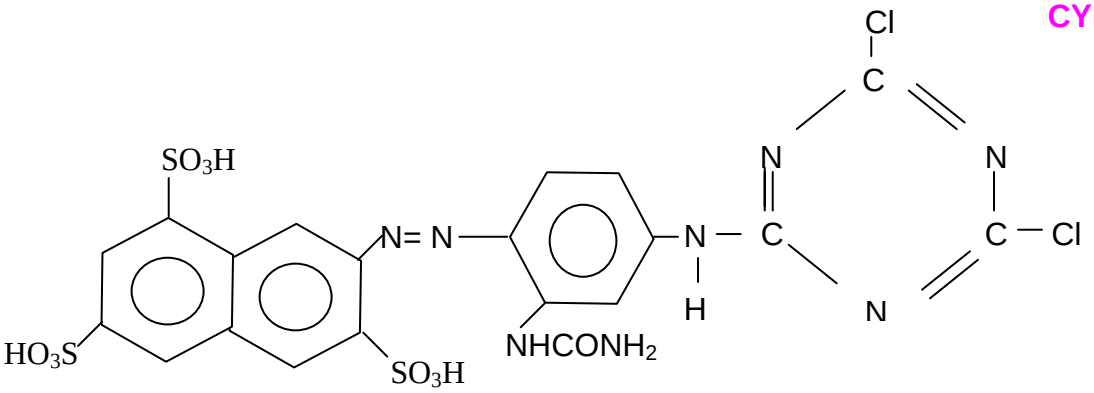
+ NaCl + $2H_2O$ + HCl
M.W.58.5 **M.W. 36** **M.W. 36.5**

Coupler 1 M.W. 545

\+



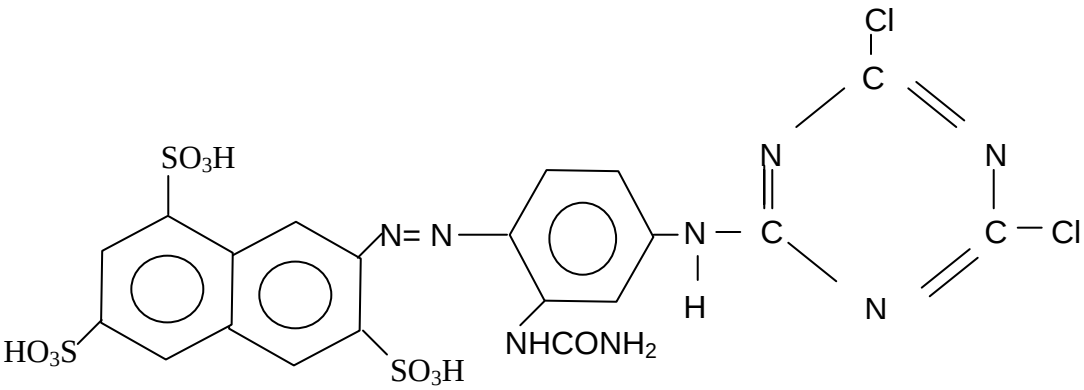
(M.W.184.5)
CYNURIC CHLORIDE



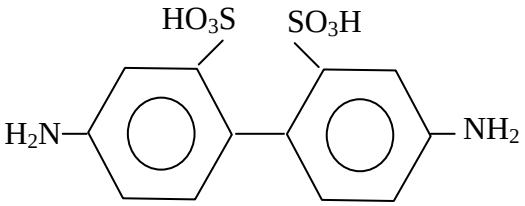
+ NaCl + $2H_2O$ + 2HCl
M.W.58.5 **M.W. 36** **M.W. 73**

Coupler 2 M.W. 693

D) CONDENSATION WITH DASDA:-

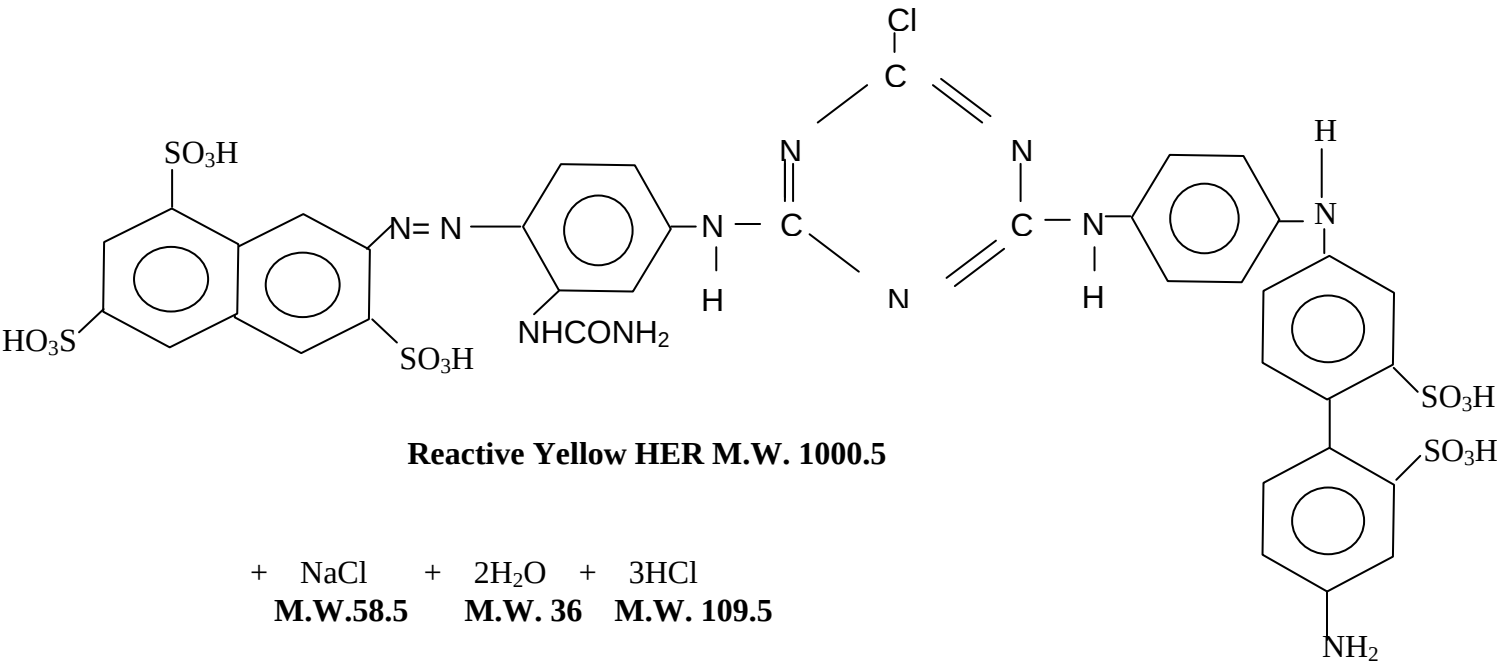


Coupler 2 M.W. 693



DASDA M.W. 344)

+ NaCl + $2H_2O$ + 2HCl
M.W.58.5 M.W. 36 M.W. 73

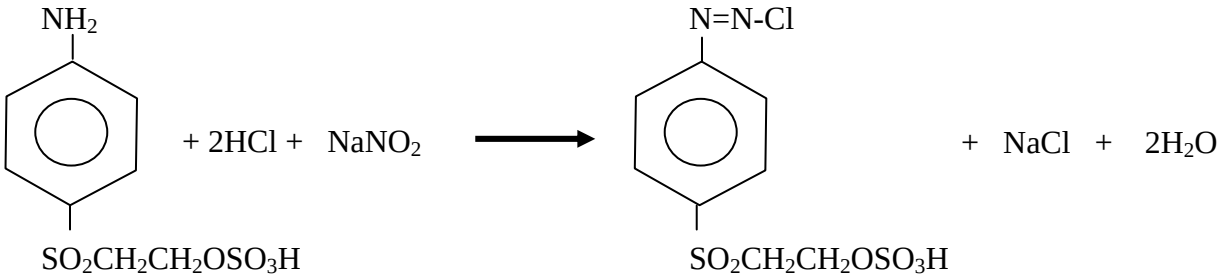


Reactive Yellow HER M.W. 1000.5

+ NaCl + $2H_2O$ + 3HCl
M.W.58.5 M.W. 36 M.W. 109.5

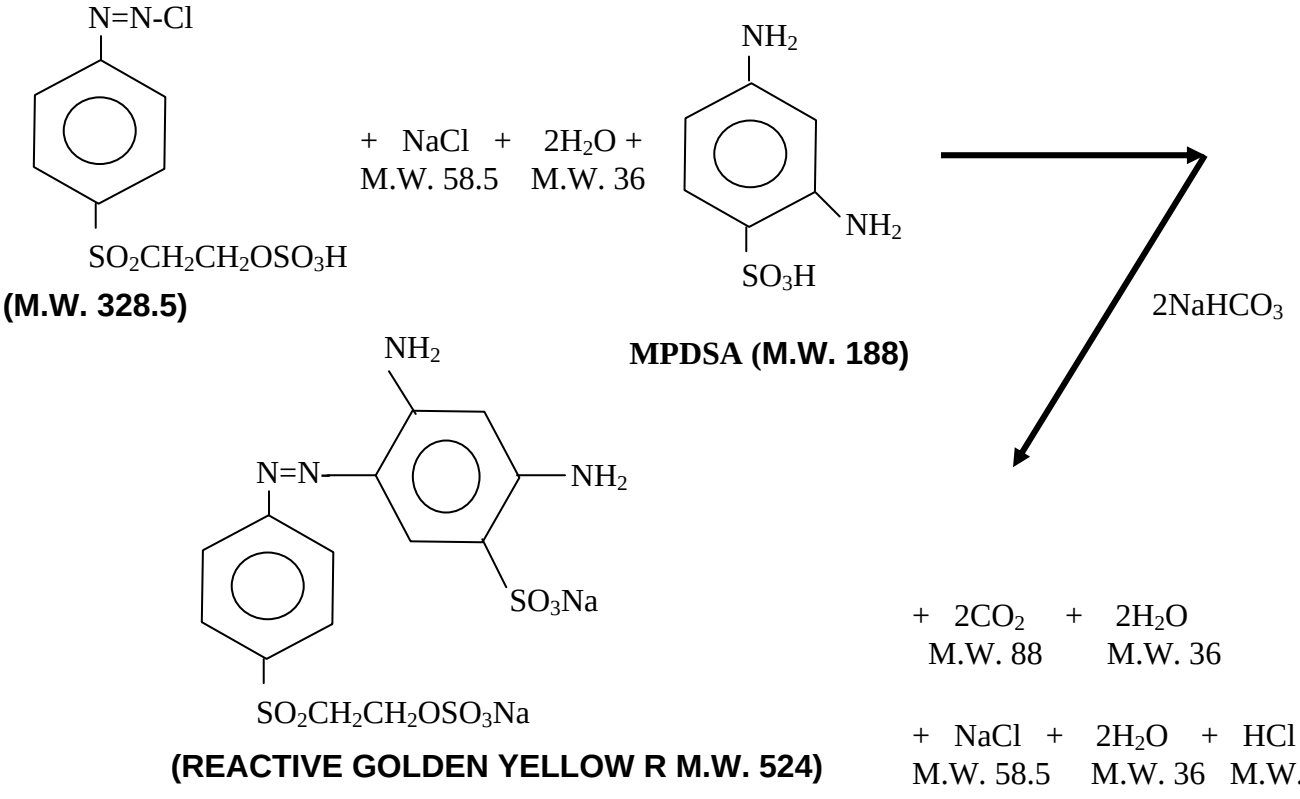
4. CHEMICAL REACTION FOR REACTIVE GOLDEN YELLOW R (Yellow 44)

(1) VINYL SULPHONE DIAZOTIZATION:-



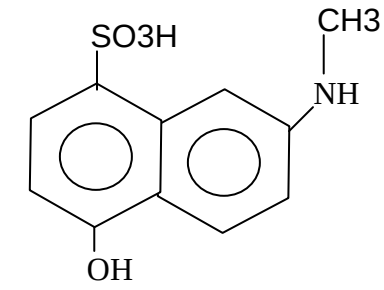
(M.W. 281) **(M.W. 328.5)**

(2) COUPLING WITH MPDSA:-



8. CHEMICAL REACTION FOR REACTIVE ORANGE H_2R:-

(1. Acetylation of NMJ)



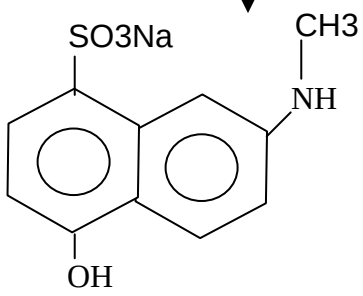
+ NaOH

(M.W.40)

(M.W.253)
N METHYL J ACID

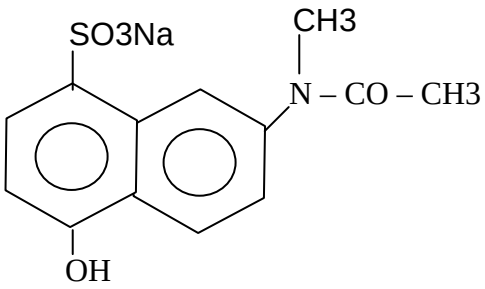
$CH_3 - CO$
O
$CH_3 - CO$

(M.W.102)
ACETYL ANHYDRIED



(M.W.275)

+ H_2O
M.W 18



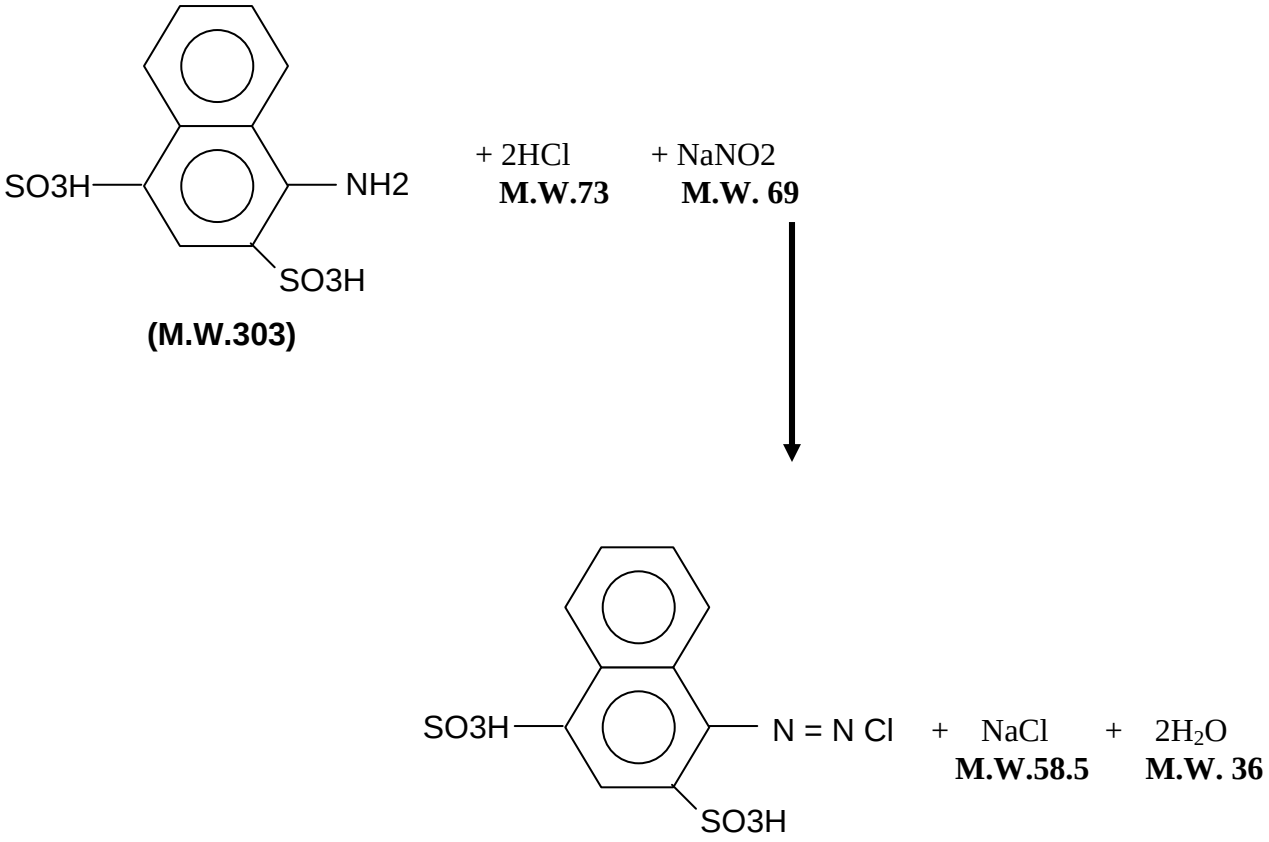
(M.W.317)
ACETYL N METHYL J ACID

+ CH3COOH
M.W. 60

+ H_2O
M.W 18

CONTINUE CHEMICAL REACTION FOR REACTIVE ORANGE H_2R: PAGE 2

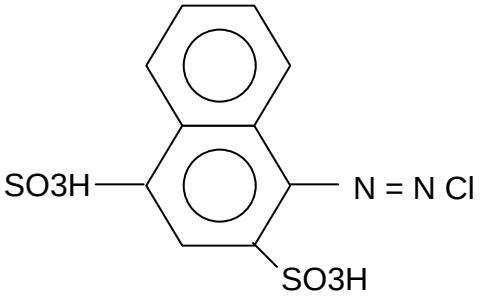
(2. Di Azotization of STA)



Diazo of STA M.W.350.5

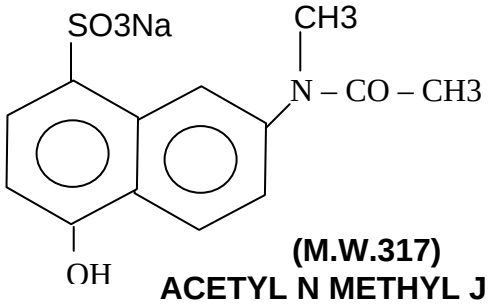
CONTINUE CHEMICAL REACTION FOR REACTIVE ORANGE H2R: PAGE 3

(3. Coupling Acetyl – N –Methyl J Acid with STA Diazo)



Diazo of STA M.W.350.5

\+

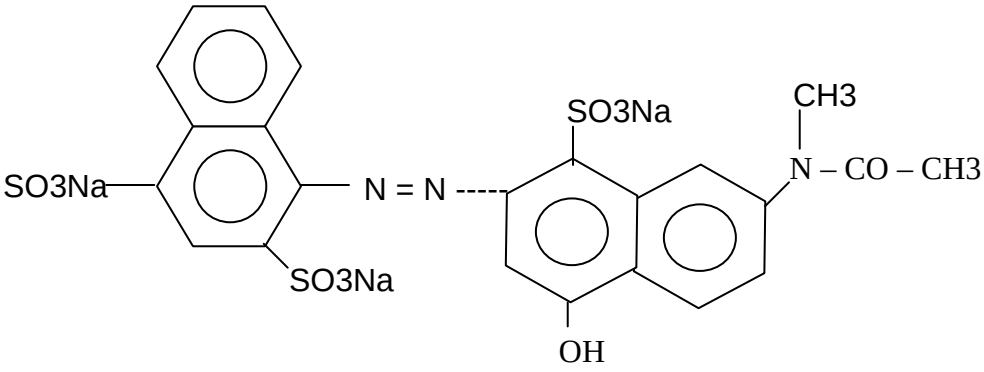


(M.W.317)
ACETYL N METHYL J ACID

\+ NaCl **M.W.58.5** + $2H_2O$ **M.W. 36**

2NaHCO3 **M.W. 168**

\+ CH3COOH **M.W. 60** + H_2O **M.W 18**

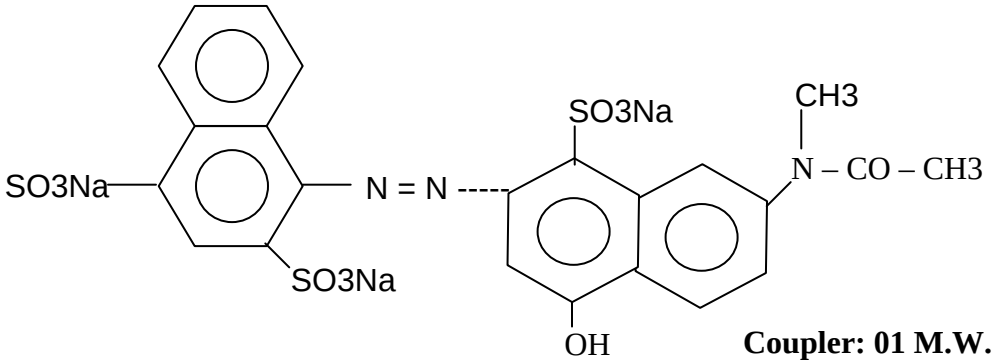


Coupler: 01 M.W. 675

\+ NaCl **M.W.58.5** + $2H_2O$ **M.W. 36** + CH3COOH **M.W. 60** + H_2O **M.W 18** + $2CO_2$ **M.W.88** + $2H_2O$ **M.W. 36** + HCl **M.W. 36.5**

CONTINUE CHEMICAL REACTION FOR REACTIVE ORANGE H2R: PAGE 4

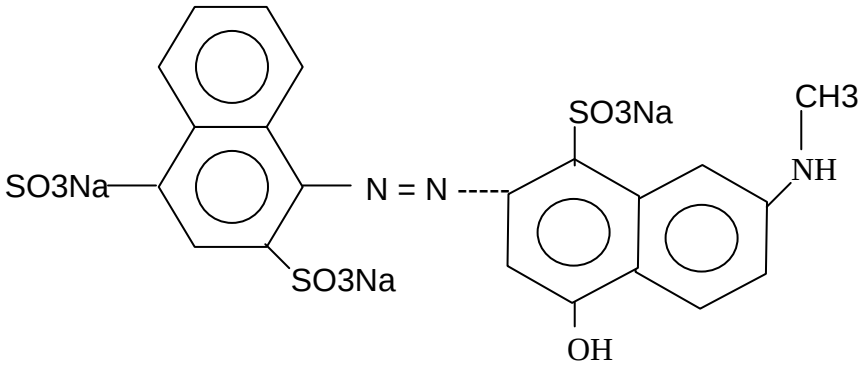
(4. Hydrolysis)



Coupler: 01 M.W. 675

+ NaCl **M.W.58.5** + $2H_2O$ **M.W. 36** + CH3COOH **M.W. 60** + H_2O **M.W 18** + $2CO_2$ **M.W.88** + $2H_2O$ **M.W. 36** + HCl **M.W. 36.5**

NaOH
M.W. 40



(M.W.633)
BASE OF ORANGE H2R

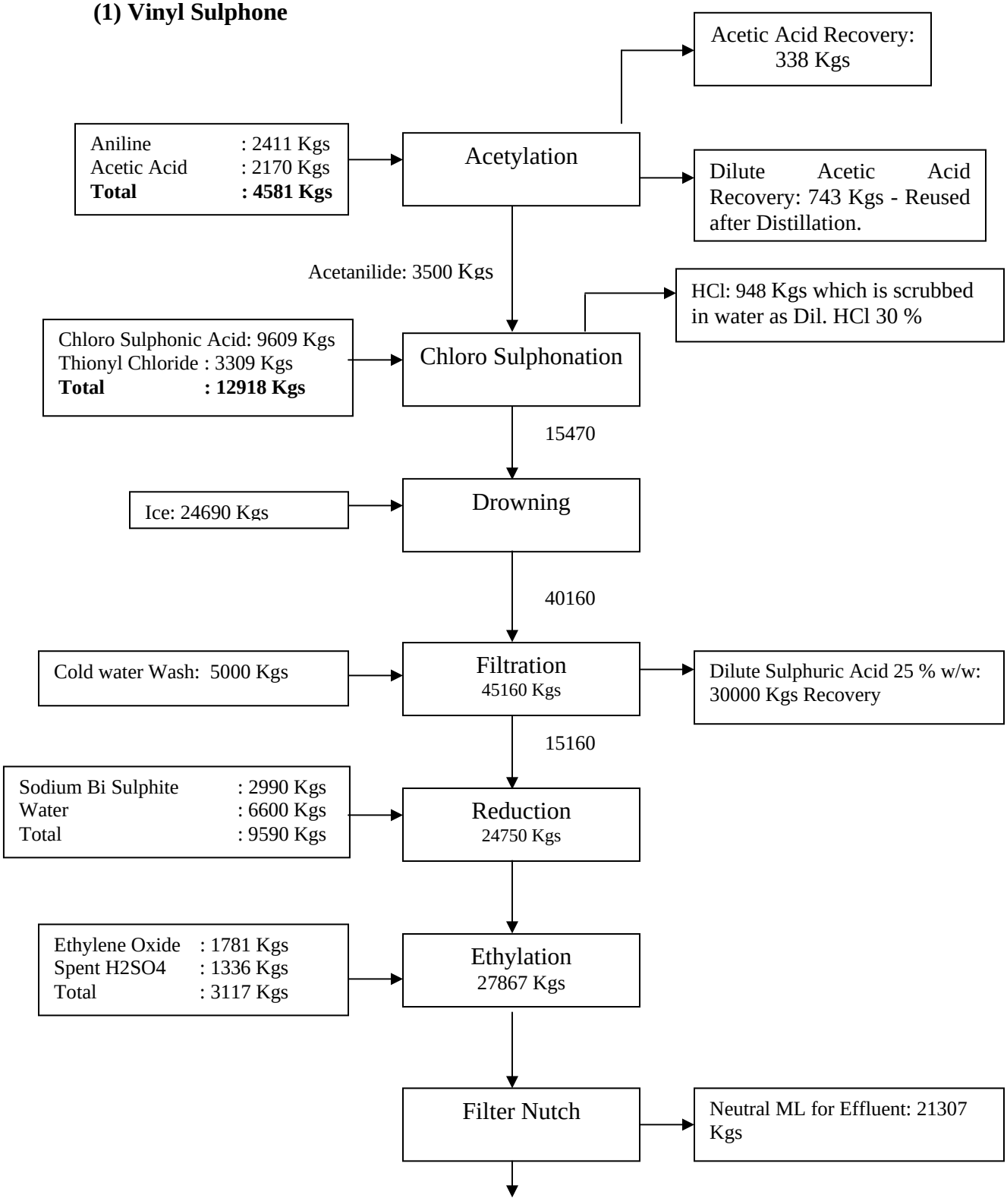
+ CH3COONa **(M.W.82)** (In **Filtrate)** + + NaCl **M.W. 58.5** **(With Product)**

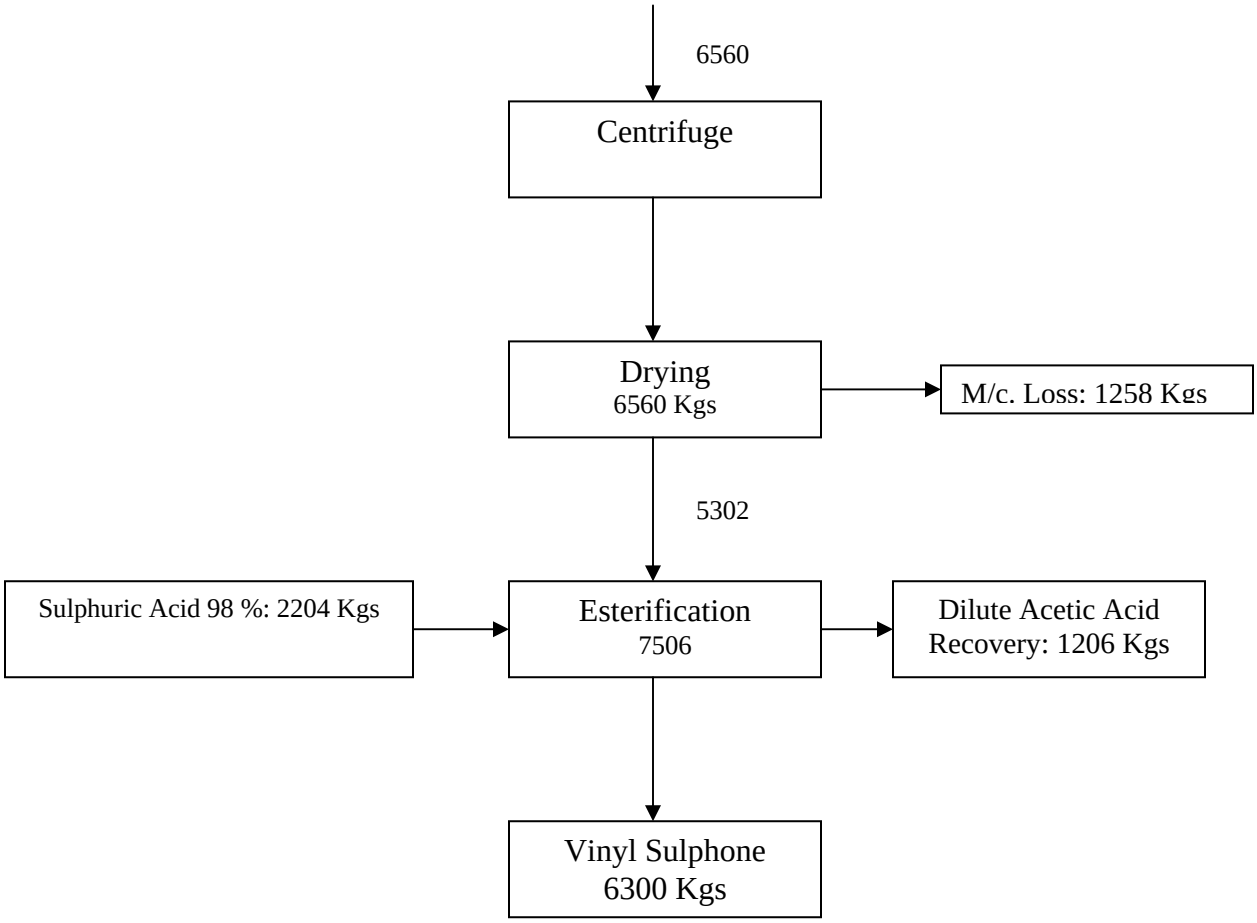
$2H_2O$ **M.W. 36** (In **Filtrate)** + CH3COOH **M.W. 60** (In **Filtrate)** + H_2O **M.W 18** (In **Filtrate)** + $2CO_2$ **M.W.88 (In Air)** + $2H_2O$ **M.W. 36** (In **Filtrate)** + HCl **M.W. 36.5** **(In Filtrate)**

Enclosure: 10

Mass Balance of each Product

(1) Vinyl Sulphone





For, Associated Chemicals Pvt. Ltd.

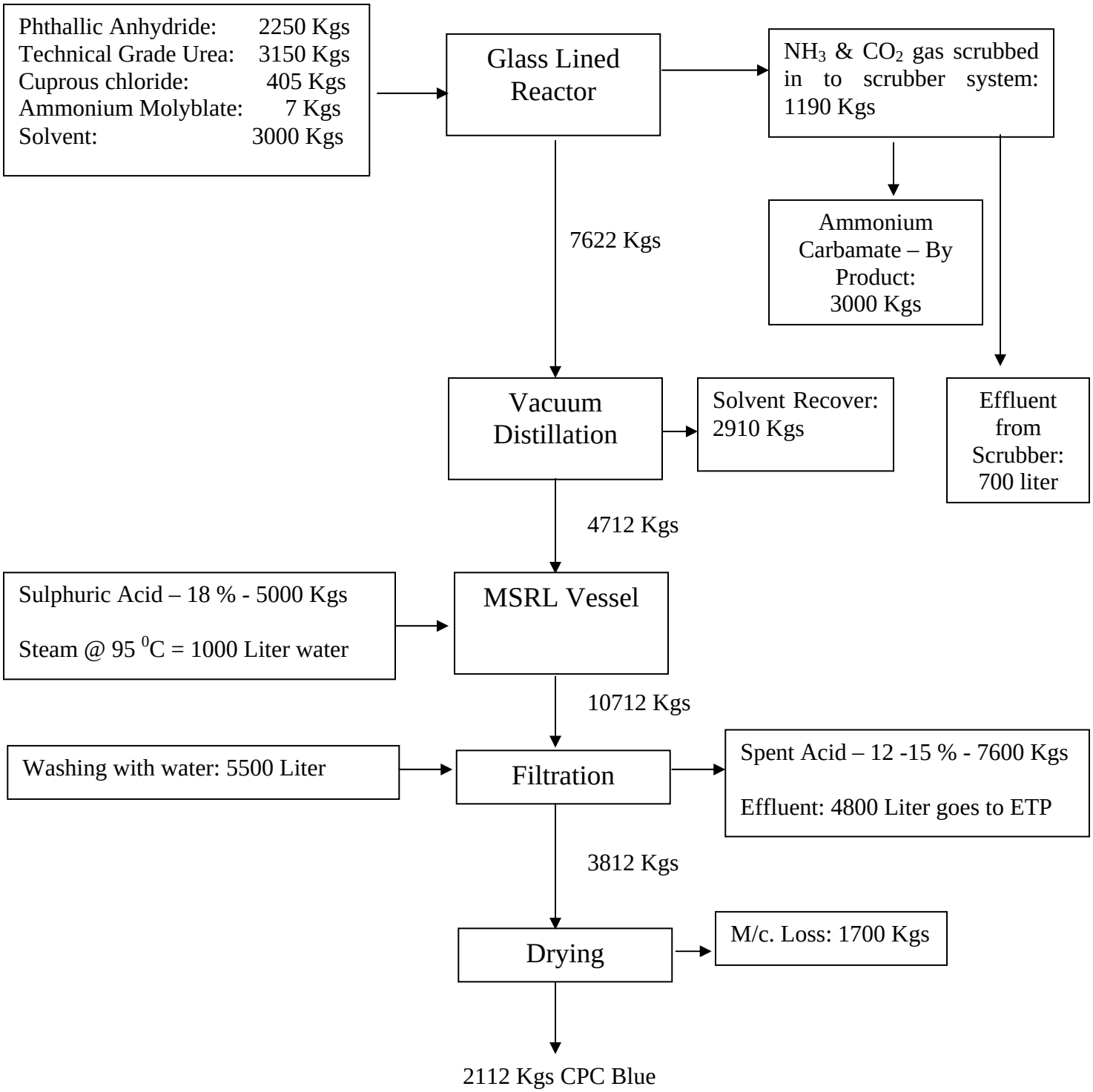
Director

Input in Kgs			Output in Kgs			Management
Aniline	:	2411	Acetic Acid Recovery	:	338	Reused in Process
Acetic Acid	:	2170	Dilute Acetic Acid Recovery	:	743	Reused in Process
Chloro Sulphonic Acid	:	9609	HCl goes to scrubber system	:	948	HCl (25 %) Sell to authorized industries
Thionyl Chloride	:	3309	Dilute Sulphuric Acid Recovery	:	30000	Reuse &
Ice	:	24690	Neutral ML for Effluent	:	21307	Effluent Treatment Plant
Water	:	11600	M/c. loss	:	1258	
Sodium Bi Sulphite	:	2990	Dilute Acetic Acid Recovery	:	1206	Reused in Process
Ethylene Oxide	:	1781	Product: Vinyl Sulphone		6300	
Spent Sulphuric Acid	:	1336				
Sulphuric Acid 98 %	:	2204				
Total		**62100**	**Total**		**62100**	

For, Associated Chemicals Pvt. Ltd.

Director

2. Mass Balance for CPC Blue

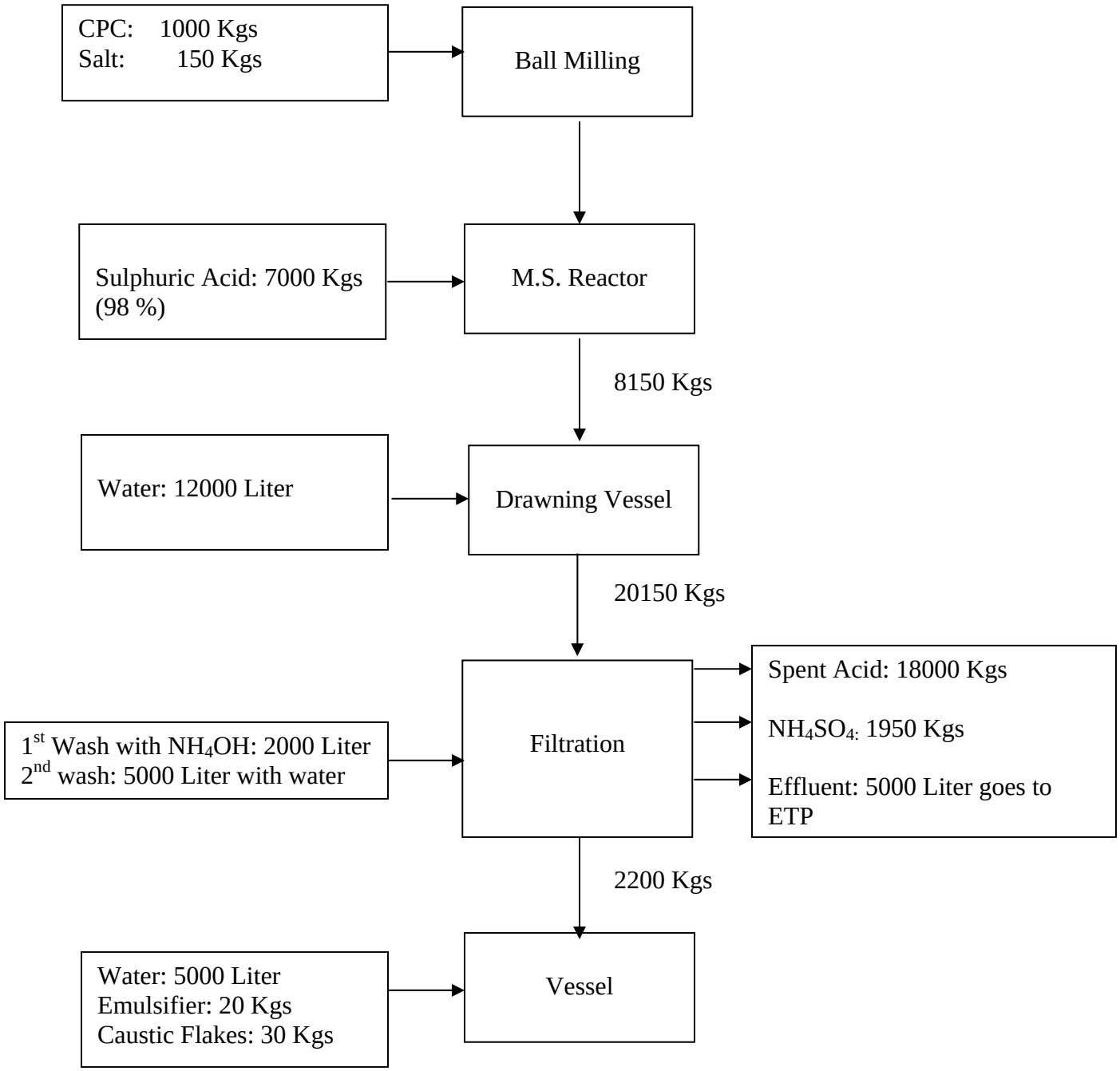


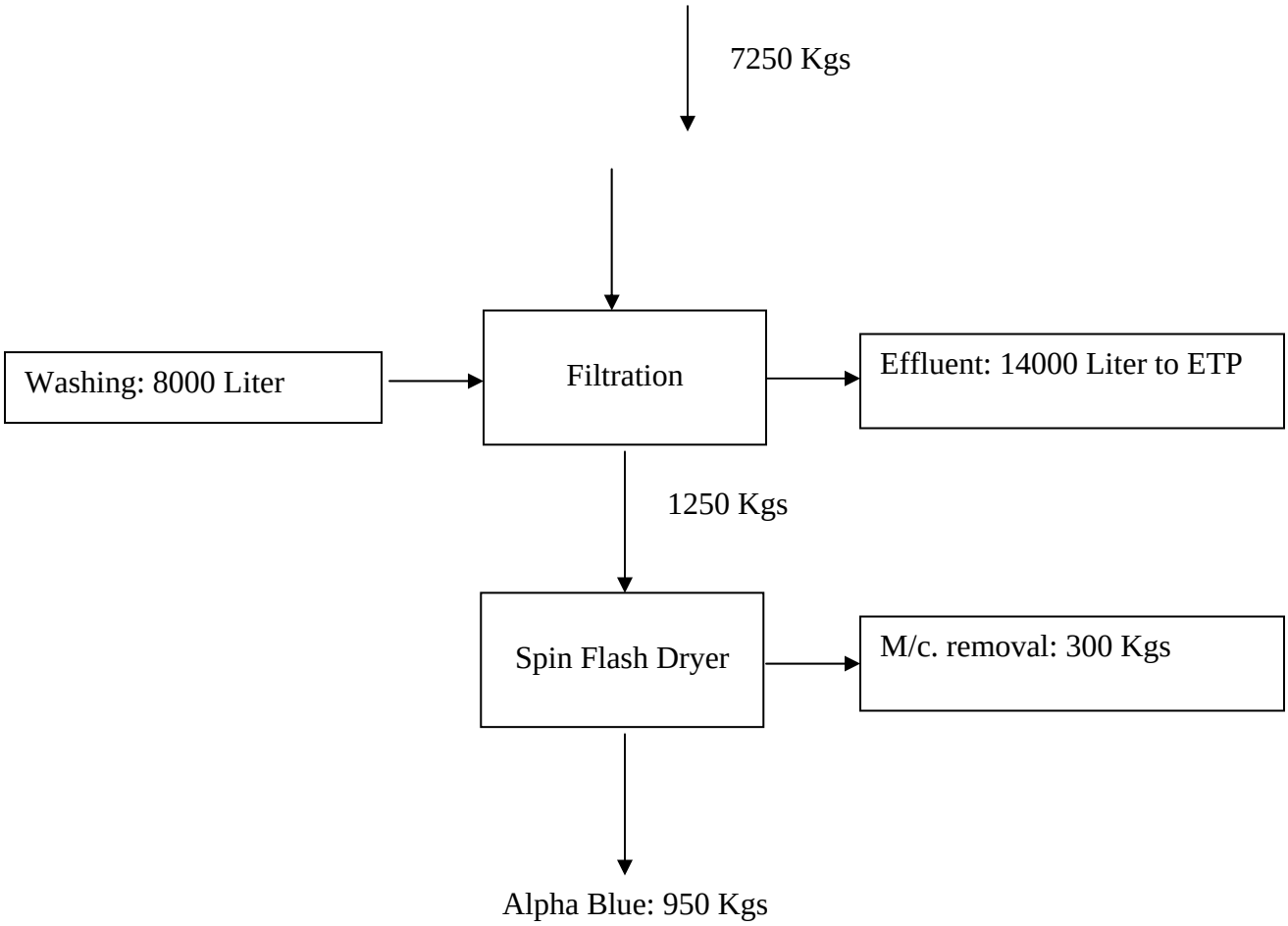
Input in Kgs			Output in Kgs			Management
Phthallic Anhydride	:	2250	NH_3 & CO_2 gas	:	1190	Scrubbed into Scrubber system & Converted into Ammonium Carbamate
Technical Grade Urea	:	3150	Solvent Recovery	:	2910	Used in next batch
Cuprous chloride	:	405	Spent Acid (12 – 15 %)	:	7600	Reuse in Process or Sale
Ammonium Molyblate	:	7	Effluent to ETP	:	4800	Treat in Effluent Treatment Plant
Solvent	:	3000	M/c. Loss	:	1700	Evaporate
Sulphuric Acid (18 %)	:	5000	Product : CPC Blue	:	2112	Sale to Party.
Steam	:	1000		:		
Water	:	5500				
	:					
	:					
Total		**20312**	**Total**		**20312**	

For, Associated Chemstuff Pvt. Ltd.

Director

3. Mass Balance for Alpha Blue





For, Associated Dyestuff Pvt. Ltd.

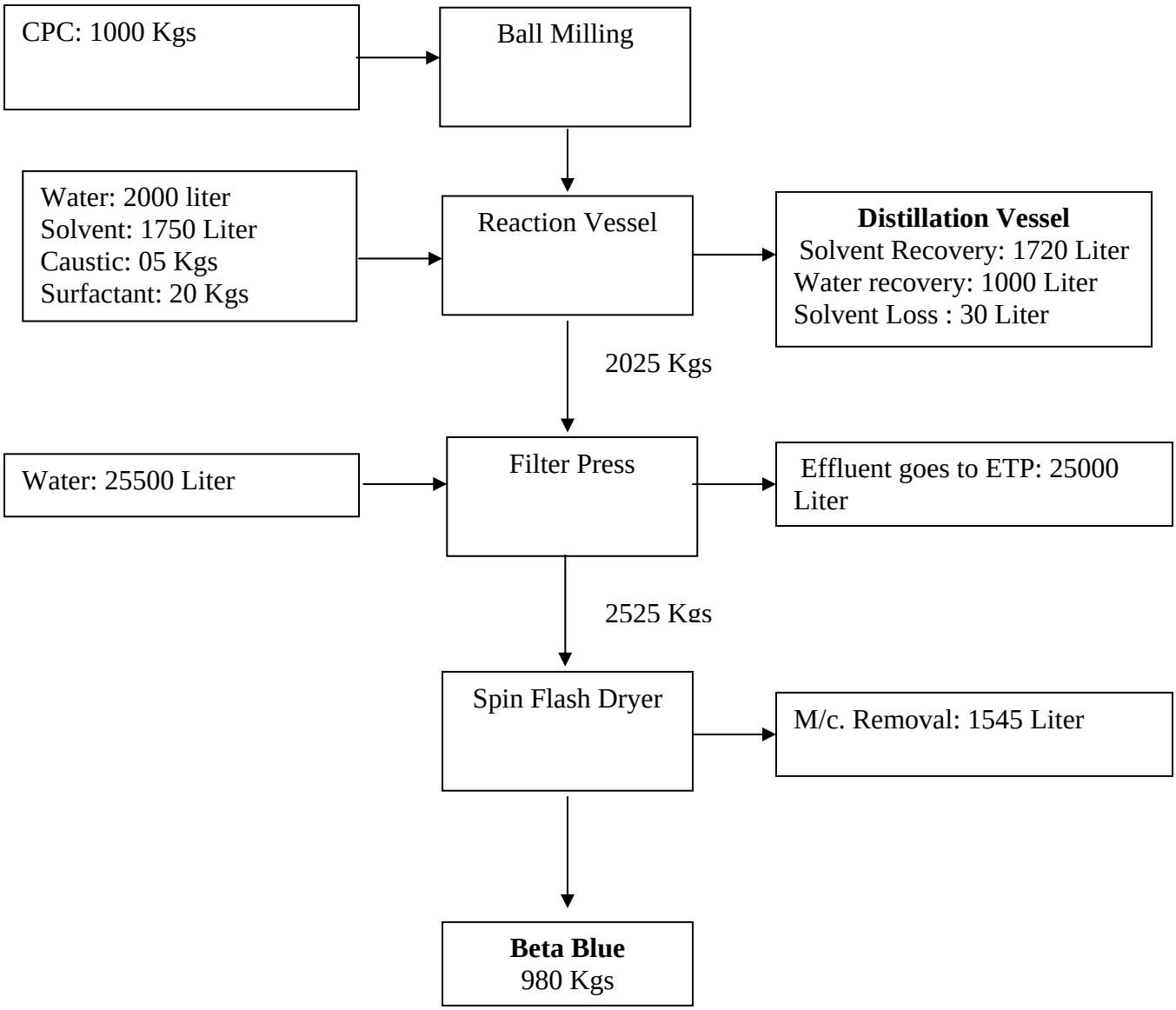
Director

Input in Kgs			Output in Kgs			Management
CPC	:	1000	Product : Alpha Blue	:	950	Sale to market
Salt	:	150	Effluent	:	19000	Treated in Effluent Treatment Plant
Sulphuric Acid (98 %)	:	7000	Spent Acid	:	18000	Reuse in process or Sale to Authorized Industries
Water	:	30000	NH_4SO_4	:	1950	Sale to Authorized Industries
Emulsifier	:	20	M/c. Removal	:	300	Evaporate
Cautic Flakes	:	30		:		
NH_4OH Solution	:	2000		:		
	:					
	:					
	:					
Total		**40200**	**Total**		**40200**	

For, Associated Chemtuff Pvt. Ltd.

Director

4. Mass Balance for Beta Blue

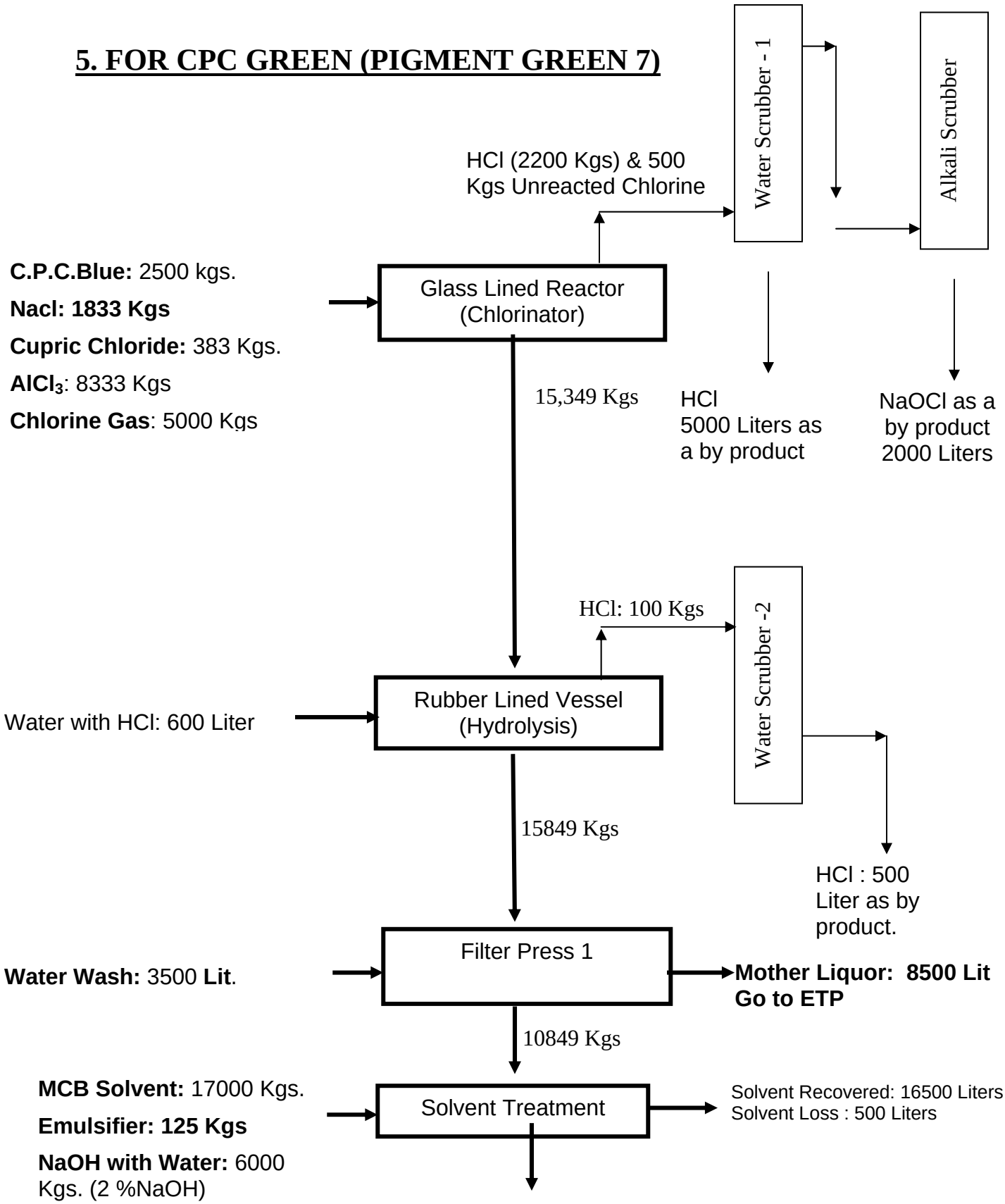


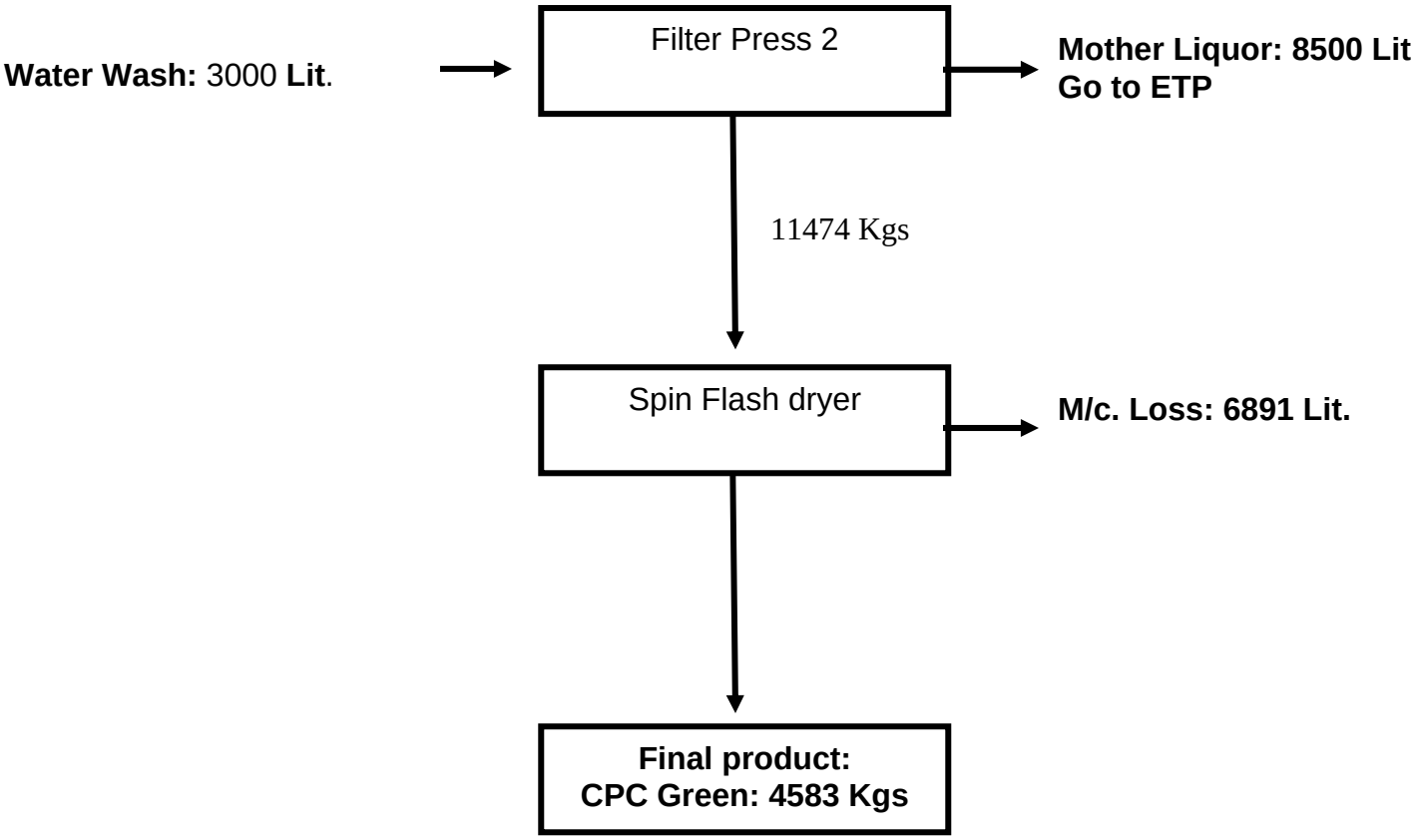
For, Associated Chemicals Pvt. Ltd.

Director

Input in Kgs			Output in Kgs			Management
CPC	:	1000	Solvent Recovery	:	1720	Used in next batch
Water	:	27500	Solvent Loss	:	30	It can not be recovered.
Solvent	:	1750	Water Recovery	:	1000	Used in process.
Caustic	:	5	Effluent to ETP	:	25000	Goes to Effluent Treatment Plant.
Surfactant	:	20	M/c. Removal	:	1545	It will be evaporated.
	:		Product: Beta Blue	:	980	Sale to Market.
	:			:		
	:					
	:					
	:					
Total		**30275**	**Total**		**30275**	

5. FOR CPC GREEN (PIGMENT GREEN 7)





For, Associated Agrostuff Pvt. Ltd.

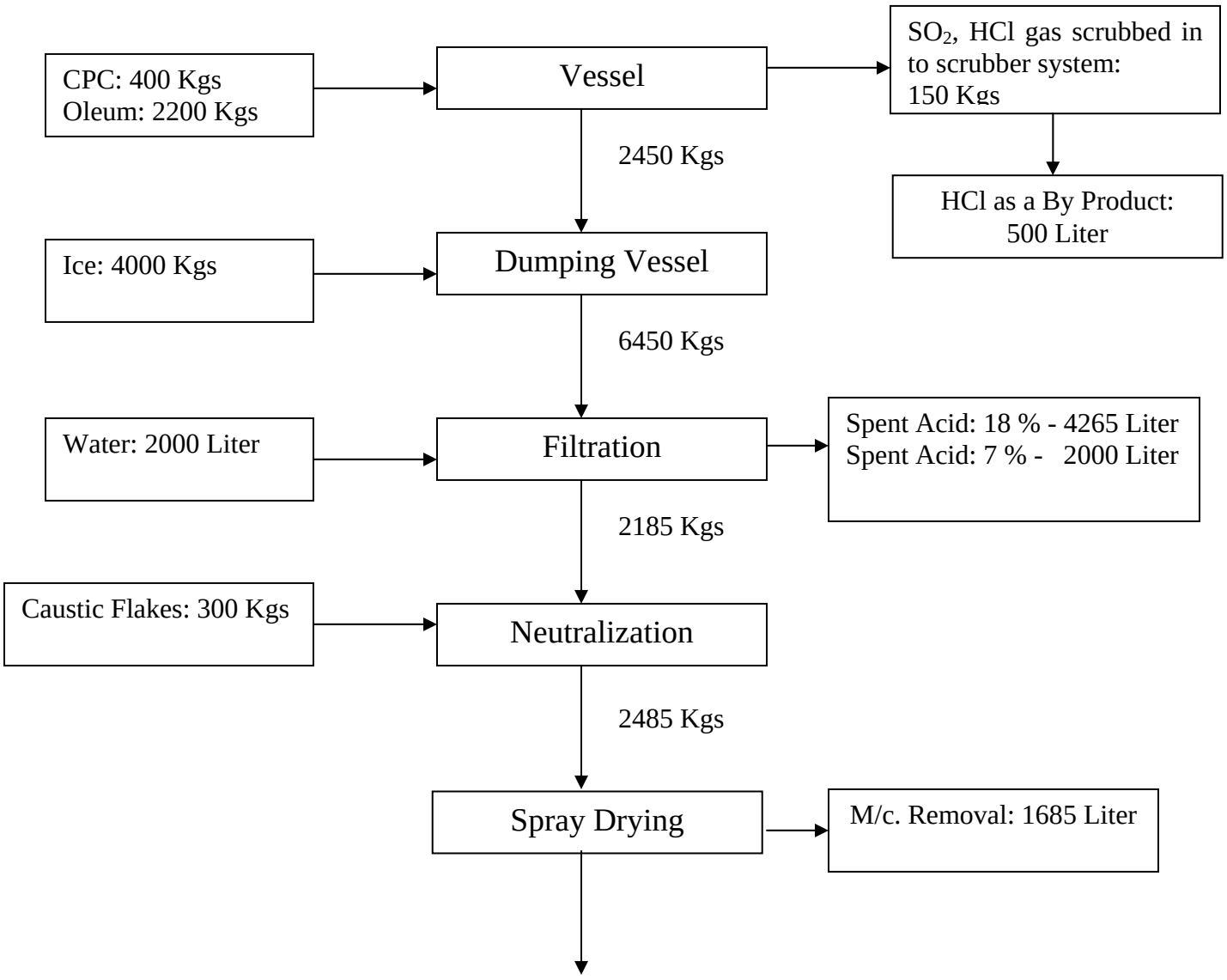
Director

Input in Kgs			Output in Kgs			Management
CPC Blue	:	2500	HCl gas	:	2200	Scrub into scrubber
NaCl	:	1833	Chlorine	:	500	Scrub into scrubber
Cupric Chloride	:	383	HCl	:	100	Scrub into scrubber
Aluminium Chloride	:	8333	Effluent	:	17000	Goes to effluent Treatment Plant
Chlorine Gas	:	5000	Solvent Recover	:	16500	Used in next batch
Water with HCl	:	600	CPC Green	:	4583	Sale as final product
MCB Solvent	:	17000	M/c. Loss	:	6891	It will be evaporated
Emulsifier	:	125	Solvent Loss	:	500	
NaOH with water	:	6000				
Water wash	:	3000				
Water Wash	:	3500				
Total		**48274**	**Total**		**48274**	

For, Associated Dyestuff Pvt. Ltd.

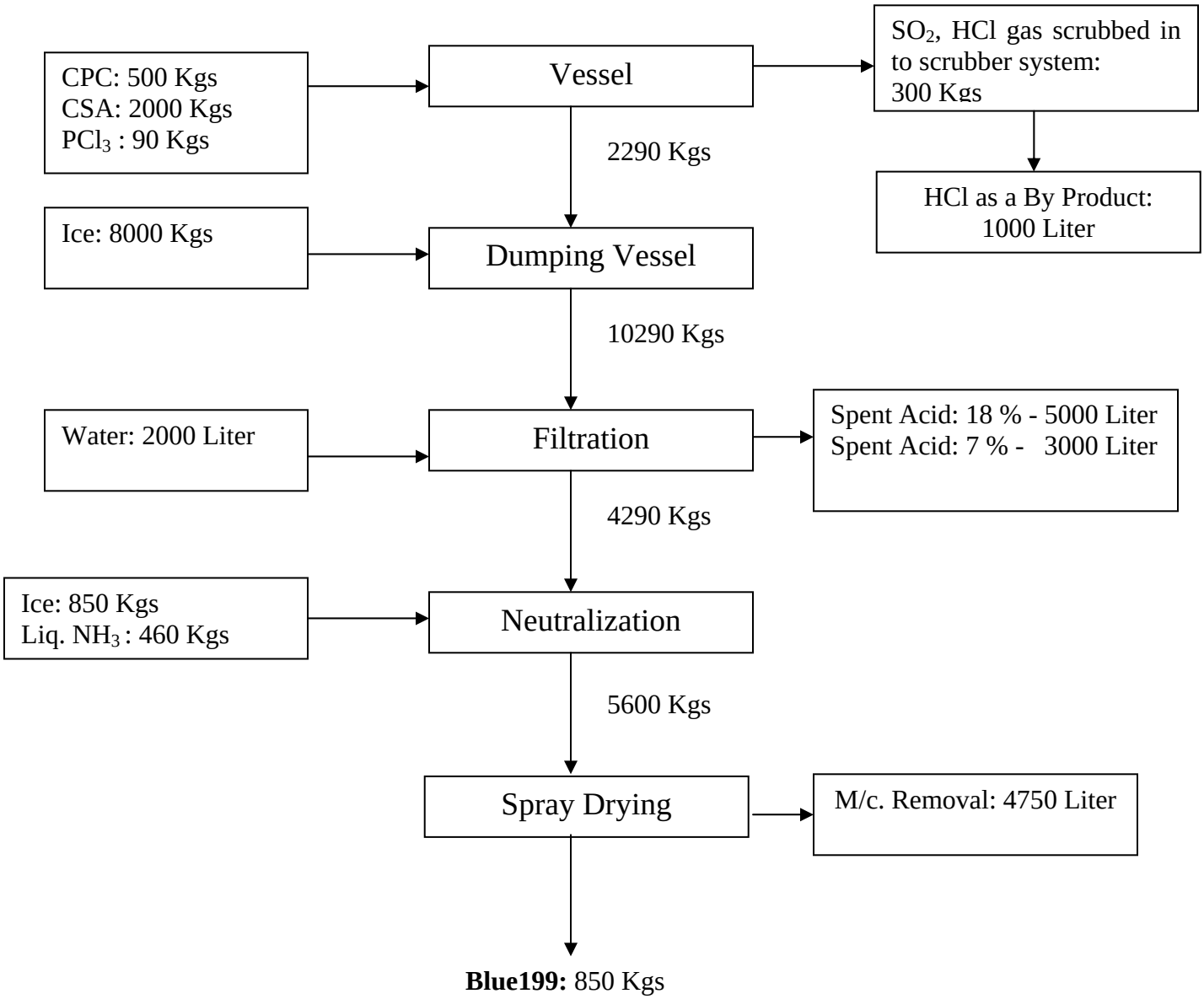
Director

6. Mass Balance for Direct Blue 86 (Direct Turquoise Blue)

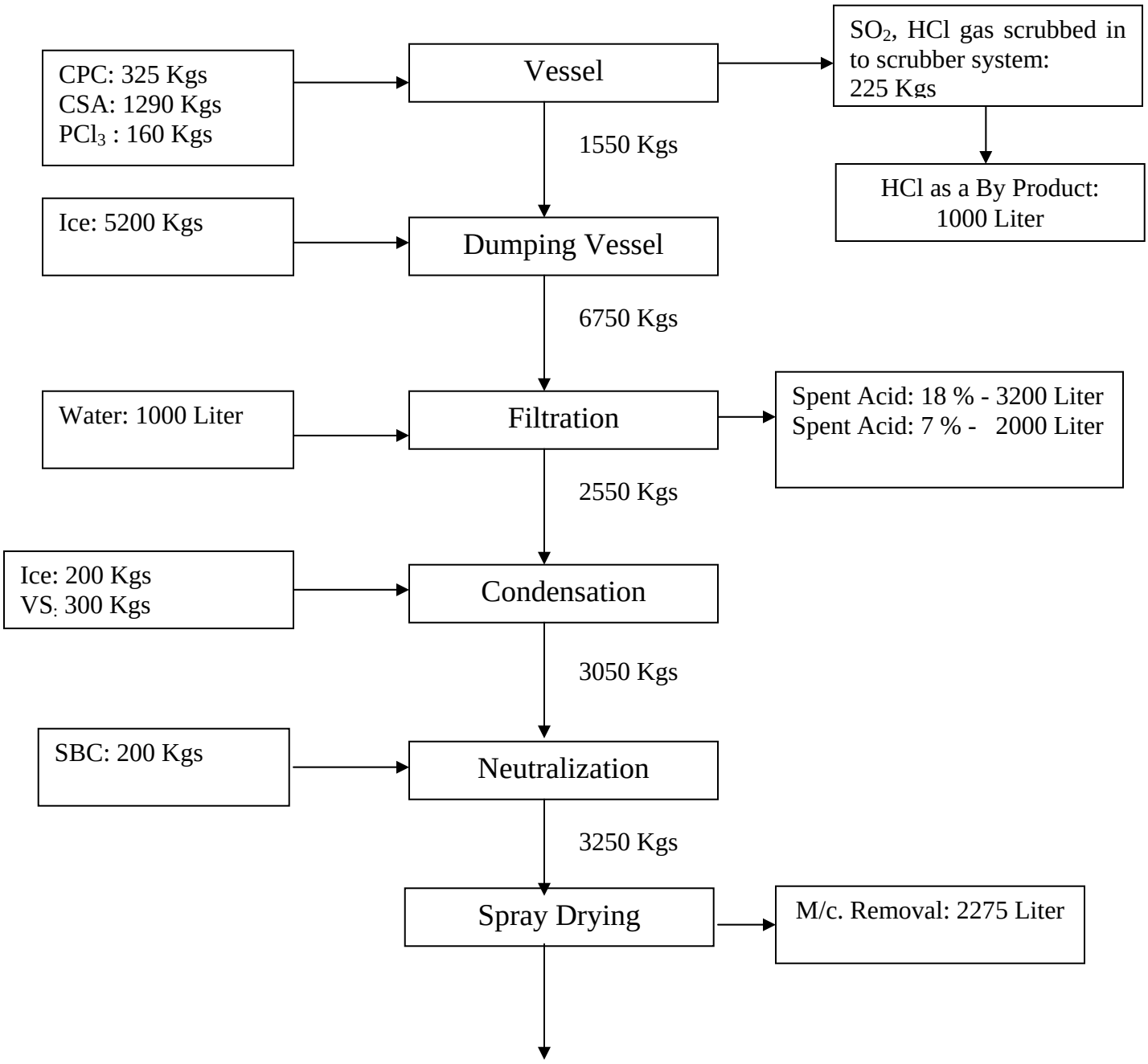


Blue 86: 800 Kgs

7. Mass Balance for Direct Turquoise Blue FBL (Blue 199)



8. Mass Balance forReactive Blue 21 (Blue G)

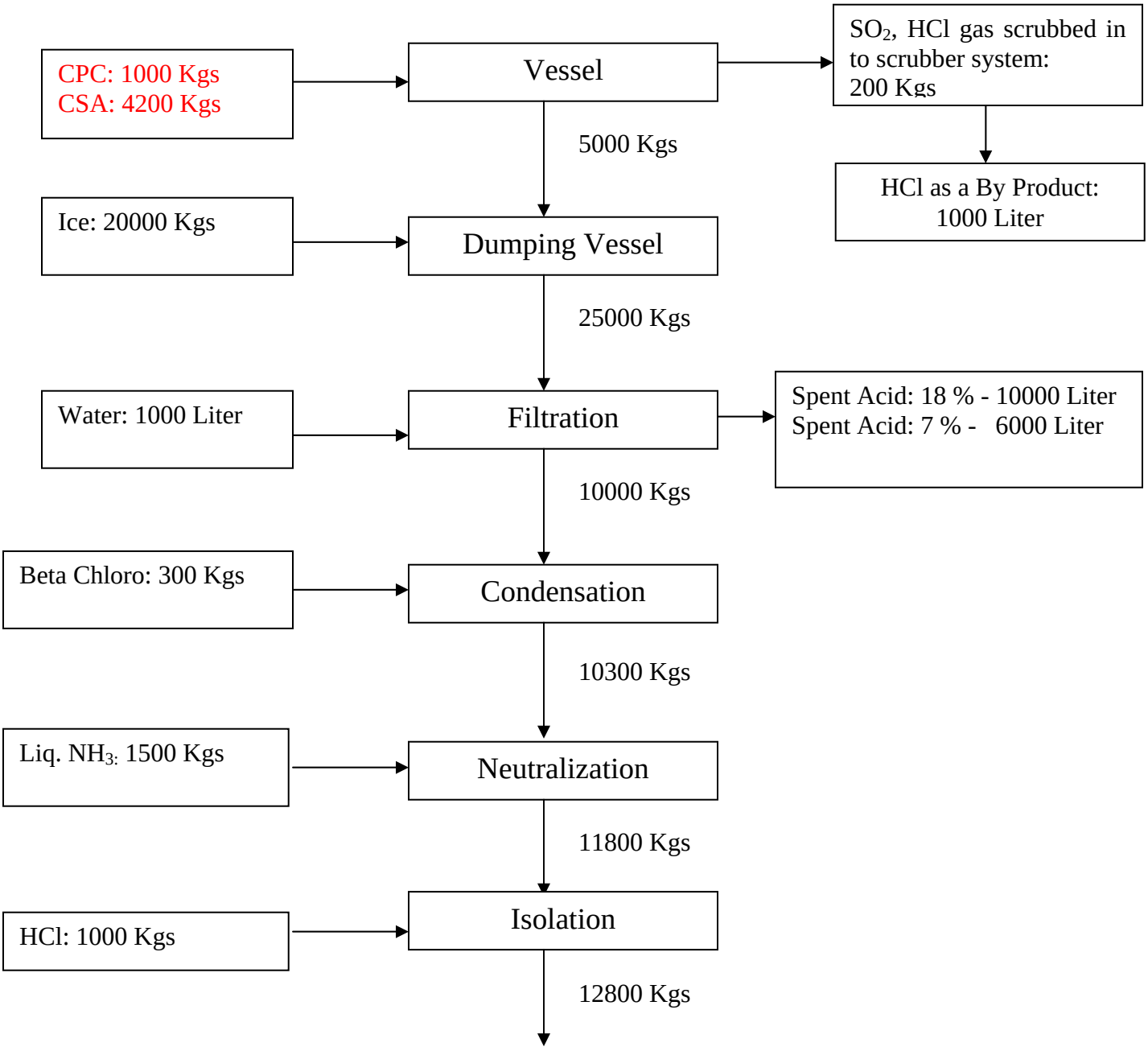


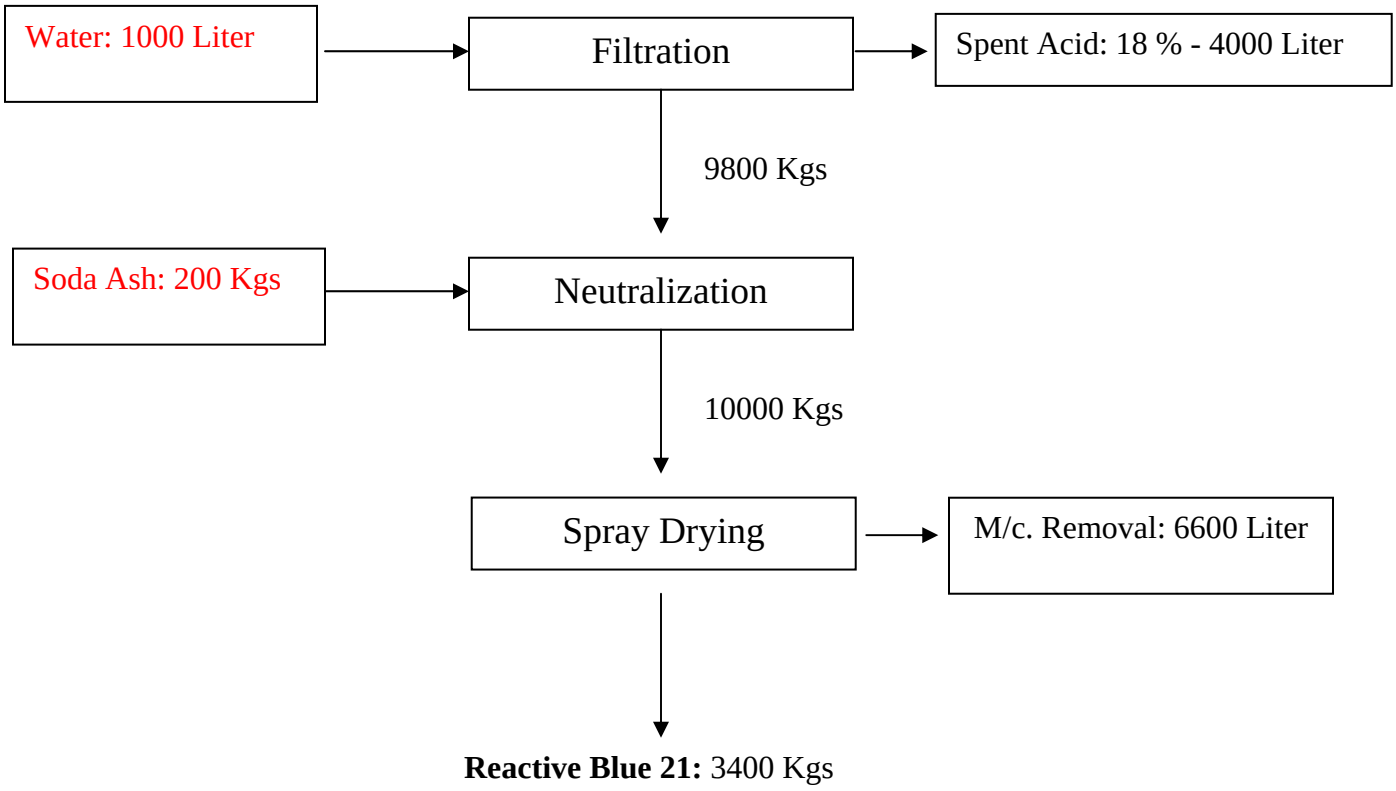
Reactive Blue 21: 975 Kgs

For, Associated Chemtuff Pvt. Ltd.

Director

9. Mass Balance for Reactive Blue 25 (Blue H5G)



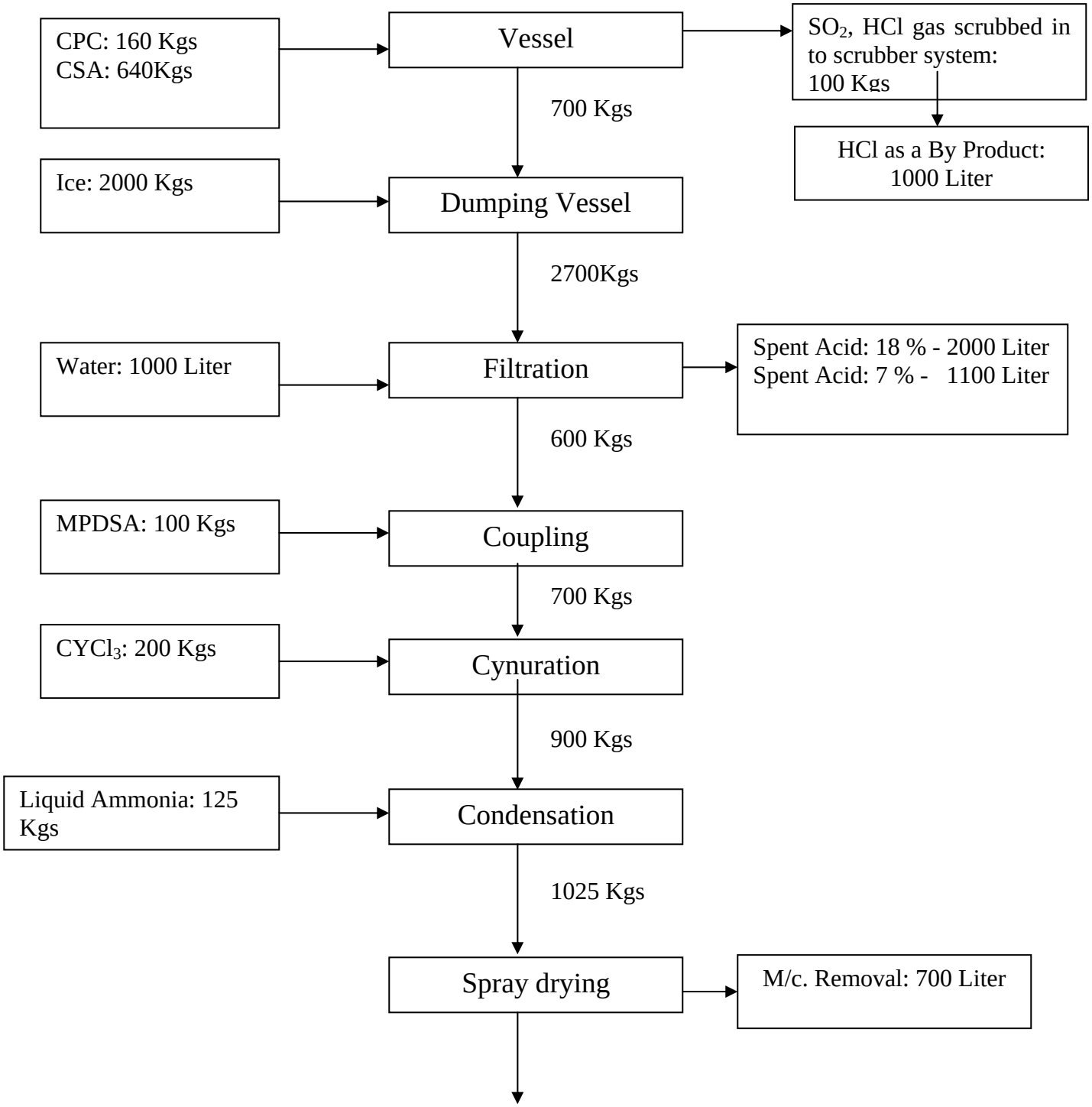


Reactive Blue 21: 3400 Kgs

For, Associated Dyestuff Pvt. Ltd.

Director

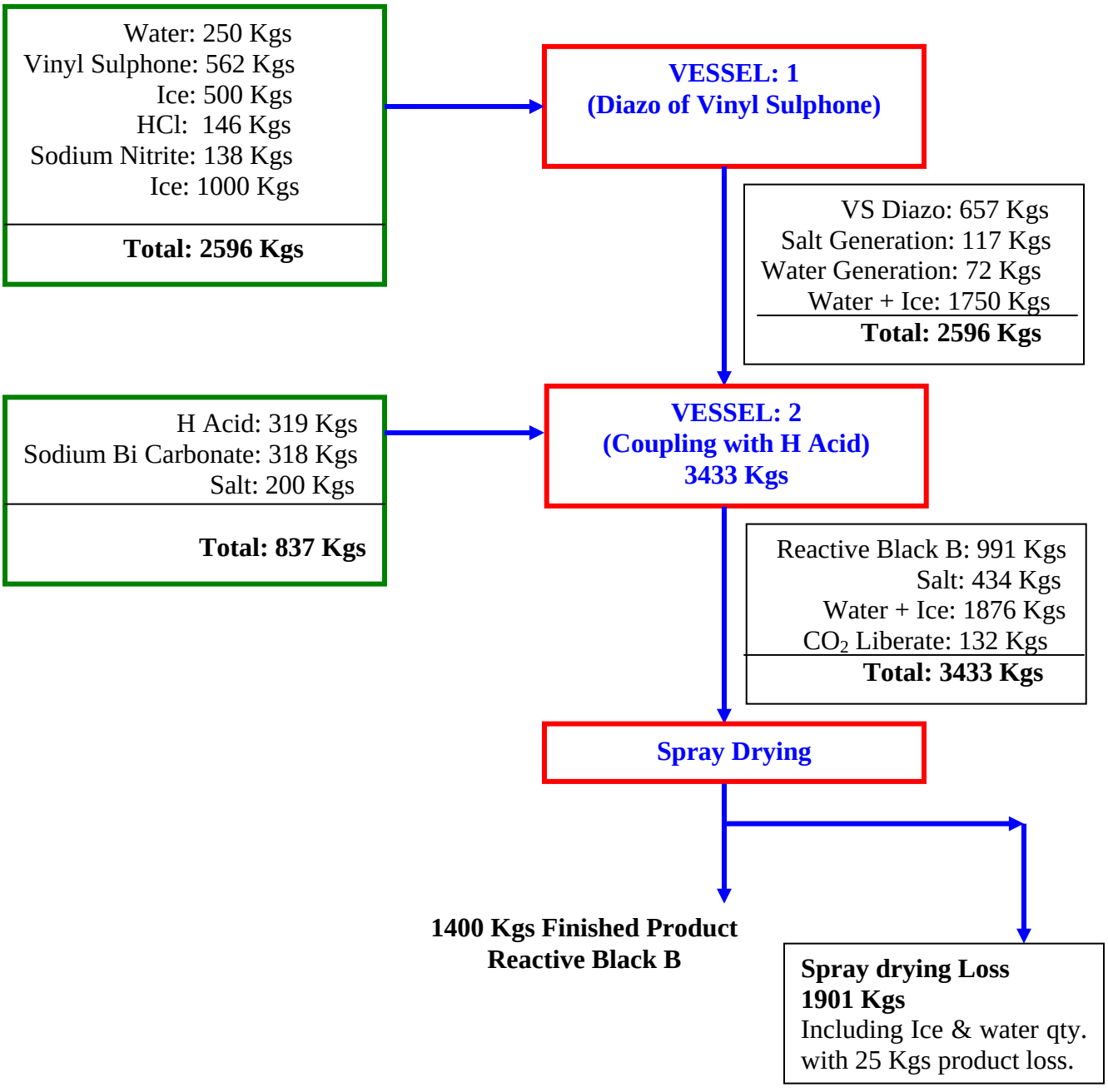
10. Mass Balance for Reactive Blue 72



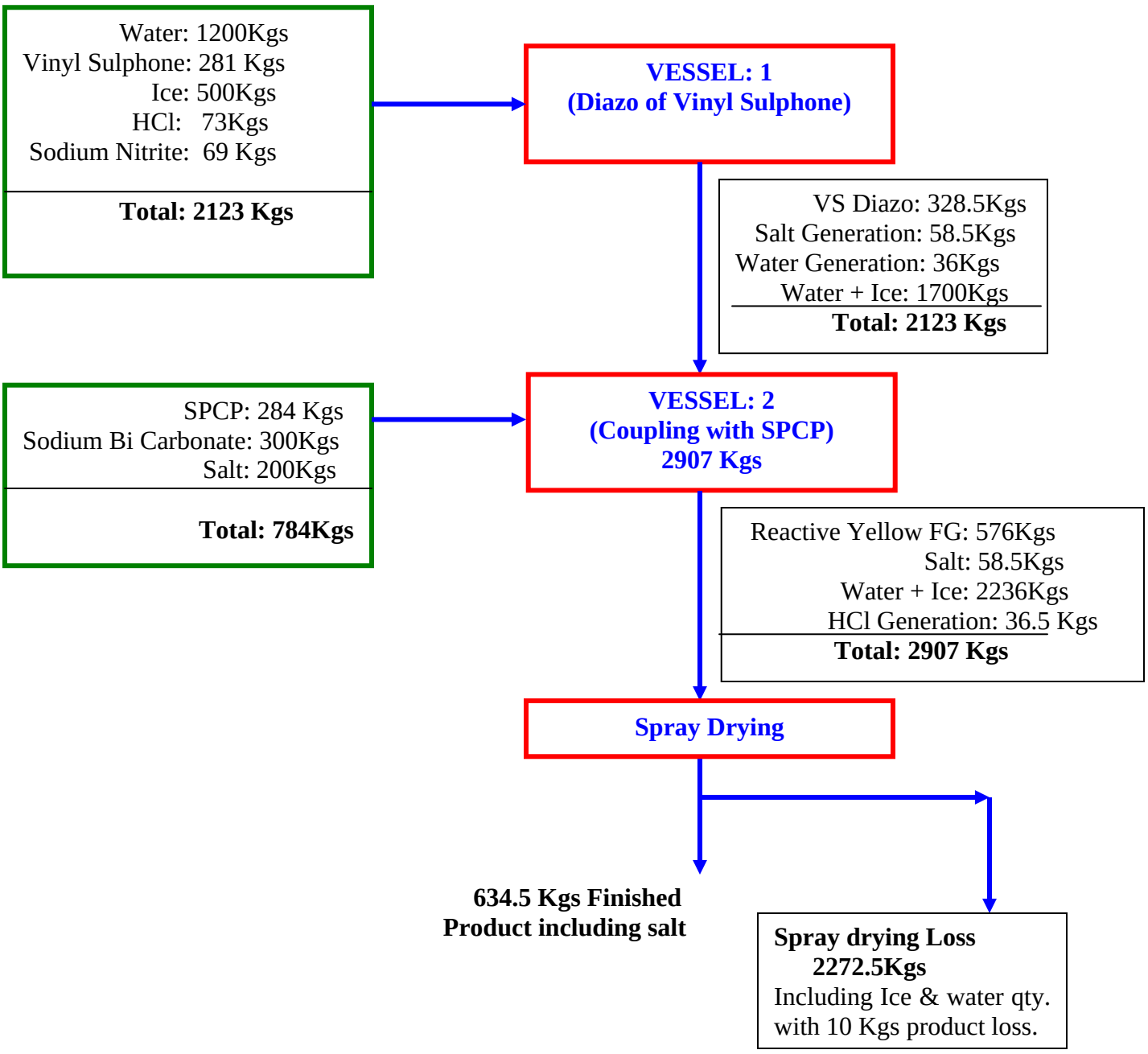
Reactive Blue 72: 325 Kgs

ENCLOSURE NO. 7	MASS BALANCE OF EACH PRODUCT

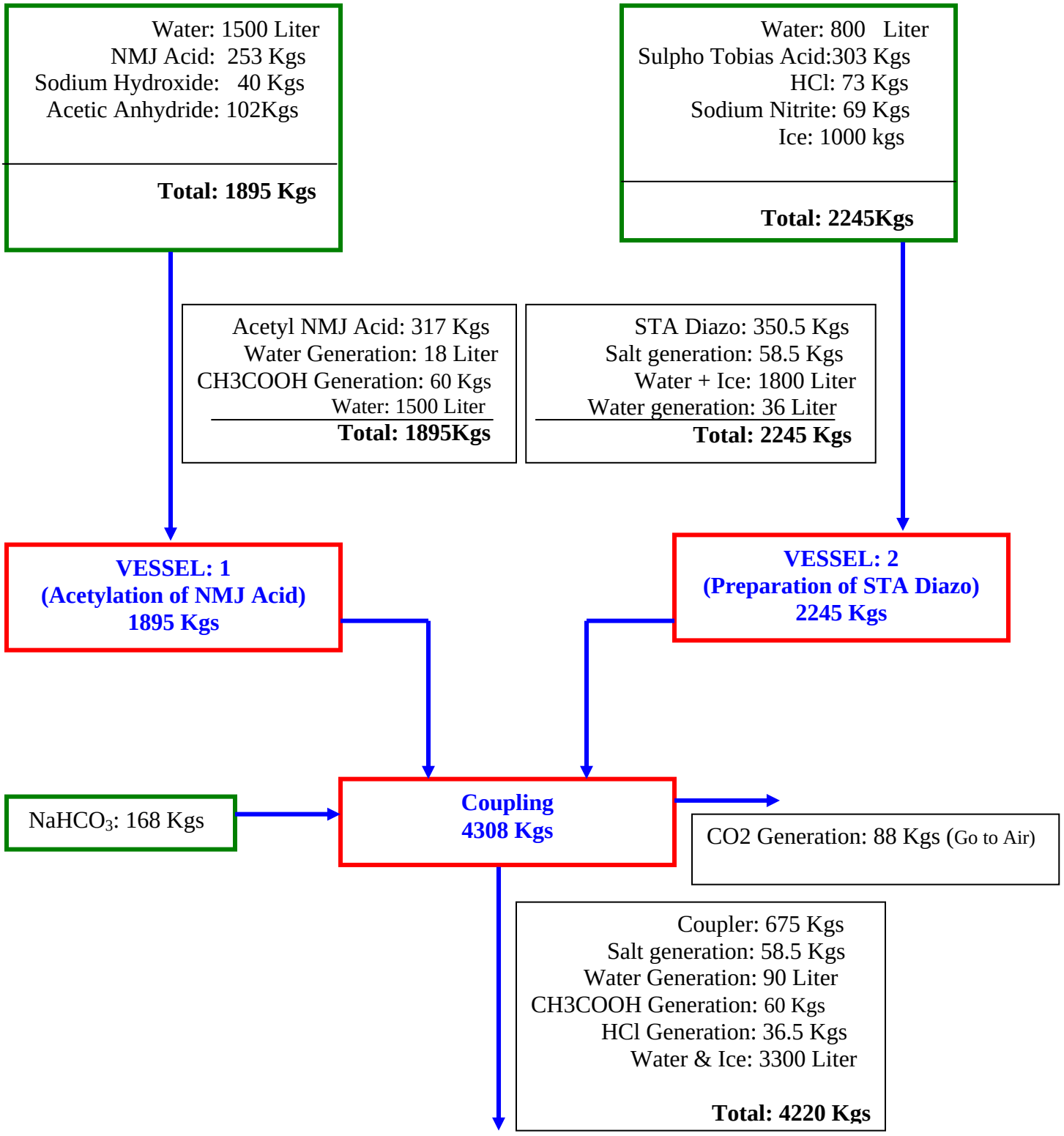
1. REACTIVE BLACK B

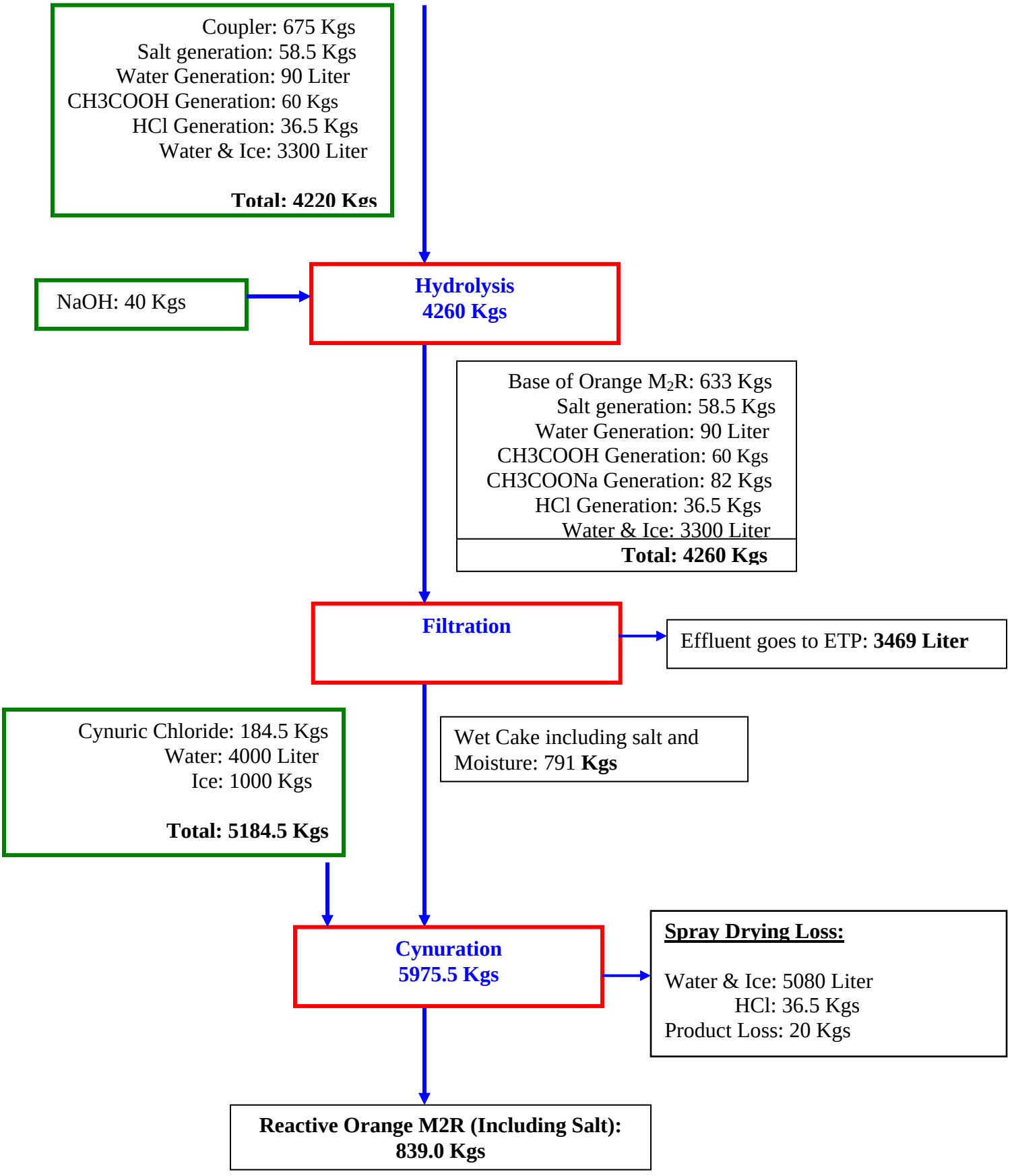


2. REACTIVE YELLOW FG

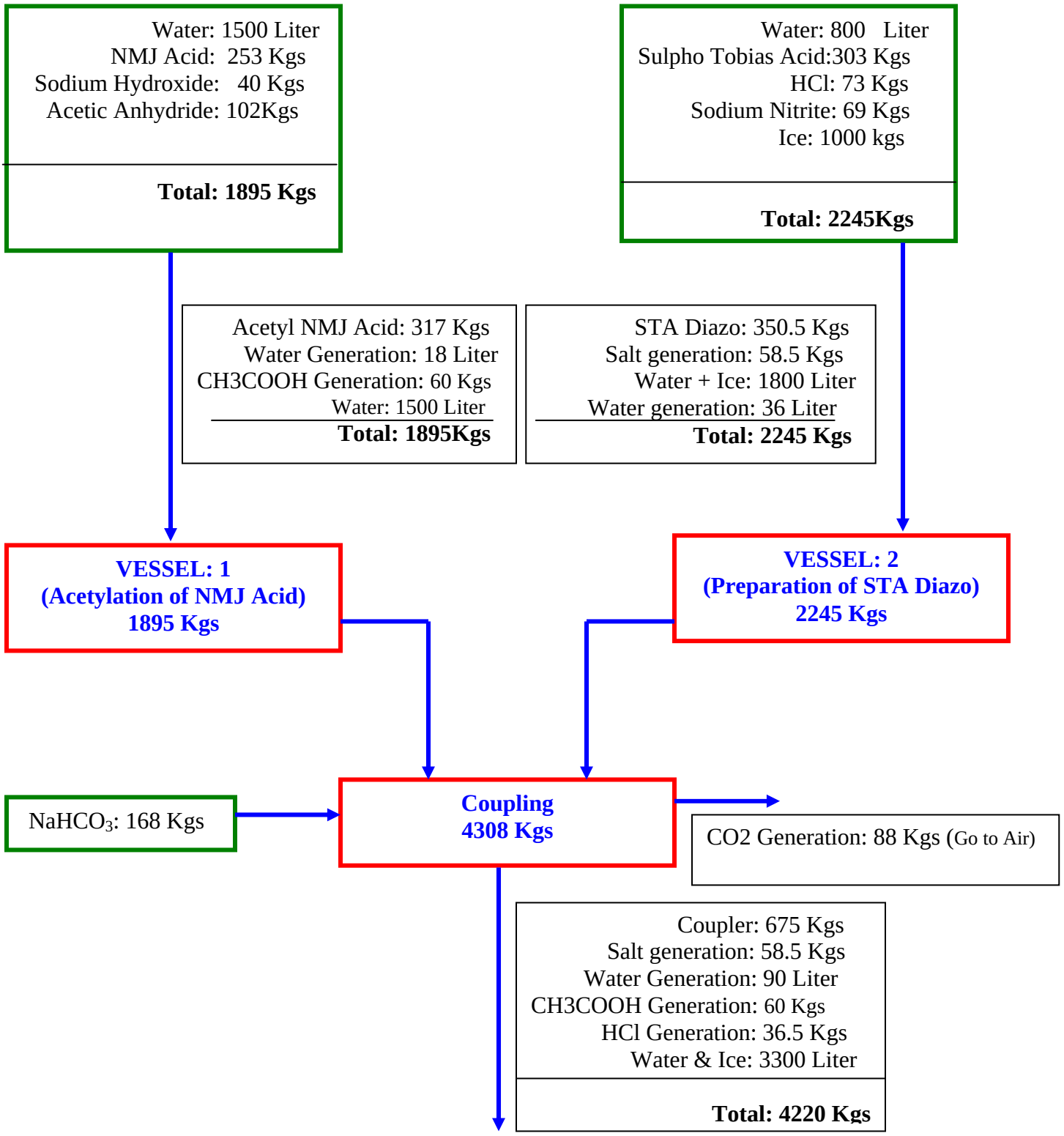


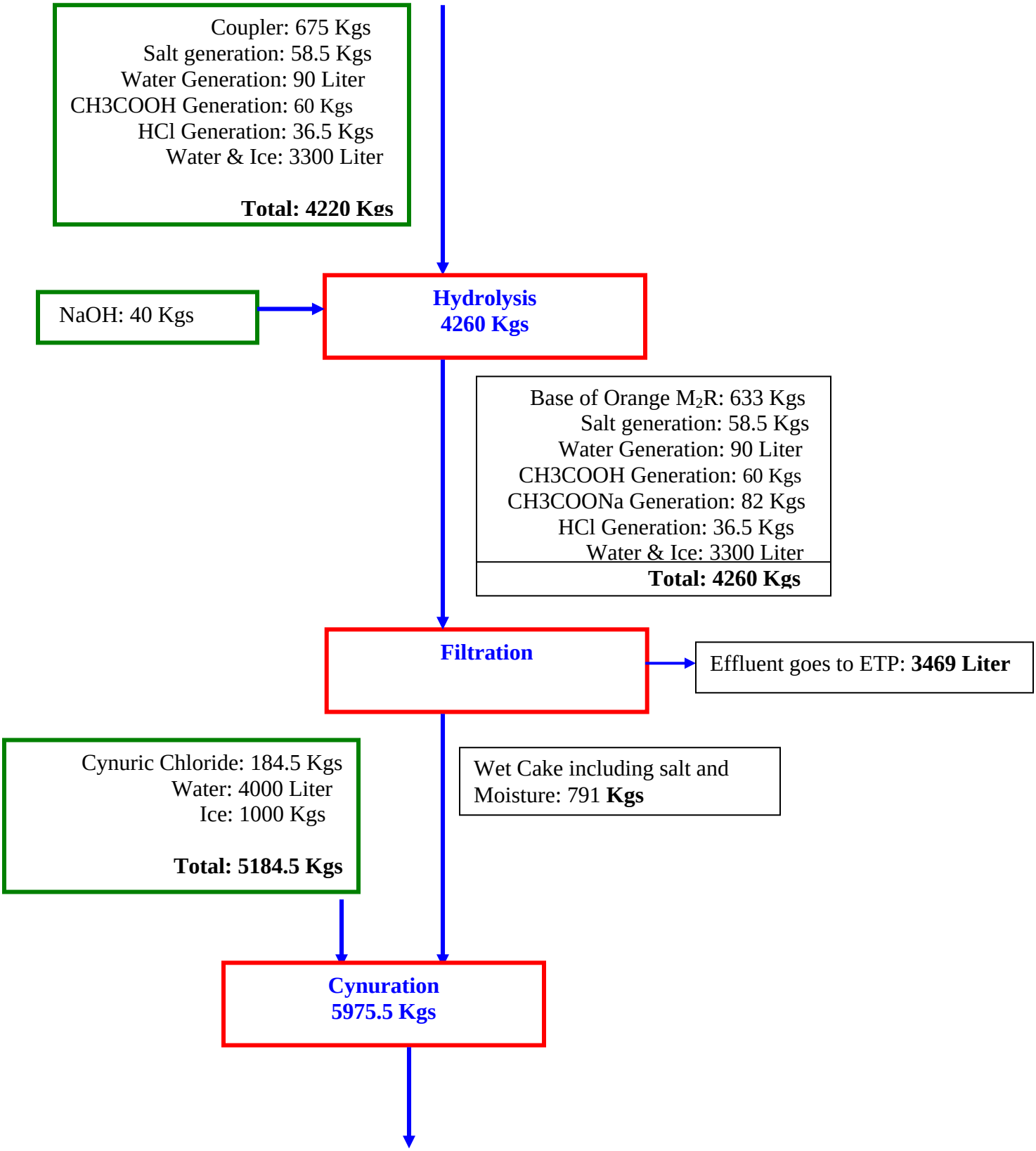
11. REACTIVE ORANGE M_2R

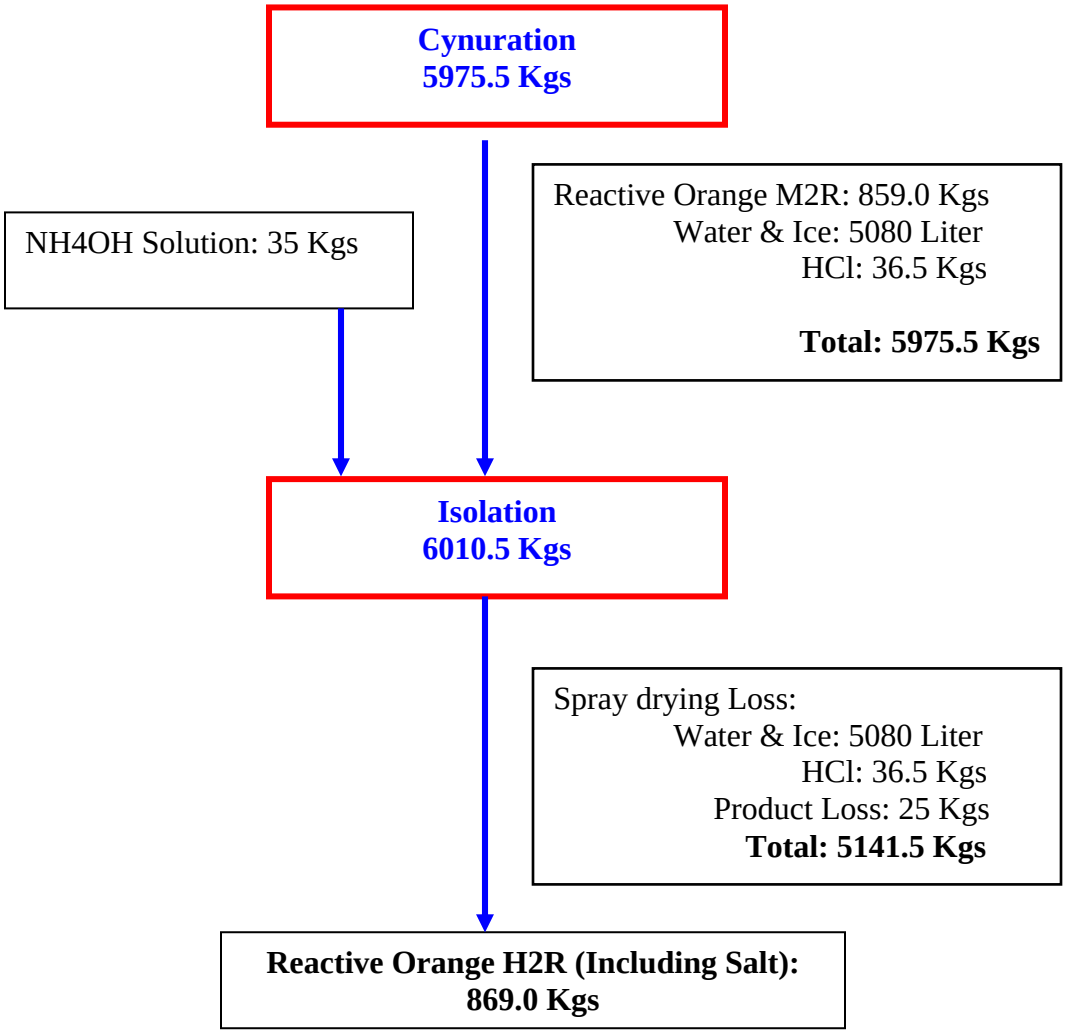



Coupler: 675 Kgs
Salt generation: 58.5 Kgs
Water Generation: 90 Liter
CH3COOH Generation: 60 Kgs
HCl Generation: 36.5 Kgs
Water & Ice: 3300 Liter
Total: 4220 Kgs
NaOH: 40 Kgs
Hydrolysis
4260 Kgs
Base of Orange M2R: 633 Kgs
Salt generation: 58.5 Kgs
Water Generation: 90 Liter
CH3COOH Generation: 60 Kgs
CH3COONa Generation: 82 Kgs
HCl Generation: 36.5 Kgs
Water & Ice: 3300 Liter
Total: 4260 Kgs
Filtration
Effluent goes to ETP: 3469 Liter
Cynuric Chloride: 184.5 Kgs
Water: 4000 Liter
Ice: 1000 Kgs
Total: 5184.5 Kgs
Wet Cake including salt and
Moisture: 791 Kgs
Cynuration
5975.5 Kgs
Spray Drying Loss:
Water & Ice: 5080 Liter
HCl: 36.5 Kgs
Product Loss: 20 Kgs
Reactive Orange M2R (Including Salt):
839.0 Kgs

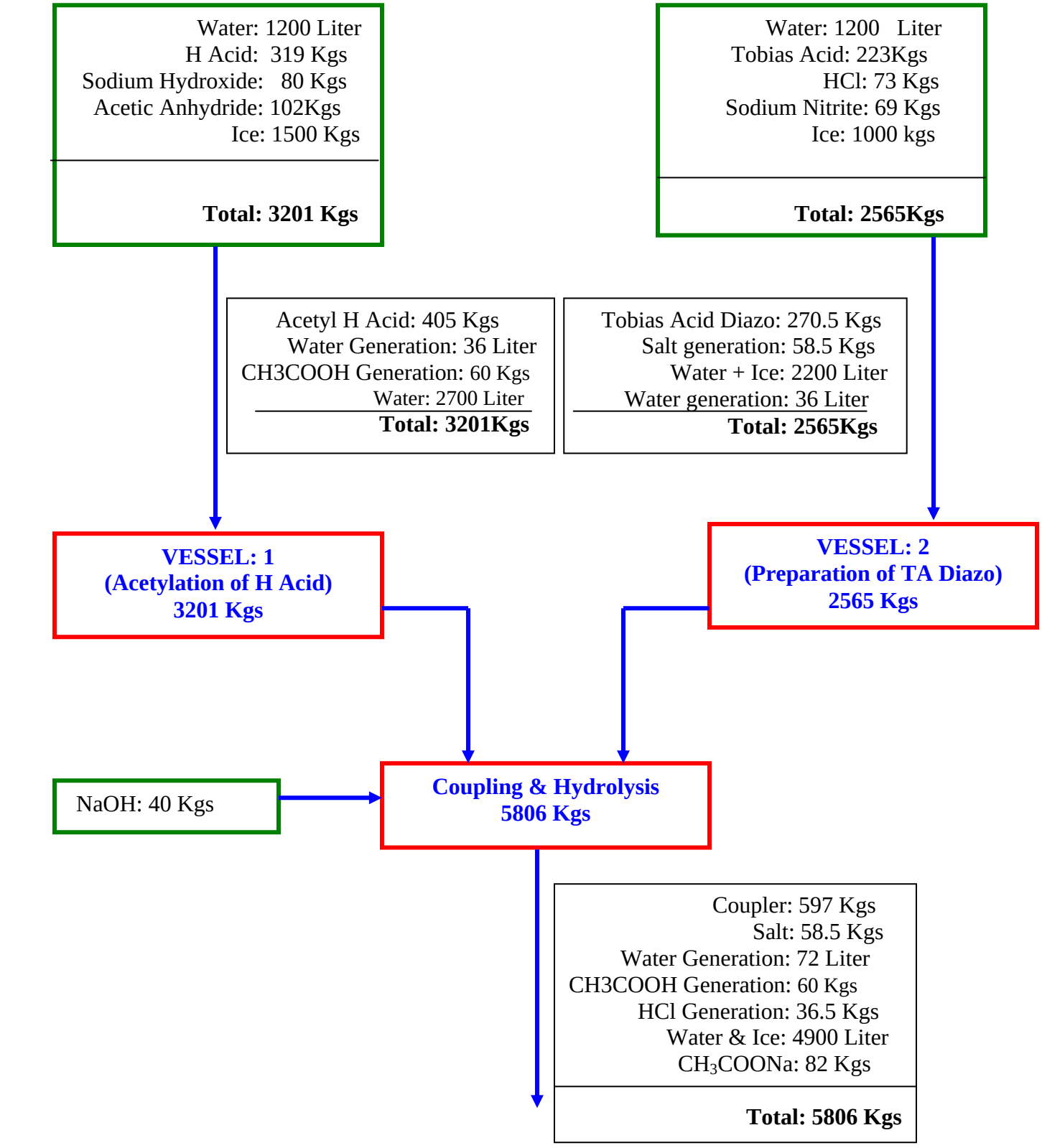
08 REACTIVE ORANGE H_2R

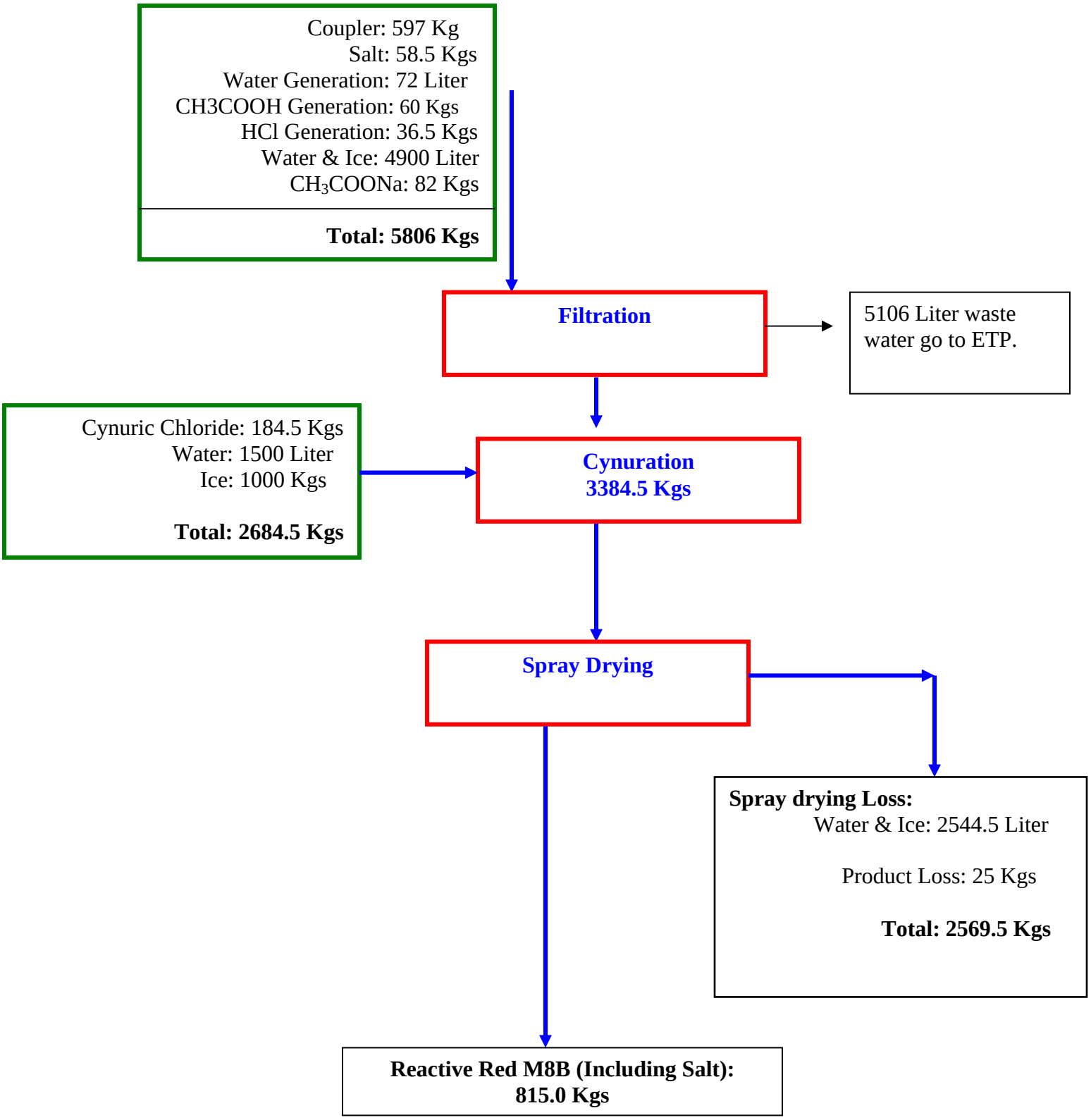



Coupler: 675 Kgs
Salt generation: 58.5 Kgs
Water Generation: 90 Liter
CH3COOH Generation: 60 Kgs
HCl Generation: 36.5 Kgs
Water & Ice: 3300 Liter
Total: 4220 Kgs
NaOH: 40 Kgs
Hydrolysis
4260 Kgs
Base of Orange M2R: 633 Kgs
Salt generation: 58.5 Kgs
Water Generation: 90 Liter
CH3COOH Generation: 60 Kgs
CH3COONa Generation: 82 Kgs
HCl Generation: 36.5 Kgs
Water & Ice: 3300 Liter
Total: 4260 Kgs
Filtration
Effluent goes to ETP: 3469 Liter
Wet Cake including salt and
Moisture: 791 Kgs
Cynuric Chloride: 184.5 Kgs
Water: 4000 Liter
Ice: 1000 Kgs
Total: 5184.5 Kgs
Cynuration
5975.5 Kgs

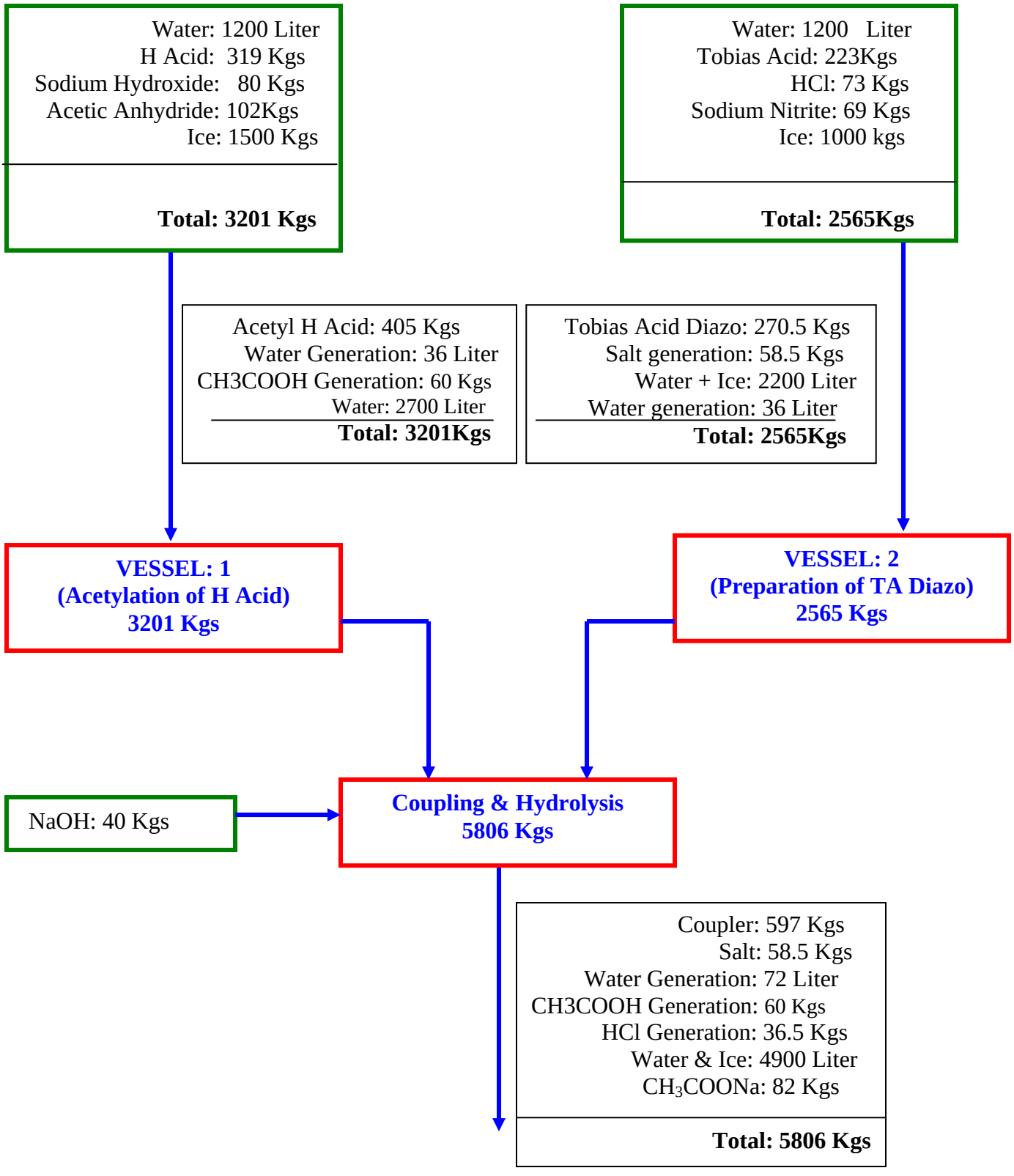

Cynuration
5975.5 Kgs
Reactive Orange M2R: 859.0 Kgs
Water & Ice: 5080 Liter
HCl: 36.5 Kgs
Total: 5975.5 Kgs
NH4OH Solution: 35 Kgs
Isolation
6010.5 Kgs
Spray drying Loss:
Water & Ice: 5080 Liter
HCl: 36.5 Kgs
Product Loss: 25 Kgs
Total: 5141.5 Kgs
Reactive Orange H2R (Including Salt):
869.0 Kgs

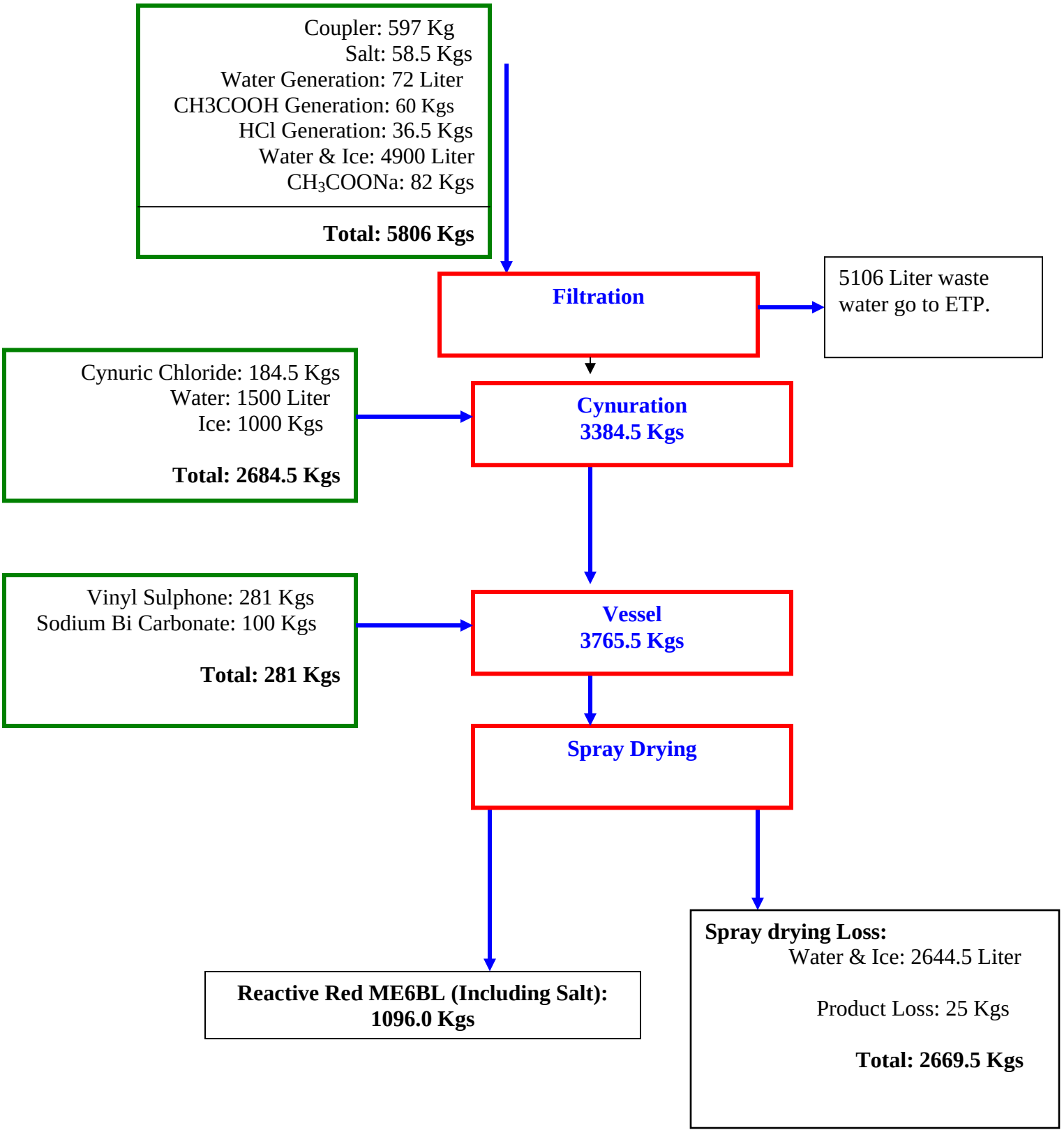
10. REACTIVE RED M8B (RED -11)



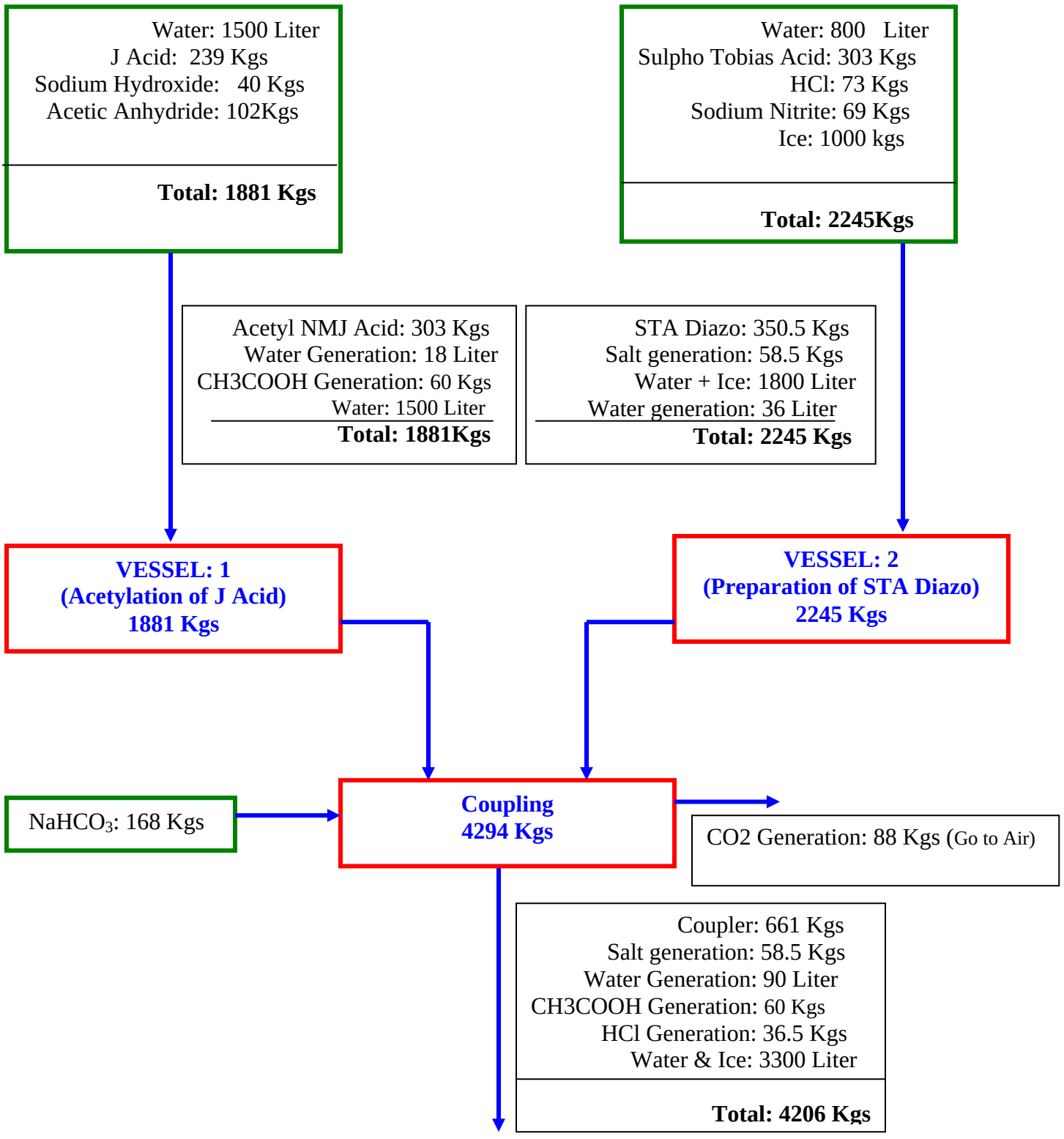

Coupler: 597 Kg
Salt: 58.5 Kgs
Water Generation: 72 Liter
CH3COOH Generation: 60 Kgs
HCl Generation: 36.5 Kgs
Water & Ice: 4900 Liter
CH3COONa: 82 Kgs
Total: 5806 Kgs
Filtration
5106 Liter waste water go to ETP.
Cynuric Chloride: 184.5 Kgs
Water: 1500 Liter
Ice: 1000 Kgs
Total: 2684.5 Kgs
Cynuration
3384.5 Kgs
Spray Drying
Spray drying Loss:
Water & Ice: 2544.5 Liter
Product Loss: 25 Kgs
Total: 2569.5 Kgs
Reactive Red M8B (Including Salt):
815.0 Kgs

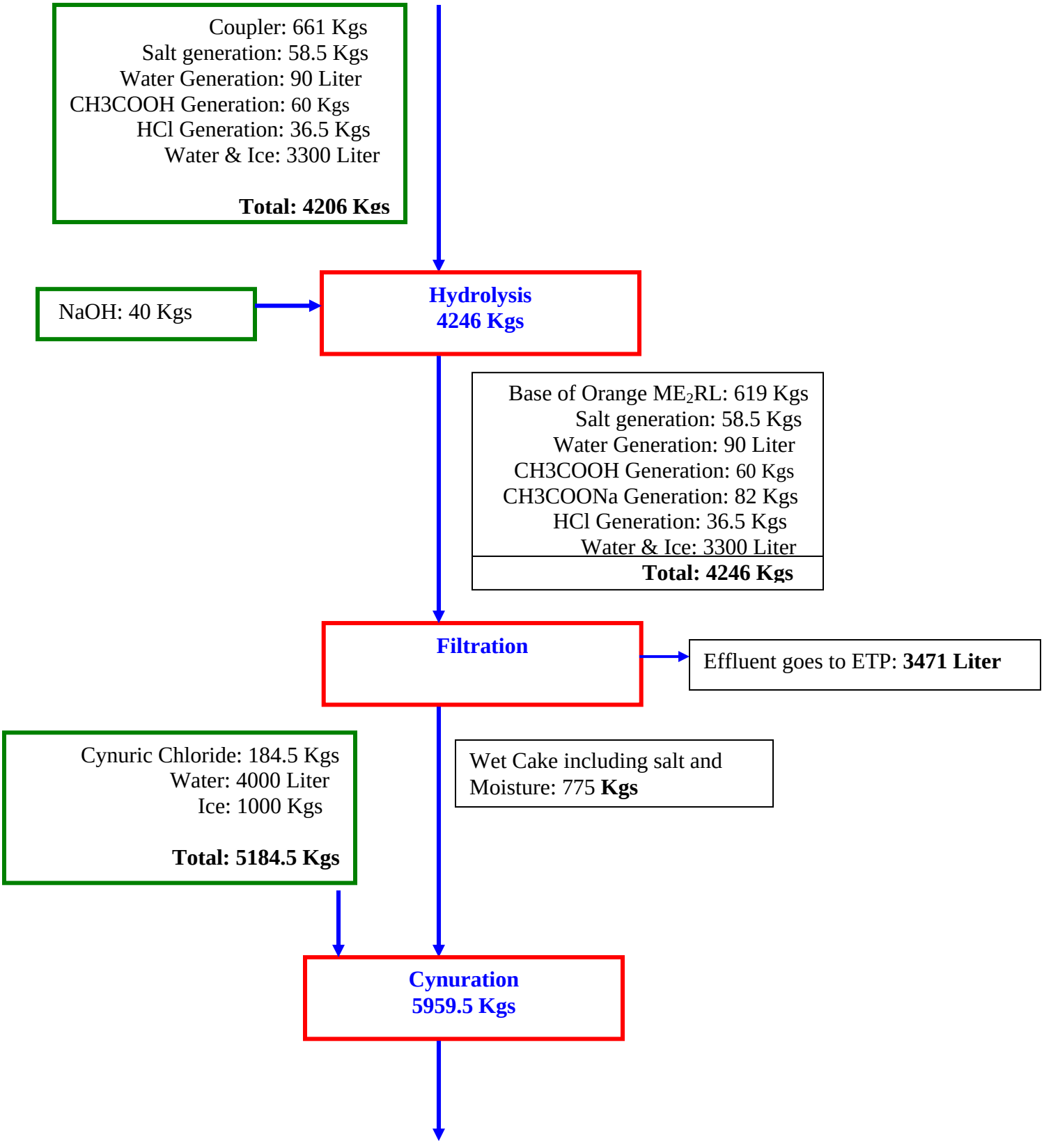
07 REACTIVE RED ME_6BL (RED -250)

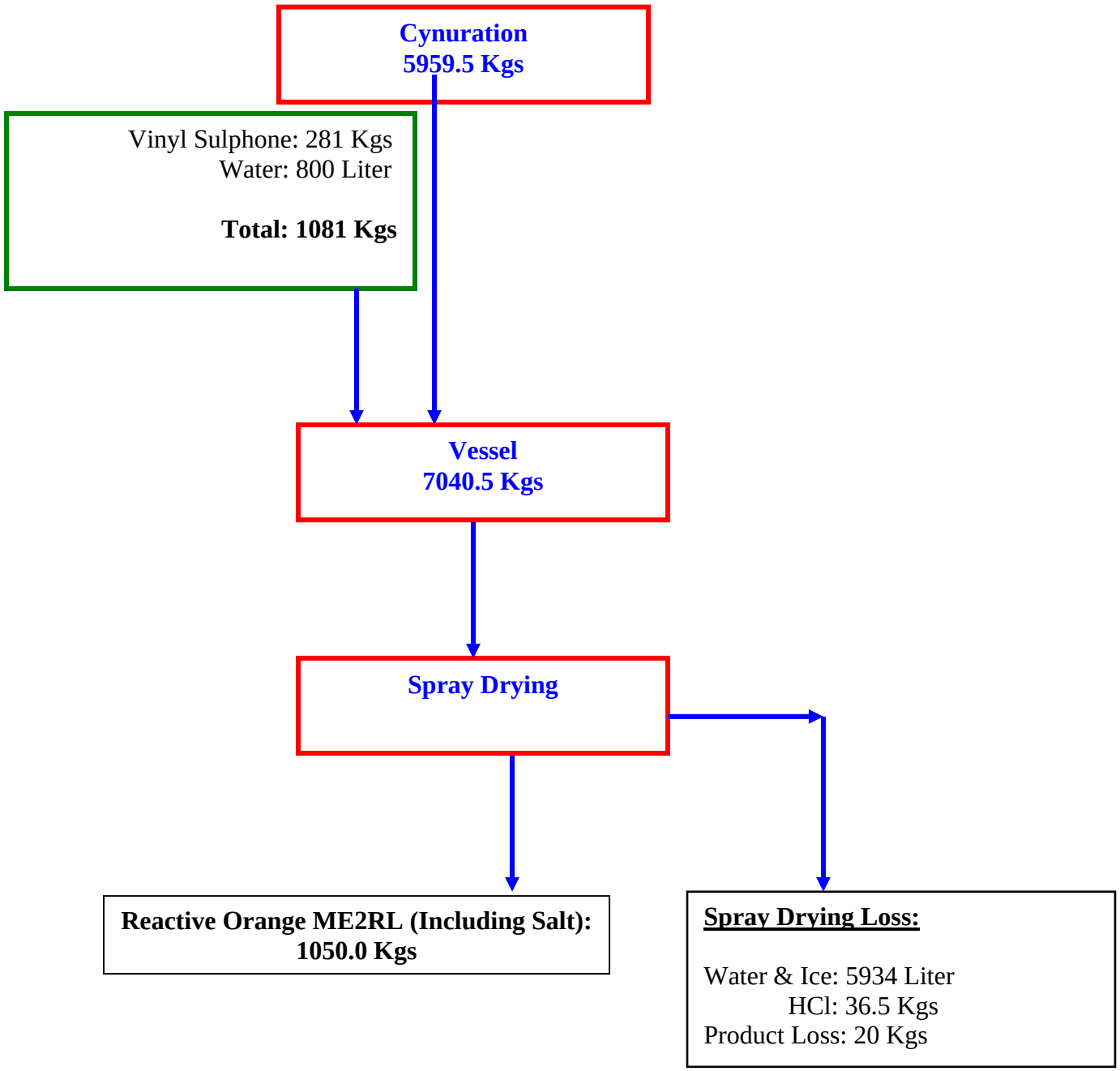



Coupler: 597 Kg
Salt: 58.5 Kgs
Water Generation: 72 Liter
CH3COOH Generation: 60 Kgs
HCl Generation: 36.5 Kgs
Water & Ice: 4900 Liter
CH3COONa: 82 Kgs
Total: 5806 Kgs
Filtration
5106 Liter waste water go to ETP.
Cynuric Chloride: 184.5 Kgs
Water: 1500 Liter
Ice: 1000 Kgs
Total: 2684.5 Kgs
Cynuration
3384.5 Kgs
Vinyl Sulphone: 281 Kgs
Sodium Bi Carbonate: 100 Kgs
Total: 281 Kgs
Vessel
3765.5 Kgs
Spray Drying
Reactive Red ME6BL (Including Salt):
1096.0 Kgs
Spray drying Loss:
Water & Ice: 2644.5 Liter
Product Loss: 25 Kgs
Total: 2669.5 Kgs

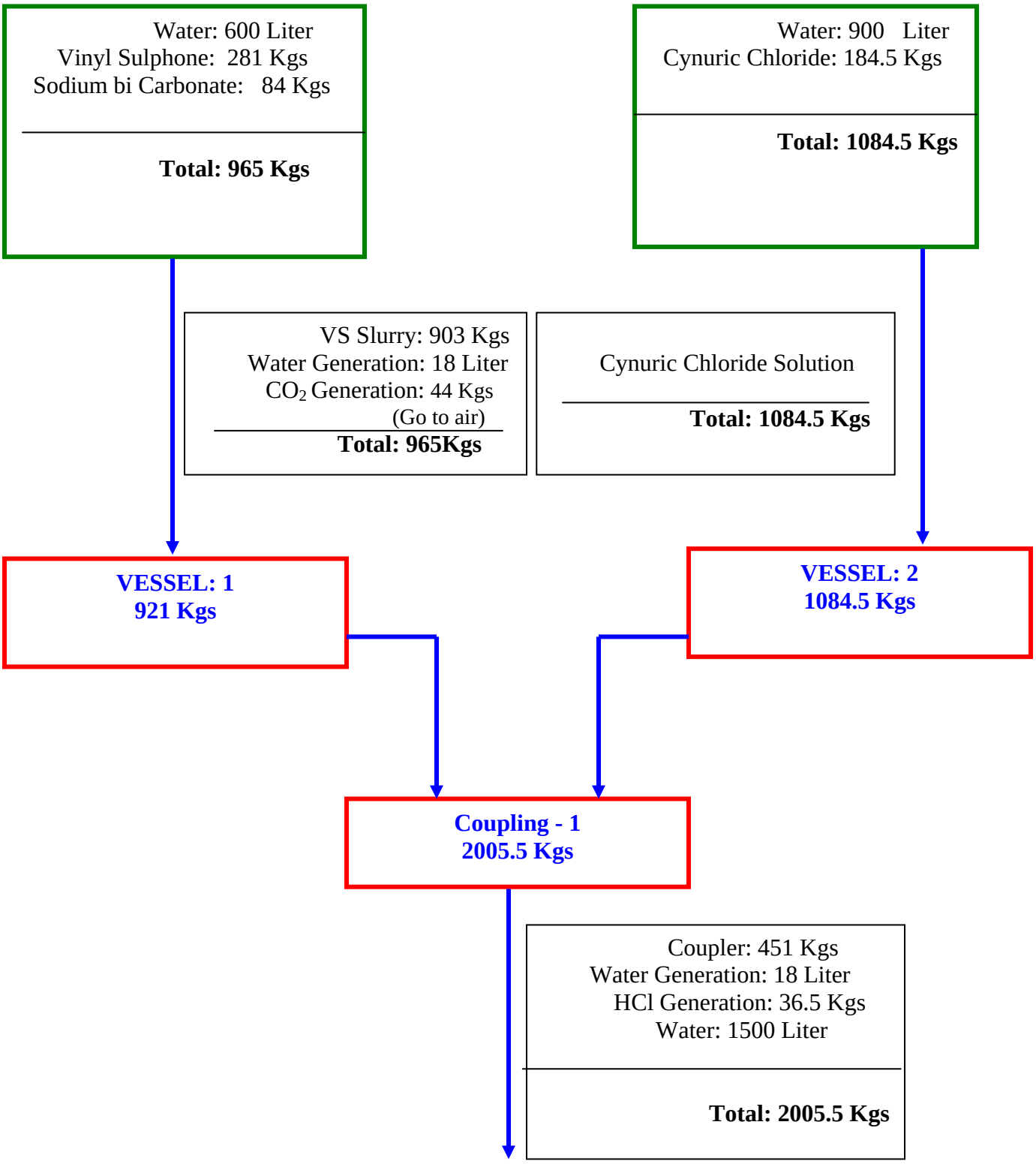
06 REACTIVE ORANGE ME_2RL

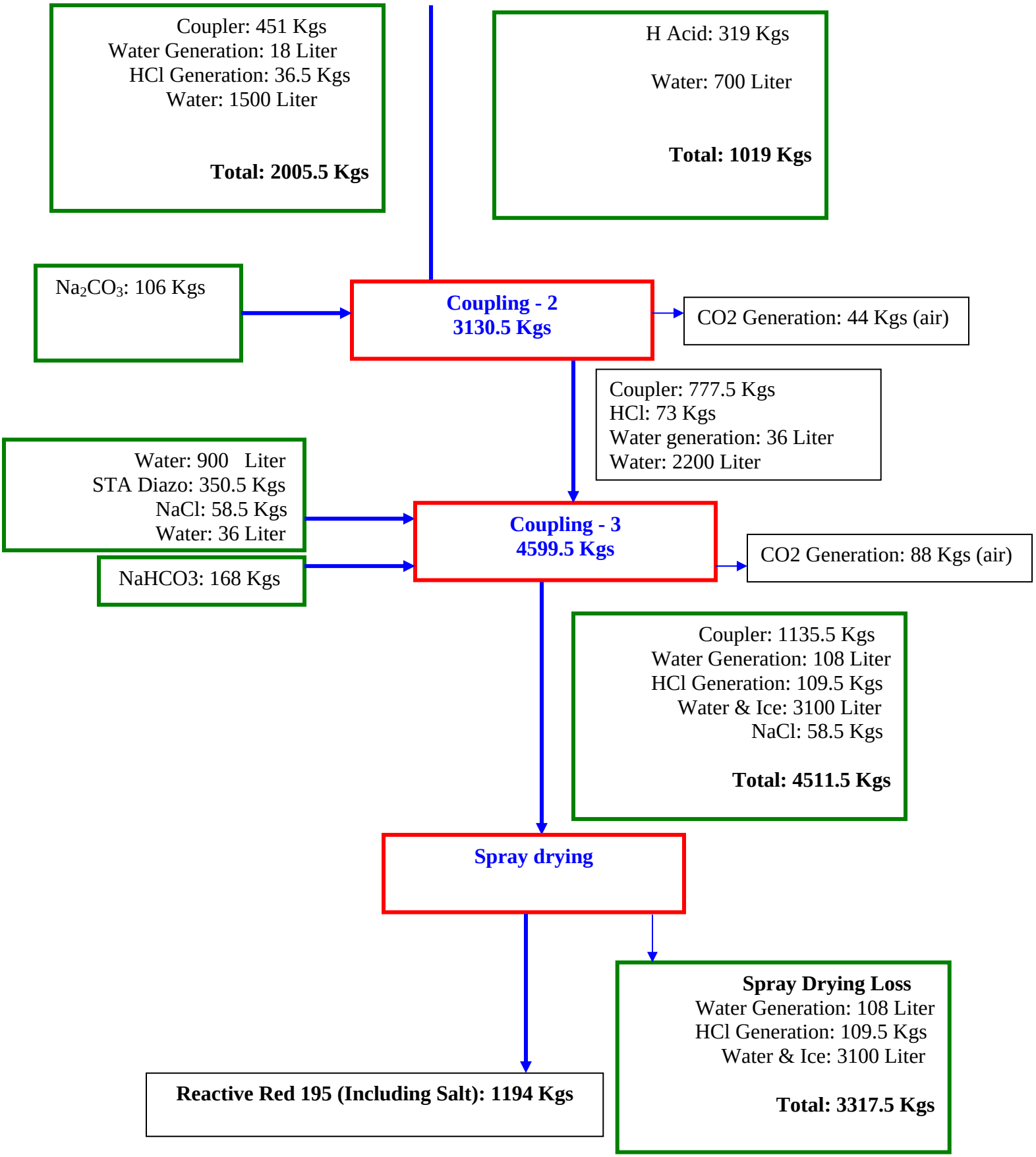



Coupler: 661 Kgs
Salt generation: 58.5 Kgs
Water Generation: 90 Liter
CH3COOH Generation: 60 Kgs
HCl Generation: 36.5 Kgs
Water & Ice: 3300 Liter
Total: 4206 Kgs
NaOH: 40 Kgs
Hydrolysis
4246 Kgs
Base of Orange ME2RL: 619 Kgs
Salt generation: 58.5 Kgs
Water Generation: 90 Liter
CH3COOH Generation: 60 Kgs
CH3COONa Generation: 82 Kgs
HCl Generation: 36.5 Kgs
Water & Ice: 3300 Liter
Total: 4246 Kgs
Filtration
Effluent goes to ETP: 3471 Liter
Wet Cake including salt and
Moisture: 775 Kgs
Cynuric Chloride: 184.5 Kgs
Water: 4000 Liter
Ice: 1000 Kgs
Total: 5184.5 Kgs
Cynuration
5959.5 Kgs

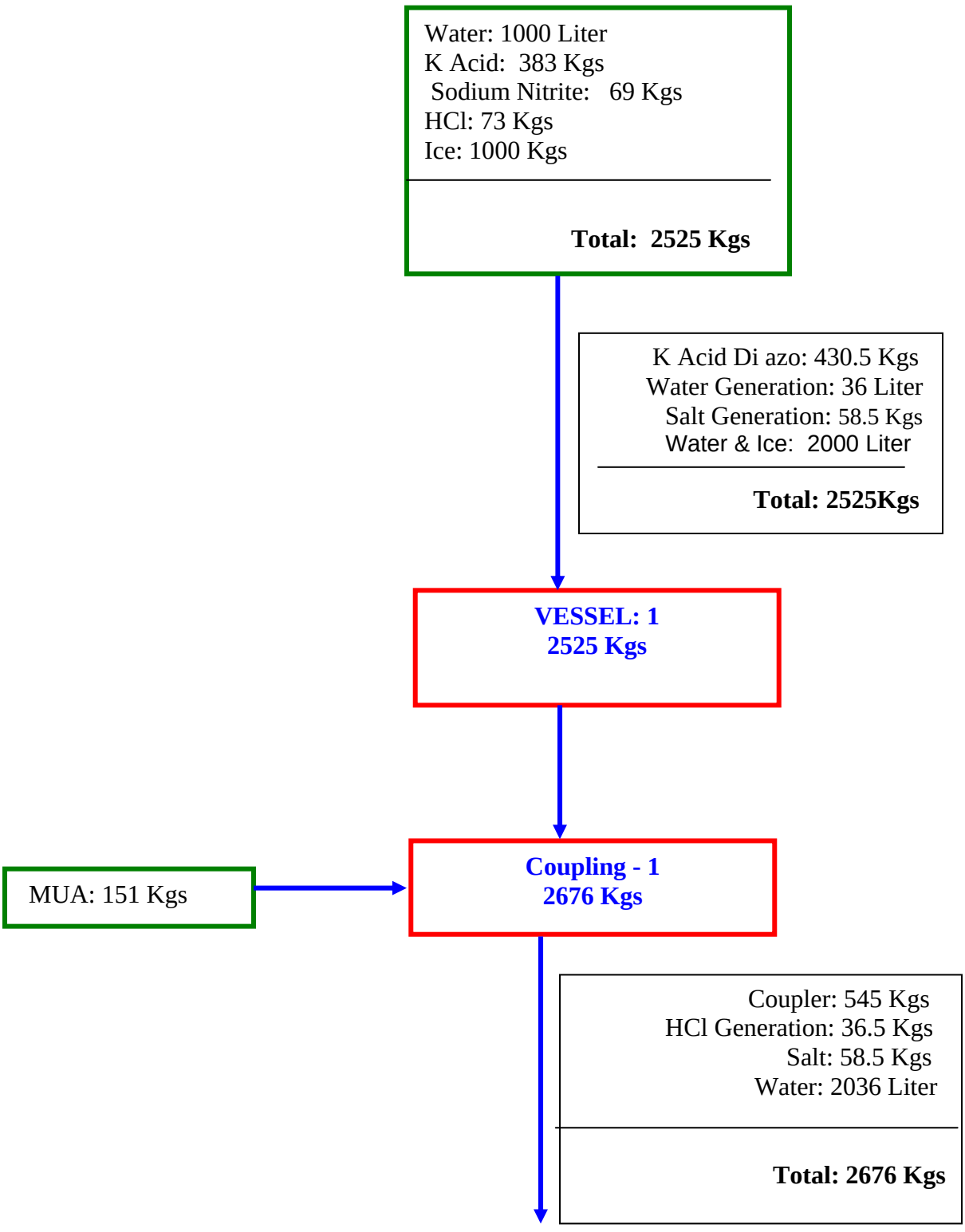

Cynuration
5959.5 Kgs
Vinyl Sulphone: 281 Kgs
Water: 800 Liter
Total: 1081 Kgs
Vessel
7040.5 Kgs
Spray Drying
Reactive Orange ME2RL (Including Salt):
1050.0 Kgs
Spray Drying Loss:
Water & Ice: 5934 Liter
HCl: 36.5 Kgs
Product Loss: 20 Kgs

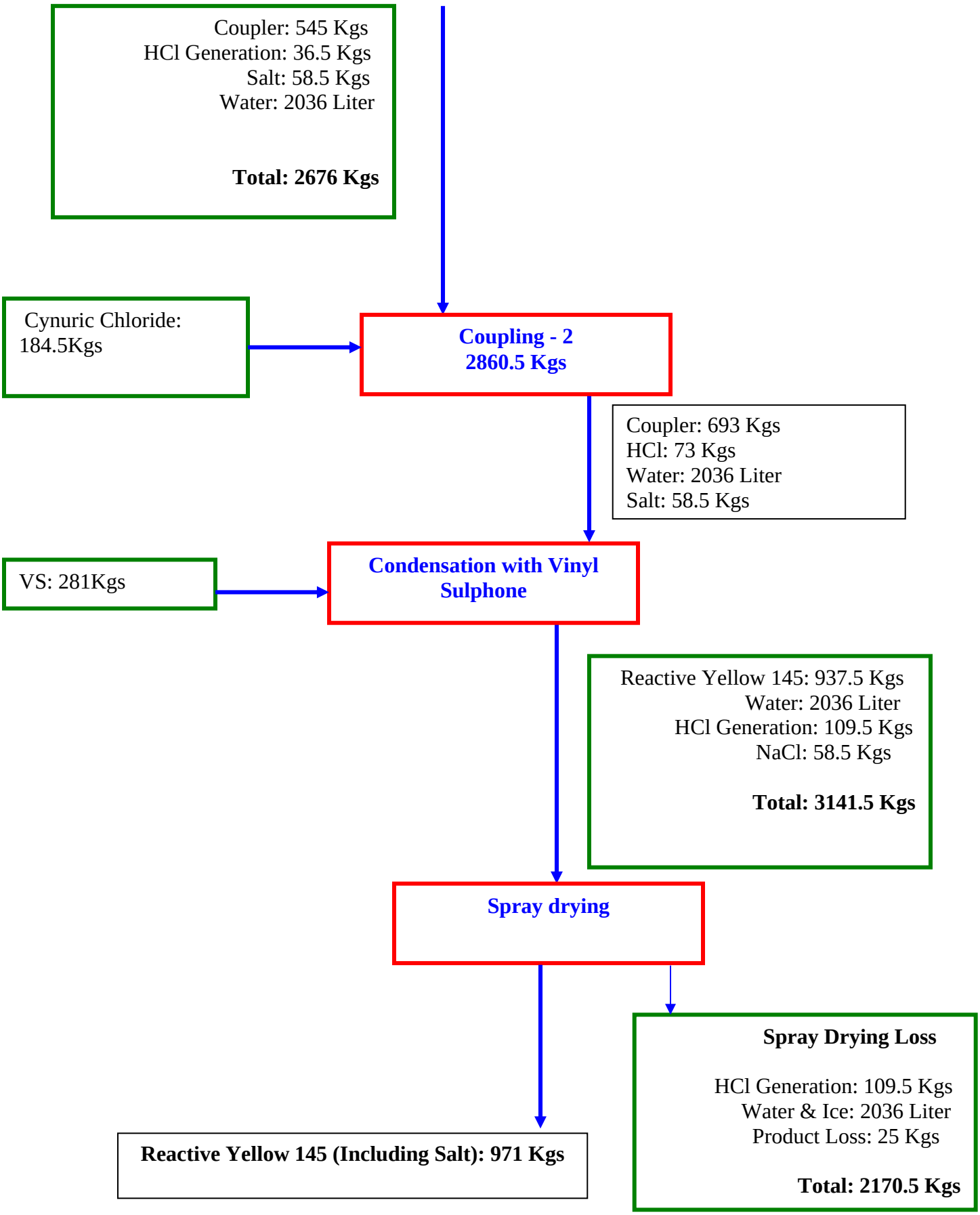
03 REACTIVE RED ME_4BL (RED – 195)



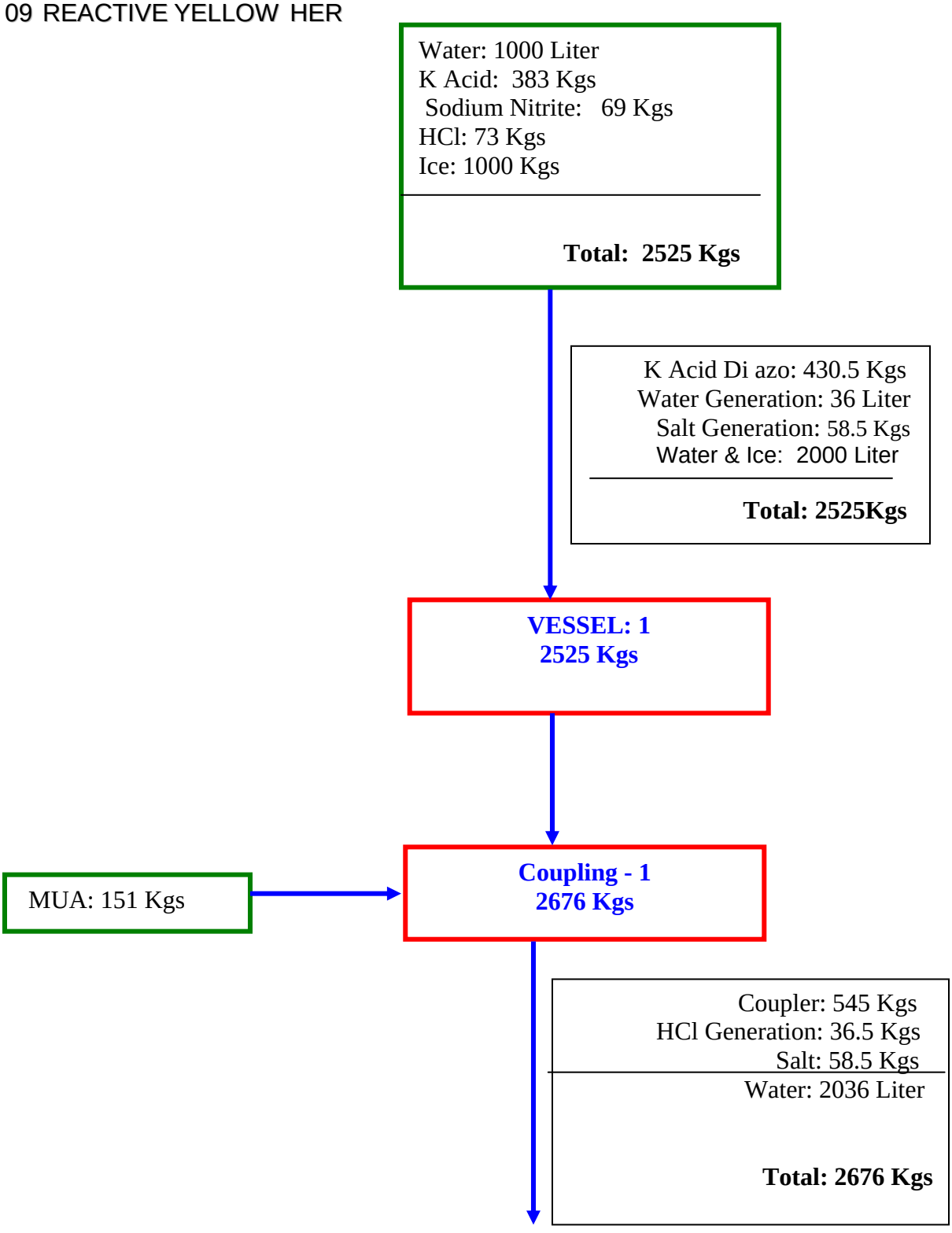

Coupler: 451 Kgs
Water Generation: 18 Liter
HCl Generation: 36.5 Kgs
Water: 1500 Liter
Total: 2005.5 Kgs
H Acid: 319 Kgs
Water: 700 Liter
Total: 1019 Kgs
Na2CO3: 106 Kgs
Coupling - 2
3130.5 Kgs
CO2 Generation: 44 Kgs (air)
Coupler: 777.5 Kgs
HCl: 73 Kgs
Water generation: 36 Liter
Water: 2200 Liter
Water: 900 Liter
STA Diazo: 350.5 Kgs
NaCl: 58.5 Kgs
Water: 36 Liter
NaHCO3: 168 Kgs
Coupling - 3
4599.5 Kgs
CO2 Generation: 88 Kgs (air)
Coupler: 1135.5 Kgs
Water Generation: 108 Liter
HCl Generation: 109.5 Kgs
Water & Ice: 3100 Liter
NaCl: 58.5 Kgs
Total: 4511.5 Kgs
Spray drying
Spray Drying Loss
Water Generation: 108 Liter
HCl Generation: 109.5 Kgs
Water & Ice: 3100 Liter
Total: 3317.5 Kgs
Reactive Red 195 (Including Salt): 1194 Kgs

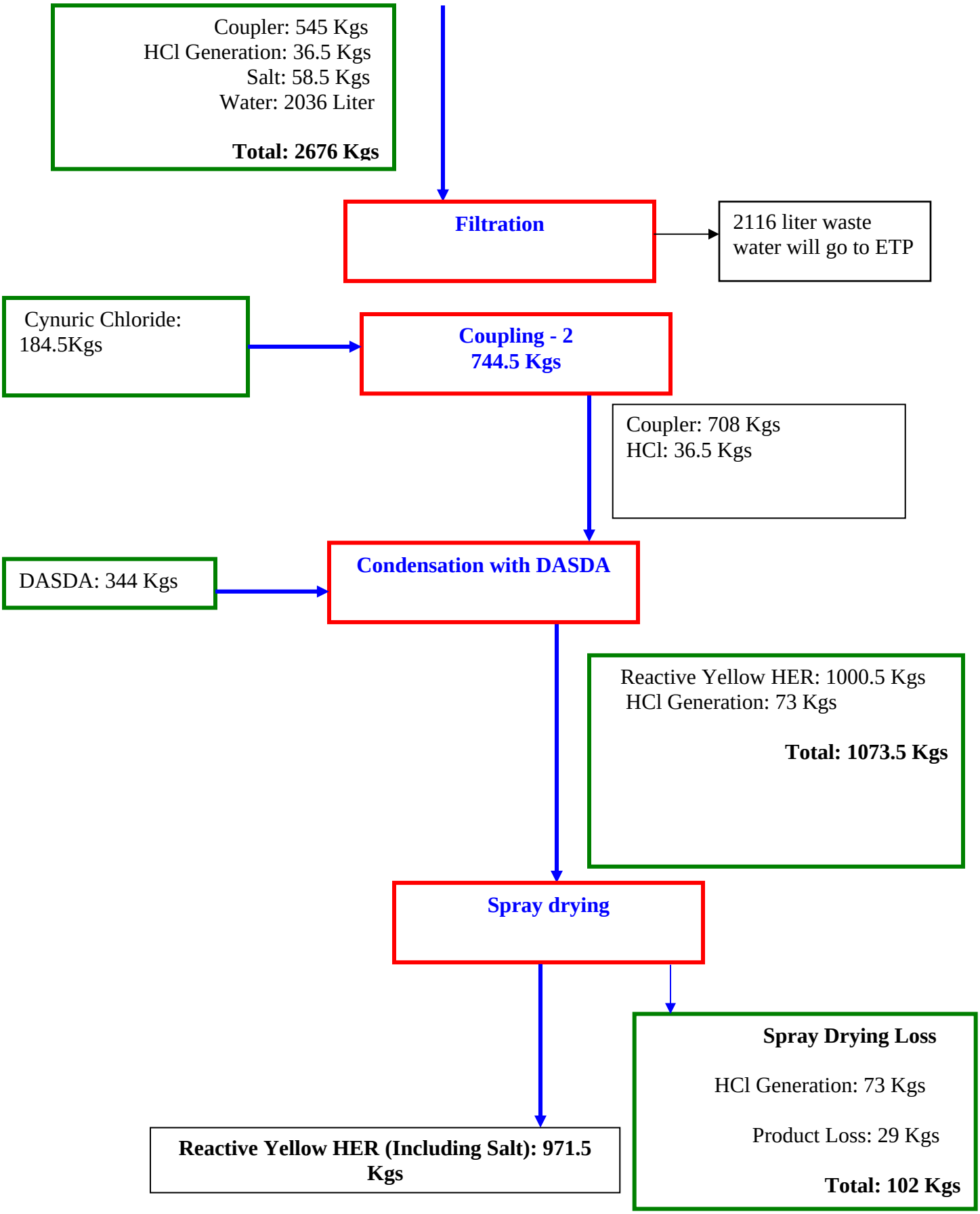
05 REACTIVE YELLOW MERL (YELLOW - 145)



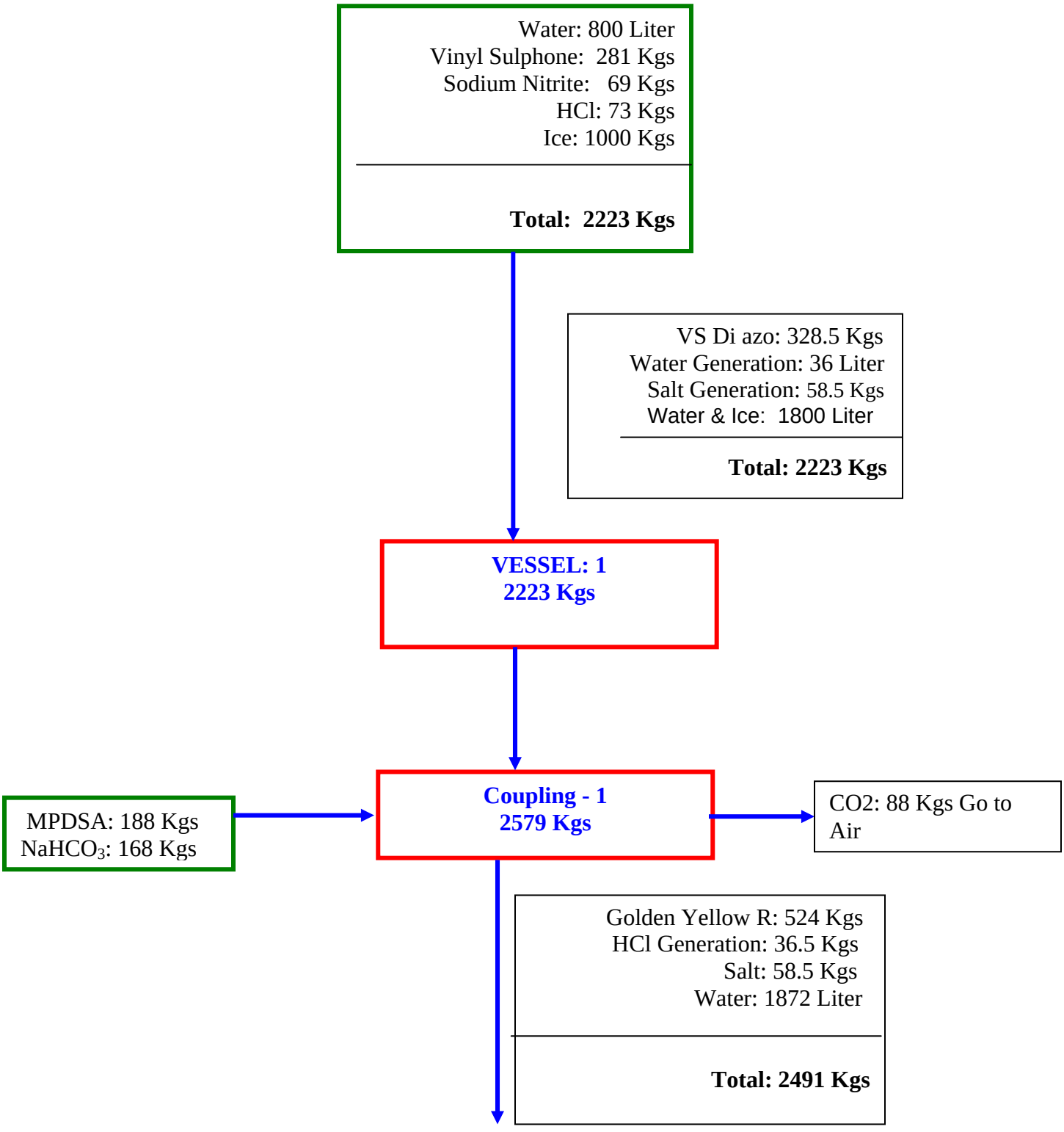

Coupler: 545 Kgs
HCl Generation: 36.5 Kgs
Salt: 58.5 Kgs
Water: 2036 Liter
Total: 2676 Kgs
Cynuric Chloride: 184.5Kgs
Coupling - 2
2860.5 Kgs
Coupler: 693 Kgs
HCl: 73 Kgs
Water: 2036 Liter
Salt: 58.5 Kgs
VS: 281Kgs
Condensation with Vinyl Sulphone
Reactive Yellow 145: 937.5 Kgs
Water: 2036 Liter
HCl Generation: 109.5 Kgs
NaCl: 58.5 Kgs
Total: 3141.5 Kgs
Spray drying
Spray Drying Loss
HCl Generation: 109.5 Kgs
Water & Ice: 2036 Liter
Product Loss: 25 Kgs
Total: 2170.5 Kgs
Reactive Yellow 145 (Including Salt): 971 Kgs

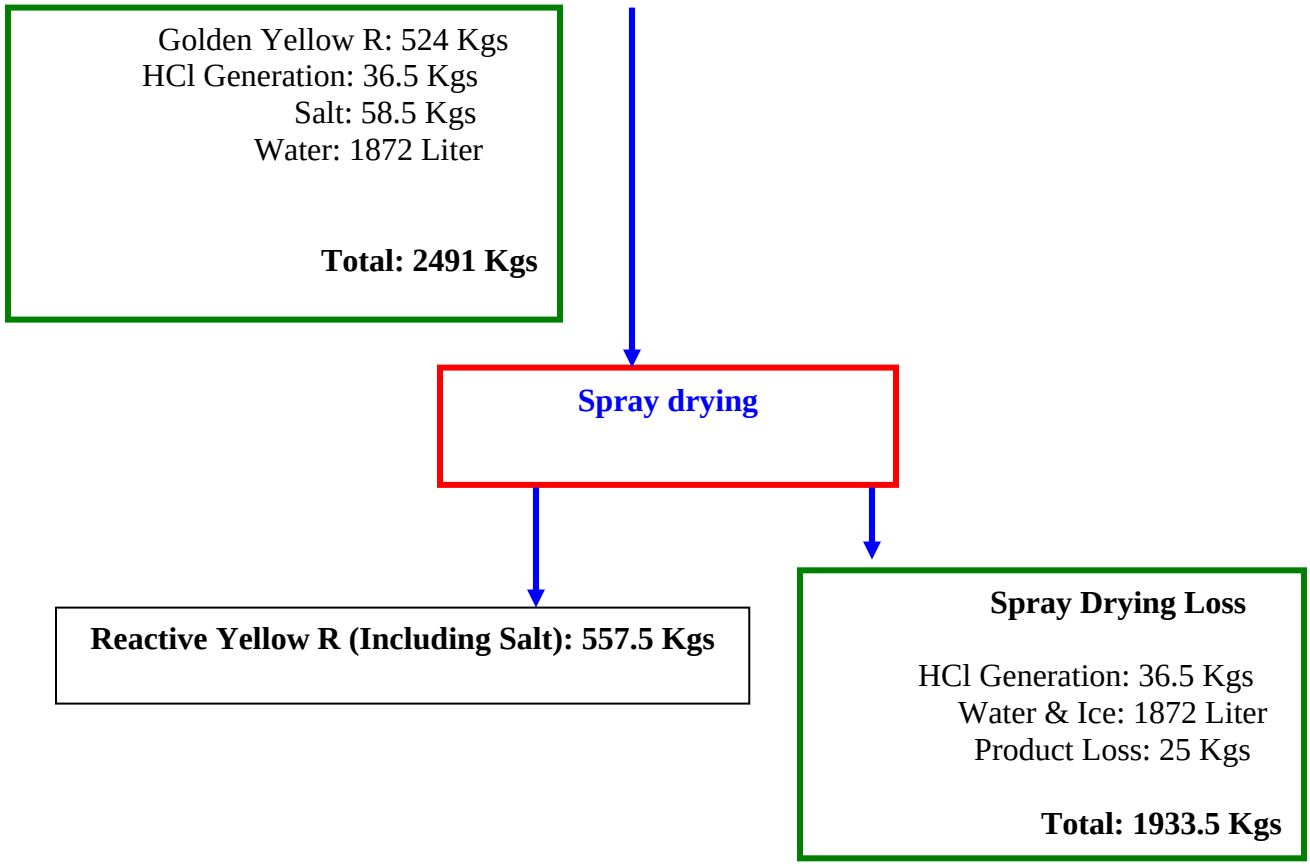
09 REACTIVE YELLOW HER




Coupler: 545 Kgs
HCl Generation: 36.5 Kgs
Salt: 58.5 Kgs
Water: 2036 Liter
Total: 2676 Kgs
Filtration
2116 liter waste water will go to ETP
Cynuric Chloride: 184.5Kgs
Coupling - 2
744.5 Kgs
Coupler: 708 Kgs
HCl: 36.5 Kgs
DASDA: 344 Kgs
Condensation with DASDA
Reactive Yellow HER: 1000.5 Kgs
HCl Generation: 73 Kgs
Total: 1073.5 Kgs
Spray drying
Spray Drying Loss
HCl Generation: 73 Kgs
Product Loss: 29 Kgs
Total: 102 Kgs
Reactive Yellow HER (Including Salt): 971.5 Kgs

04 REACTIVE YELLOW R





For, Associated Chemicals Pvt. Ltd.

Director

ASSOCIATED DYESTUFF PVT. LTD

S.NO:466/2, VILLAGE: DUDHWADA, TA: PADRA, DIST: VADODARA

Enclosure: 11

Details of Water Consumption & Wastewater generation.

Water Consumption (KL/Day)		Waste Water generation (KL/Day)	
Domestic	5	**Domestic**	4
Industrial		**Industrial**	
Process & Scrubber	790	Process & Scrubber	594
Washing	50	Washing	50
Boiler	100	Boiler	10
Cooling Make up	50	Cooling	5
Gardening & Plantation	50	Gardening & Plantation	--
Total water Consumption **[A]**	**1045**	**Total [A]**	**663**
Ice Consumption **[B]**	**247**	Spent Acid Generation [B]	435
		By product Generation [C]	96
Spent Acid Consumption **[C]**	**217**		
Total [A] + [B]	**1509**	**Total [A +B+ C]**	**1194**

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Overall water Balance only for Process: Unit is in KL /Day

Sr. No.	Name of Product	Water Consumption	Ice Consumption	Spent Acid Consumption	Waste water generation	By - Product	Spent Acid Generation
1.	Vinyl Sulphone	34.47	47.00	2.55	40.58	12.38	57.14
2.	CPC	87.60	--	47.60	52.36	28.60	72.40
3.	Alpha Blue	252.60	--	---	160.00	16.4	151.0
4.	Beta Blue	220.00	--	---	200.00	--	---
5.	CPC Green 7	34.00	---	---	21.00	9.6 3.5	---
6.	Dyes	102.0	68.00	---	120.00	--	---
7	Direct Blue 86	60.0	132.0	---	---	25	154
8	Direct Blue 199						
9	Reactive Blue 21						
10	Reactive Blue 25						
11	Reactive Blue 72						
	Total	**790.67**	**247.00**	**50.15**	**593.94**	**70.48**	**434.54**

ASSOCIATED DYESTUFF PVT. LTD

S.NO:466/2, VILLAGE: DUDHWADA, TA: PADRA, DIST: VADODARA

HCl as By Product	96.00
Ammonium Carbamate	28.60
$NH_4 SO_4$	16.4
NaOCl	3.5

Water Consumption	790.67
Ice Consumption	247.00
Total	**1037.67**

Spent Acid Generation	434.54
Spent Acid Consumption	217
Spent Acid - Balance	**217.54**

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ASSOCIATED DYESTUFF PVT. LTD

S.NO:466/2, VILLAGE: DUDHWADA, TA: PADRA, DIST: VADODARA

WASTEWATER MANAGEMENT

- For the proposed manufacturing activity the total water consumption will be 1045 KL /Day.

- From that we will get 601 KL /Day treated effluent from Nano Filtration. So, the required fresh water consumption will be 444 KL /Day.

- The low concentrated stream will be 597 KL /Day. That will be treated in proposed effluent Treatment Plant consisting of primary, secondary and tertiary units.

- After treated in ETP, the treated effluent sent to Nano Filtration. The input quantity of Nano Filtration will be 411 Kl /Day.

- The NF rejected will be sent to MEE. The input quantity of MEE will be 238 KL/Day.

- From that the quantity of condensate water will be 190 KL /Day and Evaporation Residue will be 48 KL /Day.

- That Evaporation Residue will be sent to centrifuge. From that ~ 9.6 KL ML generated and that will be incinerated. The sludge will be `~ 38.4 MT.

ASSOCIATED DYESTUFF PVT. LTD

S.NO:466/2, VILLAGE: DUDHWADA, TA: PADRA, DIST: VADODARA

ASSOCIATED DYESTUFF PVT. LTD

S.NO:466/2, VILLAGE: DUDHWADA, TA: PADRA, DIST: VADODARA

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S.NO:466/2, VILLAGE: DUDHWADA, TA: PADRA, DIST: VADODARA

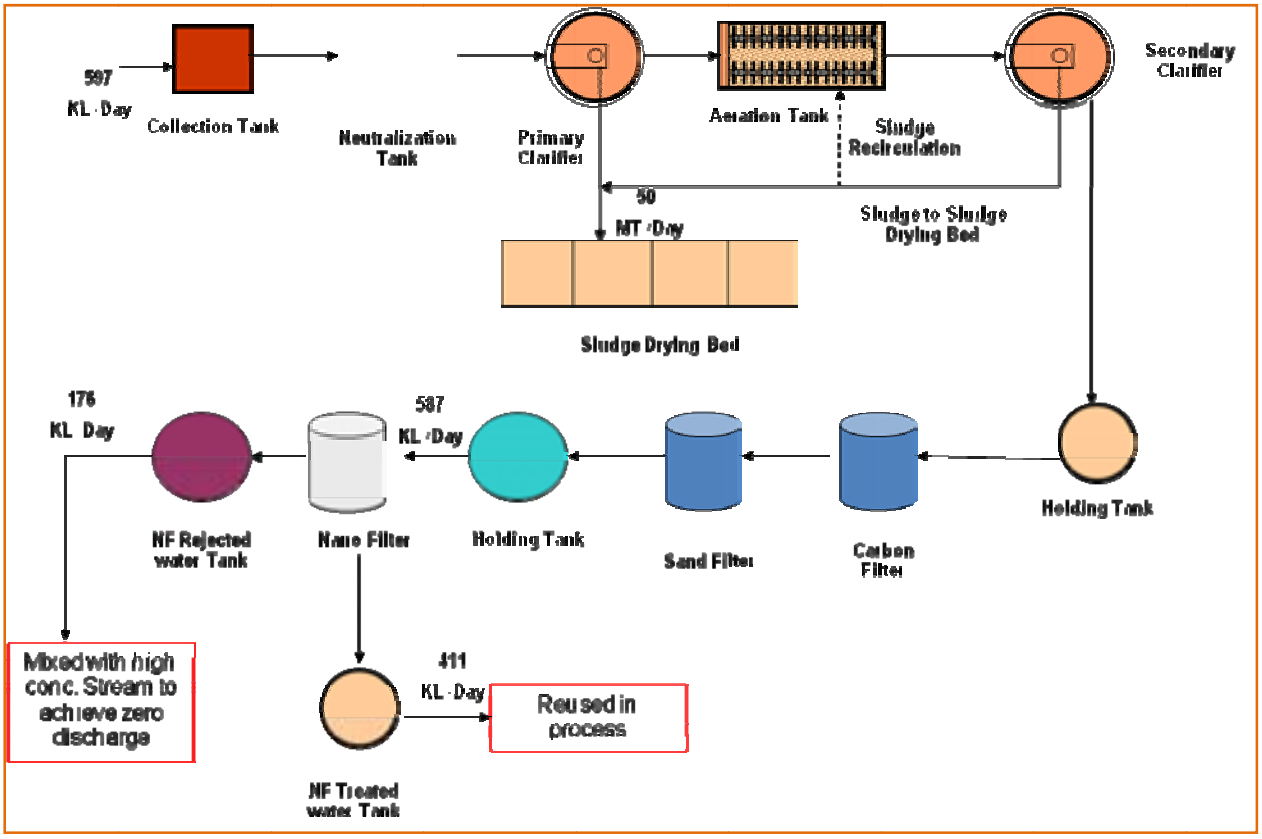
Enclosure: 12

Details of Effluent Treatment Plant

Details of Effluent Treatment Plant Units for Low Conc. Effluent

Sr. No.	Name of Unit	No.	Size in m	Volume in m^3	Retention Time in Hr
1	Collection Tank for Low Concentrated Effluent	01	5.5m x 5.5m x 2.5m (LD)	75	2
2	Equalization & Neutralization Tank	01	14m x 14m x 3.0m (LD), 2 compartments	1200 (total)	48 h
3	Flash mixer	01	1.2m dia x 1.2 m (LD)	1	0.033
4	Flocculator	01	3m dia x 2 m LD	15	0.5
5	Primary Clarifier	01	6.7m dia x 2.5m (SWD)	88	3.5
6	Aeration Tank	01	26.7m dia x 4.0m (LD)	2240	89.6
7	Secondary Clarifier	01	9.5m dia x 3.0m (SWD)	212	8.5
8	Holding Tank	01	5.0m dia x 2.5m (LD)	50	2
9	Carbon Filter	01	2m dia x 4m depth, 4 no.	---	--
10	Sand Filter	01	3m dia x 2m depth, 2 no.	---	--
11	Holding Tank.	01	5.0m dia x 2.5m (LD)	50	2
12	Nano Filter	01	--	600 KL	--
13	Filtrated Storage tank	01	--	450 KL	--
14	NF Rejected Storage Tank	01	--	200 KL	--
15	Sludge Drying Beds	10	8 m X 5m	--	--

Fig. 2.3: Effluent Treatment Plant Diagram for Low Conc. Effluent



For, Associated Dyestuff Pvt. Ltd.

Director

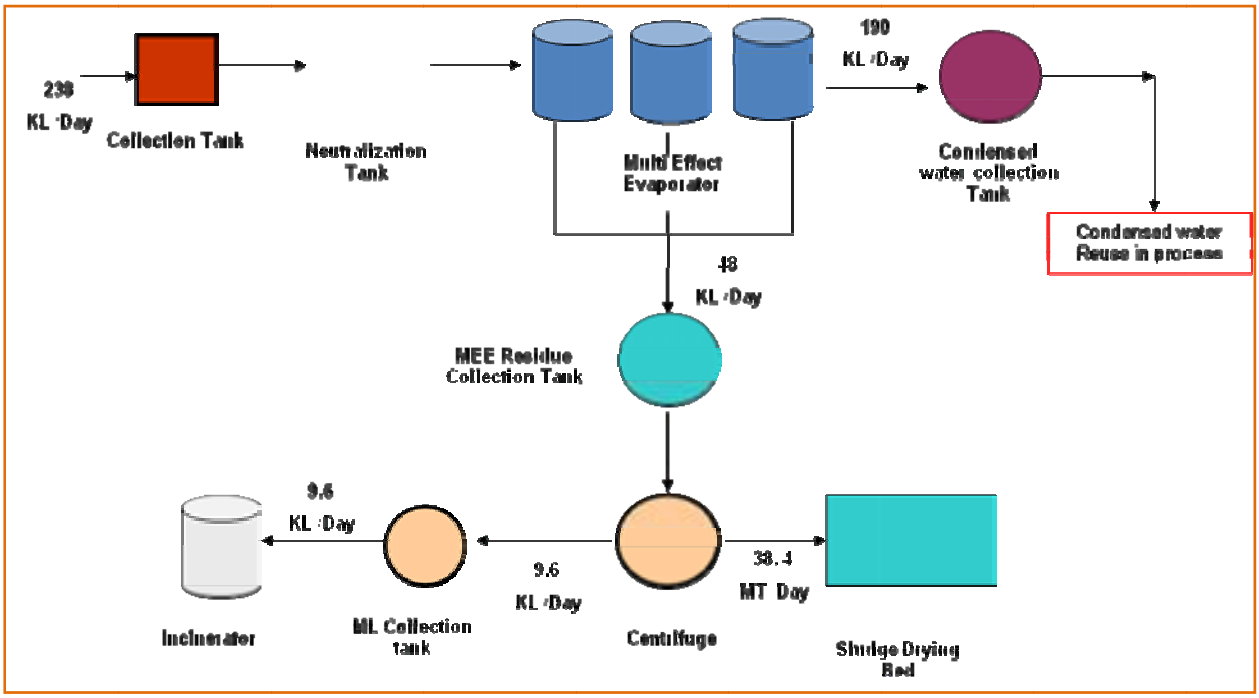
ASSOCIATED DYESTUFF PVT. LTD

S.NO:466/2, VILLAGE: DUDHWADA, TA: PADRA, DIST: VADODARA

Details of Effluent Treatment Plant Units for High Conc. Effluent

Sr. No.	Name of Unit	No.	Size in m	Volume in m^3	Retention Time in Hr
1	Collection Tank for High Concentrated Effluent	01	5.5m x 5.5m x 2.5m (LD)	75 KL	7.5
2	Neutralization Tank	01	5.5m x 5.5m x 2.5m (LD)	75 KL	7.5
3	Multi Effect Evaporator	01	15 KL /Hr	250 KL	---
4	Condensed Water Storage Tank	01	7.5m x 5.5m x 2.5m (LD)	100 KL	10
5	MEE Residue Storage Tank	01	3.5m x 5.5m x 2.5m (LD)	48 KL	--
6	Centrifuge	01	---	--	--
7	Collection Tank	01	2.5m x 2.5m x 2.5m (LD)	15 KL	--
8	Incinerator	01	1000 Liter /Hr	11 KL	--

Fig. 2.4: Effluent Treatment Plant Diagram for High Conc. Effluent



For, Associated Dyestuff Pvt. Ltd.

Director

Enclosure: 13

Details of Flue Gas Emission & process Gas Emission with APC system

Type of Flue Gas Emission:-

No.	Stack attached To	Stack Height In Meter	APC System	Pollutants		
				SPM Mg/NM^3	SO_2 ppm	NOX ppm
1.	Boiler	33	Multi Cyclone Dust collector and Bag Filter	< 150 mg/NM^3	< 100 ppm	< 50 ppm
2.	Hot air Generator	33	Multi Cyclone Dust collector and Bag Filter	< 150 mg/NM^3	< 100 ppm	< 50 ppm
3.	Incinerator	33	Quenching followed by ventury scrubber followed by Spray Tower	< 150 mg/NM^3	< 100 ppm	< 50 ppm
4.	DG Set	11	---	< 150 mg/NM^3	< 100 ppm	< 50 ppm

ASSOCIATED DYESTUFF PVT. LTD

S.NO:466/2, VILLAGE: DUDHWADA, TA: PADRA, DIST: VADODARA

Fuel Details:

Sr.No	Name of Fuel	Proposed
1	Natural Gas Or LDO/FO	1500 SCM/Hr 0R500 Liter/Hr

Type of Process Gas Emission:-

No.	Stack attached To	APCD System	Stack Height	Pollutants
1.	Reaction vessel	Three Stage Scrubber system	11 m	HCl <= 20 mg/NM^3
2	Reaction vessel	Three Stage Scrubber system	11 m	NH_3 <= 175 mg/NM^3
3	Reaction vessel	Three Stage Scrubber system	11 m	SO_2 <= 40 mg/NM^3
4	Spray Dryer	cyclone separator followed by water scrubber	11 m	SPM< = 150 mg/NM^3

ASSOCIATED DYESTUFF PVT. LTD

S.NO:466/2, VILLAGE: DUDHWADA, TA: PADRA, DIST: VADODARA

Enclosure: 14

Details of Hazardous Waste generation with its Management

DETAILS OF HAZARDOUS WASTES

No.	Type of Waste with Category No.	Qty.	Source of Generation	Collection	Treatment	Storage	Disposal/ Management
1.	ETP Waste/ Evaporation Residue (Cat. No.: 34.3)	50 MT/M	Effluent Treatment Plant	Manual for less quantity & By pump for high quantity	Solar Drying	Packed into HDPE Bags, store into storage area	**Dispose** to **TSDF** Site.
2	Incinerator Ash	5 Mt /M	Incinerator				
3.	Centrifuge waste	960 MT /M	Centrifuge				
4	Spent Oil/Used Oil (Cat. No.: 5.1)	50 L/Yr	Plant Machineries	Manual	-	Separate store into SWSA after filling into drums.	Used Oil will be reused as a lubricant in plant machineries. Spent oil sell to authorized recycler.
5	Discarded Containers (Bag, Barrel, Drum) (Cat. No.: 33.3)	25000 – 30000 Nos. /M	Production Section	Manual	Washing & Drying	Separate store into SWSA.	Return back to raw material supplier or used for packing of ETP waste.

ASSOCIATED DYESTUFF PVT. LTD

S.NO:466/2, VILLAGE: DUDHWADA, TA: PADRA, DIST: VADODARA

Enclosure: 15

Pre – Feasibility Reporty

PRE FEASIBILITY REPORT

For

PROPOSED

MANUFACTURING PLANT

Of

M/S. ASSOCIATED DYESTUFF PVT.LTD

S.NO.466/2,DUDHWADA VILLAGE ,

TA-PADARA,DIST-VADODARA,GUJARAT

CONTENTS

1.0 EXECUTIVE SUMMARY

1.1 Company Profile

Introduction

Associated Dyestuff is promoted by Viralbhai Shah

1.2 Project Details

Name of product with its quantity

Sr. No.	Name of Product	Quantity in MT / M.
1.	Vinyl Sulphone	500
2.	CPC	500
3.	Alpha Blue	200
4.	Beta Blue	200
5.	CPC Green 7	200
6.	Dyes	800
7.	Direct Turquoise Blue 86	600
8.	Direct Turquoise Blue FBL -199	
9.	Reactive Blue G	
10.	Reactive Turquoise Blue H5G	
11.	Reactive Blue 72	
	[A]	**3000**

Name of by-product with its quantity

Sr. No.	Name of By Product	Quantity in MT / Day.
1	Hydrochloric Acid	47
2	Ammonium Sulphate	16.4
3	Spent Sulphuric Acid	434
4	Ammonium Carbamate	28.60
5	NaOCl	3.5

1.3 Green Belt Development

Company shall develop an effective green belt within the factory and on periphery of the factory. In addition to this, majority of the vacant land shall be planted with trees, shrubs and grasses.

1.4 Power & Fuel Requirement

Energy:
Source of power is Madhya Gujarat Vij Co. Ltd.

Fuel:

Sr.No	Name of Fuel	Quantity
1	Natural Gas or LDO/FO	1500 SCM/Hr or500 Liter/Hr

1.5 Water Requirement and Wastewater Generation & Treatment

- For the proposed manufacturing activity the total water consumption will be 1045 KL /Day.
- From that we will get 601 KL /Day treated effluent from Nano Filtration. So, the required fresh water consumption will be 444 KL /Day.
- The low concentrated stream will be 597 KL /Day. That will be treated in proposed effluent Treatment Plant consisting of primary, secondary and tertiary units.
- After treated in ETP, the treated effluent sent to Nano Filtration. The input quantity of Nano Filtration will be 411 Kl /Day.
- The NF rejected will be sent to MEE. The input quantity of MEE will be 238 KL/Day.
- From that the quantity of condensate water will be 190 KL /Day and Evaporation Residue will be 48 KL /Day.
- That Evaporation Residue will be sent to centrifuge. From that ~ 9.6 KL ML generated and that will be incinerated. The sludge will be `~ 38.4 MT.

1.6 Air Pollution Source and Control Management

The source of air pollution due to the project will be Flue gas emission. The source of flue gas emission will be from the stack attached to Thermic fluid Heater

(A) Details of Flue Gas Stack ; Stack Attached To Boiler

SOURCES OF GASESOUS EMISSIONS	**STACK**		
Fuel Used	Natural Gas Or LDO/FO		
Quantity of Fuel	1500 SCM/Hr or 500 Lit/Hr including Hot air Generator & Incinerator		
Type of Emissions	SO_2	NOx	PM
Permissible Limits	<100 ppm	< 50 ppm	<150 Mg/NM^3
Stack Height	33meter		
Air Pollution Control System	Multicyclone dust collector and Bag filter		

(B) Details of Flue Gas Stack ; Stack Attached To Hot Air Generator

SOURCES OF GASESOUS EMISSIONS	**STACK**		
Fuel Used	Natural Gas Or LDO/FO		
Quantity of Fuel	1500 SCM/Hr or 500 Lit/Hr including Boiler & Incinerator		
Type of Emissions	SO_2	NOx	PM
Permissible Limits	<100 ppm	< 50ppm	<150 Mg/NM^3
Stack Height	33meter		
Air Pollution Control System	Multicyclone dust collector and Bag filter		

(C) Details of Flue Gas Stack ; Stack Attached To Incinerator

SOURCES OF GASESOUS EMISSIONS	**STACK**		
Fuel Used	Natural Gas Or LDO/FO		
Quantity of Fuel	1500 SCM/Hr or 500 Lit/Hr including Hot air Generator & Boiler		
Type of Emissions	SO_2	NOx	PM
Permissible Limits	<100 ppm	< 50ppm	<150 Mg/NM^3
Stack Height	33meter		
Air Pollution Control System	Quencing followed by Ventury scrubber followed by Spray Tower		

(D) Details of Flue Gas Stack ; Stack Attached To D.G.Set

SOURCES OF GASESOUS EMISSIONS	**STACK**		
Fuel Used	LDO		
Quantity of Fuel	10 Lit/Hr		
Type of Emissions	SO_2	NOx	PM
Permissible Limits	<100 ppm	< 50ppm	<150 Mg/NM^3
Stack Height	33meter		
Air Pollution Control System	-----		

Type of Process Gas Emission: -

No.	Stack attached To	APCD System	Stack Height	Pollutants
1.	Reaction vessel	Three Stage Scrubber system	11 m	HCl <= 20 mg/NM^3
2	Reaction vessel	Three Stage Scrubber system	11 m	NH_3 <= 175 mg/NM^3
3	Reaction vessel	Three Stage Scrubber system	11 m	SO_2 <= 40 mg/NM^3
4	Spray Dryer	cyclone separator followed by water scrubber	11 m	SPM< = 150 mg/NM^3

1.7 Hazardous Waste Management

Sr. No.	Type of Waste With Category No.	Total Quantity of Waste
01	ETP Waste/ Evaporation Residue (Cat.No.34.3)	50 MT/Month
02	Incineration Ash	5 Mt/M
03	Centrifuge Waste	960 MT/M
04	Spent Oil/Used Oil (Cat.No.5.1)	50 Lit/Year
05	Discarded Container (Bags,Barrels,Drums) (Cat .No.33.3)	25000-30000 Nos/M

No.	Type of	Source of	Collection	Treatment	Storage	

	Waste	Generation				Disposal/Management
01	ETP Waste/ Evaporation Residue (Cat.No.34.3)	Effluent Treatment Plant	Manual for Less quantity& by Pump for High Quantity	Solar Drying	Packed in to HDPE bags, Store in to Storage area.	Disposal to TSDF Site.
02	Incineration Ash	Incineration				
03	Centrifuge Waste	Centrifuge				
04	Used Oil/Spent Oil	Plant Machineries	Manual	--	Separate store in to SWSA After filling in to drums	Used Oil will be reused as lubricant in plant machineries Spent Oil sell to authorized recycler
05	Discarded Containers (Bags, Barrels, Drums) (Cat.No.33.3)	Production Section	Manual	Washing & Drying	Separate Store in to SWSA	Return back to raw material supplier or used for packing of ETP Waste.

2.0 INTRODUCTION OF THE PROJECT/BACKGROUND INFORMATION

2.1 Identification of the project and project proponent. In case of mining project, a copy of mining lease/letter of intent should be given.

Identification of the project

Identification of the project proponent

Name of Directors

01 Mr. Viral H.Shah

02 Mr.Vishal H.Shah

2.2 Brief description of nature of the Project

2.3 Need for the project and its importance to the country and or region

The objective is to be achieved by:

- Continuously reducing the Costs & improving Quality.
- To generate local employment

2.4 Demands-Supply Gap

Based on our informal survey of the market with our current customers and various traders, we have found that there is a big potential for the range of the products we are planning. These products will be an addition to the current range of our trading products.

2.5 Imports vs. Indigenous production

Based on the current cost of indigenous raw materials and the non availability of some materials, No import will be done for any of our Raw Material. This will make us very competitive against imported finished products and we will be able to increase the export of our finished products.

2.6 Export possibility

We shall explore the possibility of export the products.

2.7 Domestic/Export Markets

We shall explore the possibility of domestic/export the products.

2.8 Employment Generation (Direct and Indirect) due to project.

Employment would be as per prevailing norms of state government for skilled and unskilled people for the proposed project.

3.1 Project Description

3.2 Type of Project including interlinked and interdependent projects, if any.

- Category: 5 (f)

3.3 Location (map showing general location, specific location and project boundary & project site layout) with coordinates. Map showing general location

Layout Plan: Enclosed in EC Application: Please Refer Enclosure: 21

Details of alternate sites considered and the basis of selecting the proposed site, particularly the environmental considerations gone into should be highlighted.

Major factors involved in the selection of site are listed below:

- Site is very well connected by road
- Availability of sufficient land free from cultivation
- Availability of power evacuation facilities
- Availability of water for industrial use

Modern infrastructure support and amenities at par with industrial estates in other global markets, including:

- Efficient transport facilities within the industrial estate and to & from the city area.
- Environment-friendly zone.
- Uninterrupted power supply.

3.4 Size or Magnitude of Operation

Name of product with its quantity

Sr. No.	Name of Product	Quantity in MT / M.
1.	Vinyl Sulphone	500
2.	CPC	500
3.	Alpha Blue	200
4.	Beta Blue	200
5.	CPC Green 7	200
6.	Dyes	800
7.	Direct Turquoise Blue 86	600
8.	Direct Turquoise Blue FBL -199	
9.	Reactive Blue G	
10.	Reactive Turquoise Blue H5G	
11.	Reactive Blue 72	
	[A]	**3000**

Name of by-product with its quantity

Sr. No.	Name of By Product	Quantity in MT / Day.
1	Hydrochloric Acid	47
2	Ammonium Sulphate	16.4
3	Spent Sulphuric Acid	434
4	Ammonium Carbamate	28.60
5	NaOCl	3.5

3.5 Project Description with process details (a schematic diagram/flow chart showing the project layout, components of the project etc. should be given)

Please refer Enclosure 9 &10in EC Application.

3.6 Raw material required along with estimated quantity, likely source, marketing area of final products. Mode of transport of raw materials and finished products.

Please refer Enclosure 4in EC Application.

3.7 Resource optimization/recycling and reuse envisaged in the project, if any, should be briefly outlined.

There will not resource optimization/recycling and reuse envisaged in the project.

3.8 Availability of water its source, energy/power requirement and source should be given.

Power & Fuel Requirement

Energy

Power supply is available from Madhya Gujarat Vij.Co.Ltd.

Fuel

Sr.No	Name of Fuel	Quantity
01	Natural Gas or LDO/FO	1500 SCM/Hr or 500 Liter/Hr

3.9 Quantity of wastes to be generated (liquid and solid) and scheme for their management/disposal.

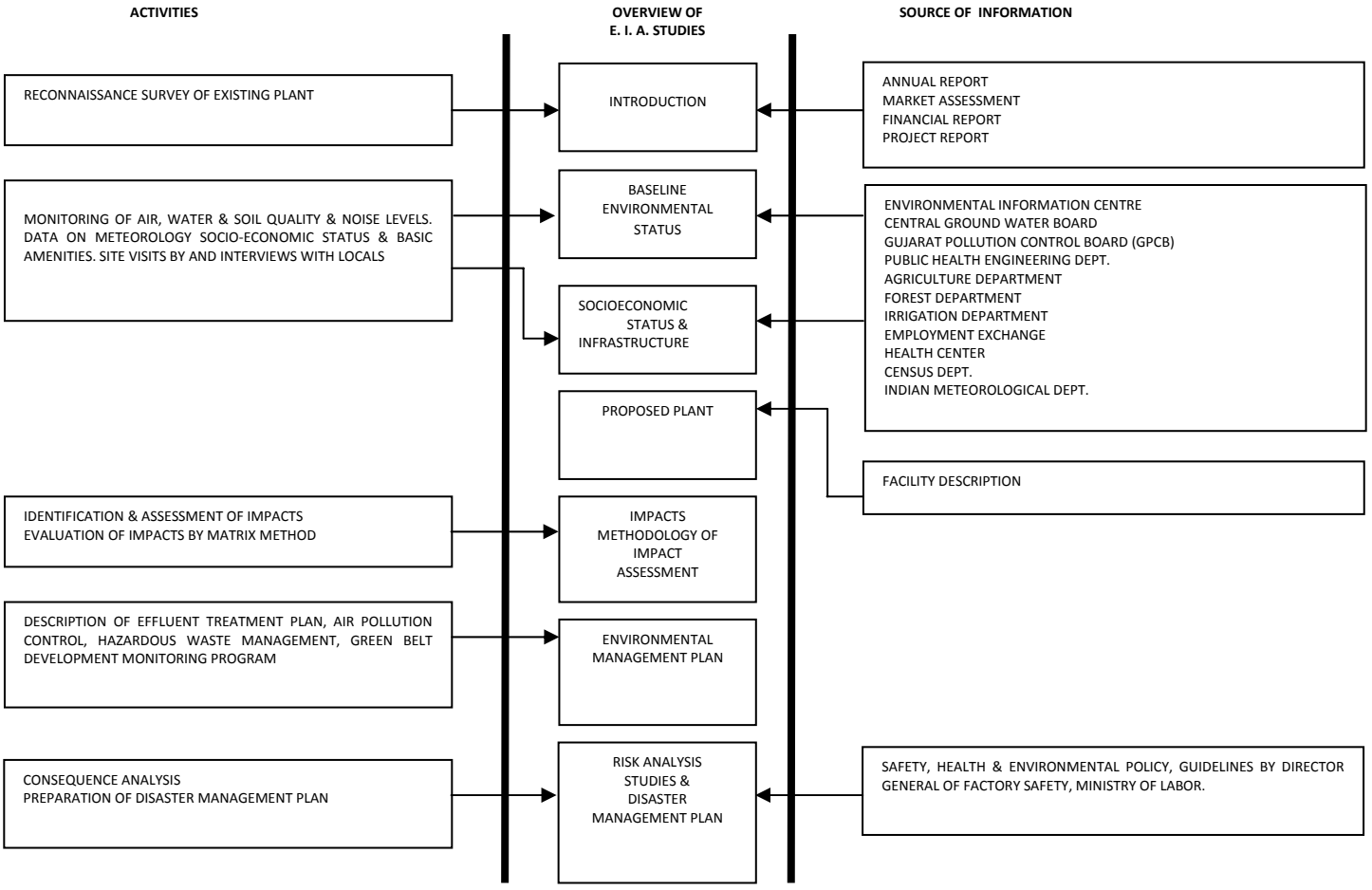
Liquid Waste:

- For the proposed manufacturing activity the total water consumption will be 1045 KL /Day.
- From that we will get 601 KL /Day treated effluent from Nano Filtration. So, the required fresh water consumption will be 444 KL /Day.
- The low concentrated stream will be 597 KL /Day. That will be treated in proposed effluent Treatment Plant consisting of primary, secondary and tertiary units.
- After treated in ETP, the treated effluent sent to Nano Filtration. The input quantity of Nano Filtration will be 411 Kl /Day.
- The NF rejected will be sent to MEE. The input quantity of MEE will be 238 KL/Day.
- From that the quantity of condensate water will be 190 KL /Day and Evaporation Residue will be 48 KL /Day.
- That Evaporation Residue will be sent to centrifuge. From that ~ 9.6 KL ML generated and that will be incinerated. The sludge will be `~ 38.4 MT.

For, Associated Dyestuff Pvt. Ltd.

Director

- **3.10 Schematic representations of the feasibility drawing which give information of EIA purpose.**



4.1 Connectivity

- Site is very well connected by road
- Availability of power evacuation facilities
- Availability of water for industrial use

4.2 Land Form, Land Use and Land Ownership

It will be incorporated in EIA Studies.

4.3 Topography (along with map)

We will be incorporated topography in EIA Studies.

4.4 Existing land use pattern (agriculture, non-agriculture, forest, water bodies (including area under CRZ)), shortest distances from the periphery of the project to periphery of the forests, national park, wild life sanctuary, eco sensitive areas, water bodies (distance from HFL of the river), CRZ. In case of the notified industrial area, a copy of the Gazette notification should be given.

It will be incorporated in EIA Studies. CRZ Clearance is not applicable to us.

4.5 Existing Infrastructure

Existing Infrastructures facilities are listed below:

Site is very well connected by road

Proximity to Raw Material suppliers

Availability of sufficient land free form cultivation.

Availability of power evacuation facilities

4.6 Soil Classification

It will be incorporated in EIA Studies.

4.7 Climatic data from secondary sources.

Secondary Sources – Indian Meteorological Department, Ahmedabad or our own weather station.

4.8 Social infrastructure available.

Depending on the growth of the company the required social infrastructure will be provided.

5.0 Planning Brief

5.1 Planning Concept (type of industries, facilities, transportation etc) Town and Country planning/Development authority classification.

Type of Industry: Synthetic Organic Chemical Industries

Facility: Canteen, Administration, Transportation

5.2 Population Projection

We will include in EIA Report.

5.3 Land use planning (breakup along with green belt etc.)

Total Plot Area –37210Sq.m

5.4 Assessment of Infrastructure Demand (Physical & Social)

- Employment would be as per prevailing norms of state government for skilled and unskilled people for the proposed project.
- Social Welfare
- Cordial relation with the industry shall be established and representation shall be made to villagers for help for creation of facilities related to health, education, etc.

5.5 Amenities/Facilities

It will be incorporated in the EIA Studies.

6.0 Proposed Infrastructure

6.1 Industrial Area (Processing Area)

Processing Area (Processing Zone, and Utility Area) – Please refer Plant Layout

6.2 Residential Area (Non Processing Area)

Non Processing Area (Green belt, Raw material storage area, Finished storage area, Open space) – Please refer plant Layout

6.3 Green Belt

Company shall develop an effective green belt within the factory and on periphery of the factory. In addition to this, majority of the vacant land shall be planted with trees, shrubs and grasses.

6.4 Social Infrastructure

Depending on the growth of the company the required social infrastructure will be provided.

6.5 Connectivity (Traffic and Transportation Road/ Rail/Metro/ Water ways etc)

Site is very well connected by road & railway

6.6 Drinking water Management (Source & Supply of water)

Water requirement will meet through the Bore well

6.7 Sewerage System

Sewage pipes would be laid in entire company for the removal and disposal of mainly non-harmful liquid wastes from the offices, canteen and domestic waste coming from different sections. These liquid wastes would be treated (If required) and disposed by septic tank and soak pit.

6.8 Solid Waste Management

Details of Hazardous Waste Generation & Disposal

Sr. No.	Type of Waste With Category No.	Total Quantity of Waste
01	ETP Waste/ Evaporation Residue (Cat.No.34.3)	50 MT/Month
02	Incineration Ash	5 Mt/M
03	Centrifuge Waste	960 MT/M
04	Spent Oil/Used Oil (Cat.No.5.1)	50 Lit/Year
05	Discarded Container (Bags,Barrels,Drums) (Cat .No.33.3)	25000-30000 Nos/M

No	Type of Waste With Category No.	Source of Generation	Collection	Treatment	Storage	Disposal/Management
1.	ETP Waste/ Evaporation Residue (Cat.No:34.3)	Effluent Treatment Plant	Manual for Less quantity & By Pump for High Quantity	Solar Drying	Packed in to HDPE Bags, Store in to storage area	Dispose to TSDF Site
2.	Incineration Ash					
3.	Centrifuge Waste.					
4.	Spent Oil/Used Oil	Plant Machineries	Manuals	-	Separate store in to SWSA after filling in to Drums.	Used Oil will Be reused as Lubricant in Plant machineries Spent Oil sell To authorized

						recycler.
5.	Discarded Containers (Bags,Barrels,Drums)	Production Section	Manuals	Washing & Drying	Separate Store in to SWSA	Return back to raw material suppliers or used for Packing of ETP Waste.

6.9 Power Requirement & Energy:

Power will be met from Madhya Gujarat Vij. Co. Ltd.

Sr.No	Name of Fuel	Quantity
01	Natural Gas or LDO/FO	1500 SCM/Hr or 500 Liter/Hr

7.0 Rehabilitation and Resettlement (R & R) Plan

7.1 Policy to be adopted (central/state) in respect of the project affected including home oustees, land ouatees and landless laborers (a brief outline to be given

R & R policy is not applicable to this project.

There shall be no displacement of any population in project area.

8. Project Schedule & Cost Estimates

8.1 Likely date of start of construction and likely date of completion (Time schedule for the project to be given).

We shall start construction after getting environmental clearance and consent to establish.

We shall start production upon making application for CCA.

8.2 Estimated Project cost along with analysis in terms of economic viability of the project.

Approximately Project Cost will be 15 Crores.

9. Analysis of Proposal (Final Recommendations)

9.1 Financial and social benefits with special emphasis on the benefit to be local people including tribal population, if any, in the area.

- Employment would be as per prevailing norms of state government for skilled and unskilled people for the proposed project.
- Social Welfare shall be done.
- Cordial relation with the industry shall be established and representation shall be made to villagers for help for creation of facilities related to health, education, etc.

Enclosure: 16

Terms of Reference

SR.NO.	EIA STRUCTURE	CONTENTS
1.	Introduction	• Purpose of the report. • Identification of project and project proponent. • Brief Description of nature, size, location of the project and its importance to the country, region. • Scope of the study – details of regulatory scoping carried out (As per TOR)
2.	Project Description	• Type of Project • Need of Project. • Location of Unit Including general location, Specific Location, Project Boundary and project site layout. • Size or magnitude of operation. • Technology and process description. • Project description including drawing showing project layout, components of project. • Description of mitigation measures incorporated into the project to meet environmental standards, environmental operating conditions or other EIA requirements.
3.	Description of the Environment	• Study area: radius of 5 km from the project site. • Period : 03 Months • Components and methodology. • Establishment of baseline for valued environmental components. • Base maps of all environmental components.

S.NO.	EIA STRUCTURE	CONTENTS
4.	Anticipated Environmental Impact & mitigation measures	• Details of Investigated Environmental Impacts due to project location, possible accidents, project design, project construction, regular operations, final decommissioning or rehabilitation of a completed project. • Measures for minimizing and / or offsetting adverse impacts identified. • Assessment of significance of Impacts (Criteria for determining significance, Assigning significance) • Mitigation measures.
5.	Environmental Monitoring Programme	• Technical aspects of monitoring the effectiveness of mitigation measures (incl. measurement methodologies, frequency, location, data analysis, reporting schedules, emergency procedures, detailed budget & procurement schedules)
6.	Project Benefits	• Other tangible benefits.
7.	EMP	• Description of the administrative aspects of ensuring that mitigate measures are implemented and their effectiveness monitored, after approval of the EIA.
8.	Summary & Conclusion (This will constitute the summary of the EIA Report)	• Overall justification for implementation of the project. • Explanation of how, adverse effect have been mitigated.
9.	Disclosure of consultants engaged	• The name of consultants engaged with their brief resume and nature of consultancy rendered.

For, Associated Dyestuff Pvt. Ltd.

Director

ASSOCIATED DYESTUFF PVT. LTD

S.NO:466/2, VILLAGE: DUDHWADA, TA: PADRA, DIST: VADODARA

Enclosure: 17

Name & Address of Directors

Sr. No.	Name	Address
01	Mr.Viral H.Shah	2,Jain Nagar,Opp.Sanjeeveni Hospital,Paldi,Ahmedabad M.No-9825007107
02	Mr.Vishal H.Shah	

ASSOCIATED DYESTUFF PVT. LTD

S.NO:466/2, VILLAGE: DUDHWADA, TA: PADRA, DIST: VADODARA

Enclosure: 18

SSI certificate

DISTRICT INDUSTRIES CENTER,AHMEDABAD
(Government of Gujarat)
1ST FLOOR BACHAT BHAVAN,RELIEF ROAD,AHMEDABAD.
Ph. 25508339,Fax No. 25502801(E-Mail : gm-dic-ahd@gujarat.gov.in)

No/DIC/AHD/EM/Part-2/ 17794 17/7/12 Form No : 3081

ENTREPRENEURS' MEMORANDUM FOR SETTING UP MICRO, SMALL OR MEDIUM ENTERPRISE

ACKNOWLEDGEMENT FOR PART - II

M/s. ASSOCIATED DYESTUFF PVT. LTD. HAS FILED MEMORANDUM FOR A MANUFACTURING ENTERPRISE AT THE ADDRESS PLOTNO.A/1/5,PHASE-1, G.I.D.C. ,VATVA,AHMEDABAD. At Village : AHMEDABAD. At Taluka : AHMADABAD CITY. At District : AHMEDABAD ,PIN - 382445 FOR THE ITEM/ITEMS INDICATED BELOW AS STATED IN FORM NO. 3081 AND ALLOCATED ENTREPRENEURS' MEMORANDUM NO. AS BELOW :

MAIN ITEMS MANUFACTURED	CAPACITY PER ANNUM
MANUFACTURE OF DYES	2400 M.T.

DETAILS OF THE ITEMS MANUFACTURED

Sr. No.	Items Manufactured	Capacity Per Annum Qty	Unit	Initial date of production/ commencement of service
1	SYNTHETIC ORGANIC DYES, VINYL SULPHONE AND IT'S DERIVATIVE	1200	MT	29/04/1977
2	MFG & JOB WORK OF BLENDING, SPRAY DRYING & PACKING OF S.O. (SYNTHETIC ORGANIC) DYES	2400	MT	29/04/1977

DETAILS OF PLANT AND MACHINERY AS PER DATE-WISE INVESTMENT(INV in Lac.)

Sl. No.	Investment in Plant and Machinery/Equipments	Date of Investment
1	101.0000	29/04/1977

NOTE : THE ISSUE OF THIS ACKNOWLEDGEMENT DOES NOT BESTOW ANY LEGAL RIGHT. THE ENTERPRISE IS REQUIRED TO SEEK REQUISITE CLEARANCE/LICENCE/PERMIT REQUIRED UNDER STATUTORY OBLIGATION STIPULATED UNDER THE LAWS OF CENTRAL GOVERNMENT/STATE GOVERNMENT/ ADMINISTRATOR/COURT ORDERS.

DATE OF ISSUE 19/10/2007

NATURE OF ACTIVITY (MANUFACTURING-1,SERVICES-2) 1

CATEGORY OF ENTERPRISE (MICRO-1,SMALL-2,MEDIUM-3) 2

ENTREPRENEURS MEMORANDUM NUMBER (PART - II) 24 - 007 - 12 - 02117

(First two digit = State, Next three digit = District code, sixth digit = Nature of Activity, seventh digit = category of enterprise and last five digit are for Entrepreneurs' Memorandum

DATE: 19/10/2007
PLACE: AHMEDABAD

OFFICE SEAL
DISTRICT INDUSTRIES CENTRE AHMEDABAD
GOVT. OF GUJ.

GENERAL MANAGER
DISTRICT INDUSTRIES CENTER,
AHMEDABAD.

To,
M/s. ASSOCIATED DYESTUFF PVT. LTD.
VISHAL H. SHAH
PLOTNO.A1/5,PHASE-1, G.I.D.C. VATWA, NR. SHAH TEXTILES,
AHMEDABAD.,AHMADABAD CITY,AHMEDABAD,PIN - 382445

Note :- This Acknowledge is additional information submitted about amended in 17/07/2012 by the unit.

ASSOCIATED DYESTUFF PVT. LTD

S.NO:466/2, VILLAGE: DUDHWADA, TA: PADRA, DIST: VADODARA

Enclosure: 19

Land Supporting Document

VIJAY S. GOSWAMI
(B. Com., M.S.W., LL.B., D.L.P.)
ADVOCATE

To,

Associated Dyestuff Pvt. LTD.
A-1/5, Phase – 1, GIDC; VATVA
AHMADABAD – 382445.

BILL

Rs. 10,000/- Fees
Rs. 1890/- Advertising exp.
Rs. 750/- For search

Rs. 12,640/- Total

Being the amount of title clearance certificate in respect of land bearing old R.S. no. 466/2 consolidate Block no. 522 of village DUDHWADA Ta. PADARA Dist. VADODARA.

DATE:- 15-5-2007 V.S.GOSWAMI

VADODARA ADVOCATE

PAID
Date 24/5/07
Bank
Cheque No.

089106

गुजरात GUJARAT

PDR 0749 5/17 2007

...૮...

(૫) વેચાણ આપનારને ઉપર જણાવ્યા પ્રમાણે કુલ અવેજની રકમ મળી ગયેલ છે. અને બ્લોક નંબર :૫૨૨,૫૨૬ થી ૫૩૧, ૫૩૩, ૫૩૪, ૫૩૬, ૫૩૭,૫૩૮,૫૩૯,૫૫૩,૫૫૭,૫૫૮પૈકી, ૫૪૧, ૫૪૨નો **એકત્ર બ્લોક નંબર : ૫૨૨ પૈકી પૂર્વ દિશા તરફની હે.આરે.પ્રતિ: ૩-૭૨-૧૦** બીનખેતી ઉપયોગની જમીનનો કબજો સોંપી દીધો છે. વેચાણ આપેલી જમીન બીનખેતી ઉપયોગની જમીન છે. તે જમીન પાદરા તાલુકા પંચાયત કચેરીના કાર્યાલય નંબર : એલ. એન. ડી. એસ.આર/ ૨૦ / ૯૫ નં. લેન્ડ / વશી / ૫૭૧૦ / ૯૫, તા.૧૩-૧૧-૯૫ થી તથા એલ. એન. ડી. એસ. આર /૧૮ / ૯૫ નં. લેન્ડ / વશી / ૫૭૧૧ / ૯૫,તા.૧૩-૧૧-૯૫થી બીનખેતી ઉપયોગમા લેવાની પરવાનગી આપેલી છે. અને ત્યાર બાદ જમીન મહેસુલ શાખા જીલ્લા પંચાયત કચેરી વડોદરાના હુકમ નં.જમીન/સી-૨/જમક-૬૭/૩૪-૩૭/ ૨૦૦૬-૨૦૦૭, તા.૮-૧-૨૦૦૭થી રિવાઇઝ બીનખેતી ઉપયોગની પરવાનગી આપેલી છે.અને તેમા બીનખેતી ઉપયોગી કૃત્ય શરૂ કર્યુ છી. જેથી સદર જમીન વેચાણ આપવા માટે અન્ય કાયદા હેઠળ કોઈ પરવાનગી લેવાની રહેતી નથી.

[illegible]

ગામનો નમુનો નંબર ૭ અને ૧૨

ખેતરનું નામ :
બ્લોક નંબર : — [illegible] —
સર્વે નંબર : —
હિસ્સા નંબર :
સત્તાનો પ્રકાર — [illegible] —

ખેડવા લાયક જમીન	એકર/હેકટર	ગુંઠા/આર
૧ જરાયત	[illegible] —	
૨ બાગાયત		
૩ ક્યારી		
કુલ		
પોત ખરાબ વર્ગ અ પોત ખરાબ વર્ગ બ	—	
કુલ	[illegible] —	
આકાર જુડી અથવા વિશેષ ધારો [illegible]	રૂ. [illegible]	પૈસા [illegible]
ગણોતીયા અથવા પેટા ગણોતીયાનું નામ ક્ષેત્રફળ.............. ગણોતીયાની રકમ	એકર / હેકટર રૂ.	ગુંઠા / આર પૈસા

કબજેદારનું નામ

[illegible]

બીજા હક્કો — [illegible]

[illegible]

ગામનો નમુનો નંબર ૧૨

વર્ષ	ખેતરનું નામ	મોસમ / ખરીફ / રવી / ઉનાળુ	પાકેલ પ્રધાન મિશ્ર ઘટકો: મિશ્રણ નંબર	ક્ષેત્રફળ: પીત	ક્ષેત્રફળ: અપીત	ક્ષેત્રફળની વિગત: મિશ્રણ નંબર	ક્ષેત્રફળ: પીત	ક્ષેત્રફળ: અપીત	પાકનું નામ	ક્ષેત્રફળ	[illegible]	[illegible]	શેરો
૧	૨	૩	૪	૫	૬	૭	૮	૯	૧૦	૧૦	૧૧	૧૨	૧૪
[illegible]	[illegible]	—			[illegible]				અ	અ	[illegible]	—	

અસલ ઉપર નકલ કરી તા. [illegible]

[illegible] તલાટી કમ મંત્રી [illegible] તા. પાદરા

ગામનો નમૂનો નંબર ૧૨

વર્ષ	ખેડૂતનું નામ	મોસમ	પાયેતર			સેન્દ્રજની વિગત			પડતર તથા બિન ખેડવાણ ની વિગત	પીતનું સાધન	હળાઈ તથા બીજ ઓજાર તથા તેની સંખ્યા	ખેડની રીત	શેરો
		પાક	પ્રધાન મિશ્ર તુલીય			ગૌણમિશ્રણ તથા અમિશ્ર તુખો							
		રવી	મિશ્રણ નંબર	સેન્દ્રજન									
		ઉનાળુ		પીત	કપીત	મિશ્રણ નંબર	સેન્દ્રજન પીત	કપીત	પ્રકાર સેન્દ્રજ				
૧	૨	૩	૪	૫	૬	૭	૮	૯	૧૦	૧૧	૧૨	૧૩	૧૪

અસલ ઉપર નકલ કરી તા.

૧૧. જમીન મહેસૂલ કાયદાની કલમ- ૬૬

:હુકમ:

મોજે કુંપવાડ તા.પાદરાના બ્લોક નં. ૫૨૨, ૫૨૯ થી ૫૩૧, ૫૩૩, ૫૩૪, ૫૩૬, ૫૩૭, ૫૩૮, ૫૩૯, ૫૪૩, ૫૪૭, ૫૪૮ પૈકી, ૫૪૨, ૫૪૧ એકત્ર બ્લોક નં. ૫૨૨ ની કુલ હે.આ.ચો. ૮-૨૧-૨૧ ચો.મી.ની ઓરડીઓના હેતુની બીનખેતીની જમીનમાં ઉદ્યોગના હેતુ માટે બીનખેતીની હેતુફેરની પરવાનગી મળવા આમુખ-૧ માં વંચાણે લીધેલ અરજી નગર નિયોજકશ્રી વડોદરા એ મંજૂર કરેલ નકશા સહ રજૂ થયેલ છે.

આમુખ - ૫ માં દર્શાવેલ તાલુકા વિકાસ અધિકારીશ્રી પાદરાના હુકમ નં. એલએનડી/ એસઆર/ ૨૦/૯૫ નં.લે.નં/ જમી/૫૭૧૦/૯૫ તા.૧૩/૧૧/૯૫ ના હુકમથી બ્લોક નં. ૫૩૪, ૫૩૬, ૫૪૧, ૫૪૨, ૫૪૩, ૫૪૭, ૫૪૮ તથા આમુખ - ૬ માં દર્શાવેલ તાલુકા વિકાસ અધિકારીશ્રી પાદરાના હુકમ નં. એલએનડી/ એસઆર/ ૧૮/૯૫ નં.લે.નં/જમી/ ૫૭૧૧/૯૫ તા.૧૩/૧૧/૯૫ ના હુકમથી બ્લોક નં. ૫૨૭, ૫૨૮, ૫૨૯, ૫૩૦, ૫૩૧, ૫૩૩, ૫૩૯, ૫૩૭, ૫૨૨, ૫૩૮, ૫૨૬ ની જમીનમાં ઔદ્યોગિક હેતુ માટે બીનખેતીની પરવાનગી આપવામાં આવેલ છે.

તાલુકા વિકાસ અધિકારીશ્રી પાદરાના પત્ર નં.તા.પં./ વેન્દ/ જમી/ ૩૨૦/૨૦૦૫ તા.૧૦/૫/૨૦૦૫ તથા નં.તા.પં. [illegible]/૧૩૬/૨૦૦૮ તા.૨૮/૩/૨૦૦૮થી શરતભંગની કાર્યવાહી કરી હેતુફેર (ઉદ્યોગ)ના બાંધકામ કરવા [illegible] માટે અભિપ્રાય આપેલ છે.

[illegible]શ્રી વડોદરાના તા.૦૯/૦૪/૨૦૦૪ ના પત્ર નંબર.બીપી/ કુંપવાડ/ પાદરા/૧૩૨૦ થી ઉદ્યોગના હેતુ માટે વિકાસ પરવાનગી આપી નકશા મંજૂર કરેલ છે. તેમજ સબંધીત ખાતાઓના વંચાણમાં લીધેલ પત્રો થી અભિપ્રાયો મળી આવેલ છે. વડોદરા જિલ્લાની કારોબારી સમિતિના ઠરાવ નં.૭૨ તા.૨૦/૯/૨૦૦૮ થી અરજદારની પરવાનગી મળવા બાબતે પુખ્ત કુકાની શરતોના ભંગ બદલ ૮૨૧૨૧ ચો.મી.ના વાર્ષિક બીનખેતી આકારના [illegible] (ચાલીસ) ગણો દંડ લઈ ઉદ્યોગના હેતુ માટે હેતુફેર પરવાનગી આપવા ઠરાવેલ છે.

સબબ મોજે કુંપવાડ તા.પાદરાના બ્લોક નં. ૫૨૨, ૫૨૯ થી ૫૩૧, ૫૩૩, ૫૩૪, ૫૩૬, ૫૩૭, ૫૩૮, ૫૩૯, [illegible], ૫૪૭, ૫૪૮ પૈકી, ૫૪૨, ૫૪૧ એકત્ર બ્લોક નં. ૫૨૨ ની હે.આ.ચો. ૮ ૨૧ ૨૧ ચો.મી. બીનખેતીની જમીનમાં ઉદ્યોગના હેતુ માટે ગ્રાઉન્ડ ફ્લોરનું ૩૫૧૧ ચો.મી. તથા ફસ્ટ ફ્લોરનું ૩૨૦ ચો.મી. મળી ૩૮૩૧ ચો.મી.નું બાંધકામ નગર નિયોજકશ્રી વડોદરાએ મંજુર કરેલ નકશા મુજબ બાંધકામ કરવા હેતુફેરની પરવાનગી આ જમીનના માલીક **શ્રી લીંક ફાર્મા કેમીકલ્સ લી.ના ડાયરેકટર**ના નામે નીચેની શરતોએ આપવા હુકમ કરવામાં આવે છે.

1. ગુજરાત પંચાયત અધિનિયમ-૧૯૯૩ ની કલમ-૧૦૪ અન્વયે સ્થાનિક ગ્રામ પંચાયતની પરવાનગી મેળવી લેવી પડશે, જલદીથી સળગી ઉઠે તેવા સ્ફોટક પદાર્થોનો ઉપયોગ બાંધકામમાં થઈ શકશે નહીં, તેમજ આગ-અકસ્માત ન થાય તેવી વ્યવસ્થા રાખવા જરૂરી પ્રબંધ કરવો પડશે.
2. તાલુકા વિકાસ અધિકારીશ્રી પાદરાના તા.૧૩/૧૧/૧૯૯૫ ના હુકમ નં.એલએનડી/ એસઆર/૨૦/૯૫ નં. લેનં/ જમી/૫૭૧૦/૯૫ તથા તા.૧૩/૧૧/૧૯૯૫ ના હુકમ નં.એલએનડી/ એસઆર/૧૮/૯૫ નં. લેનં/ જમી/૫૭૧૧/૯૫ ના હુકમોની શરતોનું પાલન કરવાનું રહેશે.
3. સદર સર્વે નંબરમાં આ સિવાય વિશેષ બાંધકામ કરવા માટે અમોની પૂર્વમંજૂરી મેળવ્યા સિવાય કોઈપણ પ્રકારનું બાંધકામ કરવું નહીં. કુલ ક્ષેત્રફળના ૪૦ % (ટકા) સુધી અમોની મંજૂરીથી બાંધકામ થઈ શકશે અને ૬૦ % (ટકા) જમીન ખુલ્લી રાખવી પડશે. નગર નિયોજકશ્રી વડોદરા ની બાંધકામમાં ફેરફાર કરતાં અગાઉ કે વધારાનું બાંધકામ કરતા પહેલાં તેઓની તેમજ અમોની પૂર્વ મંજુરી મેળવવી પડશે.

૪. નગર નિયોજકશ્રી વડોદરા દ્વારા મંજુર કરવામાં આવેલ લે આઉટ પ્લાનમાં દર્શાવ્યા પ્રમાણેની જમીન આંતર રસ્તા વિગેરે આંતર હેતુ માટે વગર વળતરે ખુલ્લી રાખવાની રહેશે.અને આ મંજુર થયેલ લેઆઉટ પ્લાન પ્રમાણેના આંતરીક રસ્તા કરવાના તથા પ્લોટને આપેલા કોઈ રસ્તા સાથેનો એપ્રોચ રોડ કરવાની તથા તે જાળવવાની,ગટર,પાણી ની સગવડ,દીવાબત્તી વિગેરેની સગવડ ઉભી કરવાની તથા જાળવવાની તથા તેને લગત તમામ ખર્ચની જવાબદારી અરજદારે જ્યાં સુધી ગ્રામ/નગર પંચાયતને તરફથી આવા રસ્તાઓ વગેરે સંભાળવામાં ન આવે ત્યાં સુધી બજાવવાની રહેશે.અને બીજાકોઈ આસામી સાથે સવાલવાળી જમીનના વેચાણ વ્યવહાર,અદલો-બદલો કે ઈતર પ્રકારનો વ્યવહાર થયેથી ઉપરની તમામ જવાબદારી આ જમીનના હક્ક તબદીલ લેનારને કે આ પ્રમાણેના વ્યવહારથી હક્ક પ્રાપ્ત કરનાર આસામીના શીરે રહેશે તેવી સ્પષ્ટતા/કબુલાત વેચાણ દસ્તાવેજ ઈતર કરેલા વ્યવહારમાં જણાવવાની રહેશે.અને તે પ્રમાણેનો અમલ કરવાની જવાબદારી વેચાણ લેનાર શખ્સ કે આવા વ્યવહારથી હક્ક પ્રાપ્ત કરનાર શખ્સ પર રહેશે.

૫. મંજુર કરેલ આકૃતિ અને પ્લાન પ્રમાણે બાંધકામ કરવું પડશે. તે વિરૂધ્ધ થઈ શકશે નહીં. આ પરવાનગી ઉપયોગના હેતુ માટે જ આપવામાં આવી છે. જેથી અગાઉની પૂર્વમંજુરી મેળવ્યા સિવાય પરવાનગી હુકમની જમીનના કે તે ઉપરના બાંધકામના અન્ય હેતુ માટે ઉપયોગ થઈ શકશે નહીં.

૬. કોઈ પણ પ્રકારનું બાંધકામ પ્લોટની હદથી અને જે બાજુથી રસ્તા હોય તે બાજુથી નગર નિયોજકશ્રી વડોદરા દ્વારા મંજુર કરવામાં આવેલ નકશામાં દર્શાવેલ અંતરની અંદર થઈ શકશે નહીં. ગણોતધારાની જોગવાઈને આધીન રહીને તથા રસ્તા રેખા નિયમોનું પાલન કરવાની શરતે પરવાનગી આપવામાં આવી

૭. અરજદારે માપણી ફી રૂ.____ ના.ચ.રો./____ ના રોજ ચલનથી જમા કરાવેલ છે. જેથી માપણી કરાવી નીમનાનો પ્લોટ પડાવી લઈ બાંધકામ શરૂ કરવું પડશે. અને તે પ્રમાણે કરવામાં નહીં આવે તો તે બદલ ઠરાવેલ વિશેષ ધારો તેમજ જિલ્લા વિકાસ અધિકારીશ્રી જે દંડ ઠરાવશે તે ભરવો પડશે અને જો માપણી થયેથી કુલ ક્ષેત્રફળમાં વધ-ઘટ થશે તો તેવા ફેરફાર મુજબ વિશેષ ધારો ભરવો પડશે.

૮. સદરહુ પરવાનગી મળ્યા તારીખથી છ માસમાં બાંધકામ શરૂ કરી ત્રણ વર્ષની મુદતમાં પૂરૂ કરવાનું રહેશે. અને બાંધકામ પૂરૂ થયેથી માસ એકમાં અત્રે લેખિત ખબર આપવી પડશે. મુદતમાં બાંધકામ પુરૂ કરવામાં નહીં આવે તો પરવાનગી રદ કરવાની કાર્યવાહી હાથ ધરવામાં આવશે અને ઠરાવેલ વિશેષધારો ભરવો પડશે.

૯. સદરહું પરવાનગી પ્રમાણે બાંધકામ શરૂ કર્યા તારીખથી એક માસની અંદર અરજદારે તલાટી મારફતે તાલુકા વિકાસ અધિકારીશ્રીને તેમજ અત્રેની કચેરીને ખબર આપવી પડશે. તે પ્રમાણે નહીં થશે તો જિલ્લા વિકાસ અધિકારીશ્રી જે દંડ ઠરાવશે તે ભરવો પડશે.

૧૦. બાંધકામ શરૂ કરવામાં આવે અને આપેલની મુદત પૂરી થાય કે તુર્ત જ નમૂના નંબર ''એમ'' માં અરજદારે તાલુકે સનદ ભરી આપવી પડશે અને તે વિરૂધ્ધ વર્તન કરવામાં આવશે તો જિલ્લા વિકાસ અધિકારીશ્રી જે દંડ ઠરાવશે તે ભરવો પડશે.

૧૧. જમીન ઉપર કરવાના સૂચિત બાંધકામનો પ્લાન કેન્દ્ર સરકારના નાગરિક ઉડ્ડયન મંત્રાલયના તા.૧૫-૩-૨૦૦૮ના જાહેરનામા દ્વારા મુકવામાં આવેલ પ્રતિબંધો અને જોગવાઈઓ સાથે સુસંગત રહીને તૈયાર કરી સબંધિત સક્ષમ સત્તા-અધિકારી પાસે તે મંજુર કરાવ્યા બાદ મંજુર કરેલા બાંધકામના પ્લાન મુજબ બાંધકામમાં કોઈ ફેરફાર કે સુધારા વધારા કરવા અંગે બાંધકામનો પ્લાન મંજુર કરાવવાના પ્રસંગે તથા તેના અનુસંધાનમાં બાંધકામ કરવાનું થાય ત્યારે કેન્દ્ર સરકારના ઉક્ત જાહેરનામાની જોગવાઈઓ અને નિયમોનું પાલન થાય તે પ્રમાણે બાંધકામ કે સુધારા વધારા કરાવવાના રહેશે.

૧૨. સદર આજુબાજુની ખેતીવાડીમાંથી નિકળતા ગંદા પાણી, પાણી વિગેરેના આઉટ લેટ સ્થાનની અને મુલાકાતીને નગરને રૂપ ન બને તે રીતે અરજદારે પોતાના ખર્ચે નિકાલ કરવા યોગ્ય પ્રબંધ કરવો પડશે. અને તે પ્રમાણે કરવામાં ચૂક થયેથી જિલ્લા વિકાસ અધિકારીશ્રી તેમ કરી લેશે અને થયેલ ખર્ચની રકમ જમીન મહેસુલની બાકી પ્રમાણે અરજદારશ્રી વસુલ કરવાને પાત્ર થશે.

૧૩. સદરહુ પરવાનગીથી બીનખેતીમાં ફેરવવામાં આવેલ જમીન ચો.મી માં આવતી હોવાથી ૮૨૫૨૫.૦૦ **ચો.મીટરે જમીન ઉપયોગના હેતુ માટે દર ચો.મીટર ના રૂા.૦.૧૫ પ્રમાણે રૂપીયા ૧૨૩૧૮.૦૦ અંકે રૂપિયા બાર હજાર ત્રણસો અઢાર પુરા** બીનખેતી વિશેષ ધારો ઠરાવવામાં આવે છે. આ વાર્ષિક બિનખેતી ધારાની રકમ ઉપરોક્ત ઉપયોગના હેતુ માટે ૫૦ ટકા ના ધોરણે શિક્ષણ ઉપકર તથા હાલ ધોરણે પંચાયત કર તેમજ સરકાર નિયુક્ત અન્ય કરવેરા અરજદારે-ખાતેદારે ૨૦૦૫-૨૦૦૬ ના વર્ષથી દર વર્ષે આ રકમમાં ફેરફાર કરવામાં ન આવે ત્યાં સુધી ભરવા પડશે.

૧૪. નગર નિયોજકશ્રી વડોદરાએ જે શરતોએ પરવાનગી આપેલ છે તે શરતોનું પાલન કરવાની શરતોને આધિન રહી આ પરવાનગી આપવામાં આવે છે.

૧૫. સવાલવાળી જમીનના આંતરીક વિકાસ માટે લાઈટ,પાણી,ગટર,ગેસલાઈન વિગેરે મેળવવાની જવાબદારી જમીન માલીક/અરજદારની રહેશે.

૧૬. નગર નિયોજકશ્રી વડોદરાના વિકાસ નકશા મુજબ રસ્તા માટે નીયત કરેલ છૂટ રસ્તા માટે [illegible] રાખવાની રહેશે અને તેમાં કોઈપણ જાતનું વળતર મેળવવા હક્ક કરી શકશે નહી.

૧૭. [illegible] આંતરિક રસ્તાઓ ઉપર અને કોમન પ્લોટમાં કોઈને અંતરાયરૂપ ન થાય તે રીતે વૃક્ષોનું વૃક્ષારોપણ કરવું પડશે.

૧૮. સદરહુ પરવાનગીથી બીનખેતીમાં ફેરવવાની થતી જમીનનો રૂપાંતર કર ૮૨૫૨૫.૦૦ ચો.મીટર ઉપયોગના હેતુ માટે દર ચો.મીટરે રૂપિયા ૬.૦૦ પ્રમાણે રૂપીયા ૪૯૨૭૨૬.૦૦ અંકે રૂપિયા ચાર લાખ બાણું હજાર સાતસો છવ્વીસ પુરા ઠરાવવામાં આવે છે. જે તા.૧૨/૭/૨૦૦૬ ના રોજ સ્ટેટ બેન્ક ઓફ ઈન્ડિયા/વડોદરામાં જમા કરાવી ચલણ રજુ કરેલ છે.

૧૯. ઉદ્યોગ સ્થાપવા અંગે નીચે જણાવેલ શરતોનું પાલન કરવાનું રહેશે

૧. ગુજરાત પ્રદુષણ નિયંત્રણ બોર્ડનું ના વાંધા પ્રમાણપત્ર મેળવવાનું રહેશે

૨. સદર સંબંધિત એકમ ઉત્પાદન પ્રવૃત્તિના ઉદ્યોગ હેતુ સિવાય અન્ય હેતુ માટે ઉપયોગ થઈ શકશે નહીં

૩. સદર એકમ તેમાંના ઉદ્યોગ સ્થાપવા તેના અનુસંધાને કરેલ કામગીરીનો અહેવાલ આ કચેરીને દર ૬ માસે નિયમિત મોકલવાનો રહેશે

૪. સૂચિત સ્થળ જી.આઈ.ડી.સી. એસ્ટેટથી કેટલા અંતરે છે. તે ધ્યાને લઈ જી.આઈ.ડી.સી.નું ના વાંધા પ્રમાણપત્ર મેળવવાનું રહેશે

૫. ઔદ્યોગિક એકમમાં કામદારોની જગ્યાઓ પૈકી ઓછામાં ઓછી ૮૫ ટકા જગ્યાઓ સ્થાનિક વ્યક્તિઓથી ભરવાની રહેશે. જ્યારે મેનેજર કે સુપરવાઈઝર કક્ષાની જગ્યાઓ પૈકી ઓછામાં ઓછી ૬૦ ટકા જગ્યાઓ સ્થાનિક વ્યક્તિઓમાંથી ભરવાની રહેશે.

૨૦. કાર્યપાલક ઈજનેરશ્રી, નર્મદા યોજના નહેર વિભાગ નં.૧૦ વડોદરાના પત્ર નં. ન.યો.ન.વિ-૧૦/ટીબી-૧/૯૫/૧૫૧૧ તા.૧૩/૫/૨૦૦૫ થી આપેલ શરતી અભિપ્રાય મુજબના નીચેની શરતોનું પાલન કરવાનું રહેશે.

૧. જેમ આવનાર અભિગમ માટે નાળું મંજૂરી સિવાય બાંધી શકાશે નહીં.
૨. ભવિષ્યમાં નાળાની જરૂરીયાત ઊભી થશે તો અરજદારે સ્વખર્ચે મંજૂરી મેળવી બનાવવાનું રહેશે.
૩. નહેરમાંથી મંજૂરી સિવાય પાણીનો ઉપયોગ કરવા દેવામાં આવશે નહીં.
૪. નહેરને કોઈ નુકશાન થાય તેવું કોઈ કામ કરવાનું રહેશે નહીં. કરવામાં આવશે તો કાયદેસરની કાર્યવાહી હાથ ધરવામાં આવશે.

૨૧. કાર્યપાલક ઈજનેરશ્રી, નર્મદા યોજના નહેર વિભાગ નં. ૧૧ વડોદરાના પત્ર નં. ન.યો.ન.વિ.-૧૧/ ઘાંઘા-૧/૨૫/ જી ૬૪૮૧/૨૦૦૫ તા. ૨/૮/૨૦૦૫ થી આપેલ શરતી અભિપ્રાય મુજબની નીચેની શરતોનું પાલન કરવાનું રહેશે.

૧. નહેર / કાંસ ના પાણીનો ઉપયોગ કોઈ પણ પ્રકારની અવરજવર માટે કરી શકાશે નહીં.
૨. નહેર / કાંસ ના પાણીનો ઉપયોગ સરકાર સરોવર નિગમની પરવાનગી વગર કરી શકાશે નહીં.
૩. રહેઠાણ તથા ઉદ્યોગના કચરો તથા ગંદુ પાણી નહેર / કાંસની હદ રેખામાં અથવા નહેરના પાણીમાં નાખવા દેવામાં આવશે નહીં.
૪. રહેઠાણ કે ઉદ્યોગની ગટર કે ખાળકુવા નહેરની હદથી દુર રાખવાના રહેશે.
૫. કુદરતી વહેતા ચોમાસુ વરસાદના પાણીને અવરોધનું બાંધકામ કરી શકાશે નહીં.
૬. ભવિષ્યમાં નહેરને ઓળંગવા માટે ખાતેદાર તરફથી નાળા - ગરનાળાની માંગણી કરવામાં આવશે તો [illegible] આપવામાં આવશે નહીં.
૭. [illegible] પાણીથી થનાર નુકશાન સામે કોઈ રક્ષણ કે વળતર આપવામાં આવશે નહીં.
૮. નહેર / [illegible] બાંધકામને સીધી કે આડકતરી રીતે નુકશાન થાય તેવું બાંધકામ કે અન્ય કોઈ પણ પ્રકારની પ્રવૃત્તિ [illegible] નહીં.
૯. ઉપરો [illegible] શરતો ઉપરાંત ભવિષ્યમાં નિગમને યોગ્ય લાગે તેવી શરતો રાખવામાં આવે તો ખાતેદારને તે બંધનકર્તા રહેશે.

૨૨. [illegible] ને કામન ધોરણની જમીનનું હરાજીથી/બક્ષીસથી કે અન્ય કોઈ રીતે વેચાણ કે તબદીલ થઈ શકશે નહીં.

૨૩. [illegible] પાણીના ભૂગર્ભ/સંગ્રહન માટે દર મકાન/બ્લોકમાં મકાન દીઠ એક ના દરે પરકોલેટીંગ વેલ ની વ્યવસ્થા કરવાની રહેશે.

૨૪. નામદાર હાઈકોર્ટ ના સ્પે. સિવિલ એપ્લી. નં ૧૦૬૨૧/૨૦૦૭ થી અપાયેલ સુચના મુજબ તળાવ કાંસ,નહેર,નદીનાળા, અને તેના વિસ્તાર નજીક આવતી બિનખેતી થયેલ જમીનમાં બાંધકામની પરવાનગી આપતી વખતે ઉપરોક્ત આદેશમાં રાજ્ય સરકારને અમલ કરવા માટે અપાયેલ સુચનાઓનું ચુસ્ત પણે અમલ કરવાનો રહેશે.

૨૫. ઉપર પ્રમાણેની શરતો તથા સનદમાં જે શરતો હોય તેનો ભંગ કરવામાં આવશે તો જમીન મહેસુલ બાબતના કાયદાની કલમોની રૂએ બીજી કોઈપણ શિક્ષાને પાત્ર હોય તેની બાધ આવ્યા સિવાય રદ કરાવવા જિલ્લા વિકાસ અધિકારીશ્રીને અધિકાર રહેશે.

૨૬. જમીન મહેસુલ કાયદાની જોગવાઈઓ અન્વયે હુકમ બિનખેતીની પરવાનગી આપવામાં આવે છે. જેથી અન્ય કાયદા હેઠળ વિભાગના કામે જરૂરી પરવાનગી જે તે કચેરીની જવાબદારી મેળવવાની રહેશે.

૨૭. ઉપરની કલમમાં ગમે તે મંજુર કરાવ્યા વગર જ્યાં આ પરવાનગીની શરતો વિરુદ્ધ કોઈપણ ઈમારત અગર બાંધકામ કરવામાં આવશે તો જિલ્લા વિકાસ અધિકારીશ્રીએ ઠરાવેલી મુદતમાં તે કાઢી નંખાવવા અગર તો તેમાં ફેરફાર કરવાનું ફરમાવવા મુખત્યાર રહેશે. તેમ જ્યાં નામુદ કરેલા સમયમાં તે કાઢી નાંખવામાં ન આવે કે તેમાં ફેરફાર કરવામાં ના આવે તો જિલ્લા વિકાસ અધિકારીશ્રી

તેમ કરી લેવાની તજવીજ કરશે અને તે અંગે થયેલા ખર્ચની રકમ જમીન મહેસૂલની બાકી પ્રમાણે અગ્રતાક્રમે વસૂલ કરવાને પાત્ર થશે

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સચિવ
કારોબારી સમિતિ અને
જિલ્લા વિકાસ અધિકારી
વડોદરા.

પ્રતિ,
લીંક ફાર્મા કેમીકલ્સ લી.ના ડાયરેકટરશ્રી
પ્લોટ નં.૧૬૧/૧૬૨, જી.આઈ.ડી.સી. નંદેસરી,
તા.જી.વડોદરા

નકલ રવાના :-

૧. તાલુકા વિકાસ અધિકારીશ્રી પાદરા તરફ કામના કાગળો પાના નંબર ૧ થી .....સુધી સામેલ છે, તે અંગે ગામ દફતરે જરૂરી નોંધ કરાવી,માપણી કરાવવા અને હદો નક્કી કરાવવા અંગે ઘટિત તે કાર્યવાહી તથા તાલુકા નમુના નં.૨ તથા તાલુકા નમુના નં.૪ માં નોંધ કરી ઉપજ આપવા સારૂ.
૨. તલાટી કમ મંત્રીશ્રી ડુંગરાળા, તા.પાદરા, જી.વડોદરા તરફ જાણવા તથા ગામ નમુના નં.૨ માં નોંધ કરી ઉપજ નક્કી કરવા સારૂ.

નકલ જરૂરી કાર્યવાહી સારૂ રવાના :-

૧ ડી.આઈ.એલ.આર.શ્રી, કોઠી કચેરી, વડોદરા તરફ નકશા તેમજ માપણી ફી ના અસલ ચલન સાથે માપણી અંગેની કાર્યવાહી કરવા સારૂ

રવાના કર્યું
જીલ્લા વિકાસ અધિકારી
વડોદરાવતી.

ગામ ... તા. પાદરા - વડો..

બીનખેતી પ્રકારની વસૂલાતમાં ... બાકી ... [illegible] ... ૨૦-૭-૨૯ મુજબ.

બીનખેતી પરવાનગી મેળવનાર ખાતેદારનું નામ	જમીનનો તથા સર્વે નંબર	બીનખેતી પરવાનગી આપેલ જમીનનું ક્ષેત્રફળ	નિયમ મુજબ લેવાના બીનખેતી પ્રકારની દર તથા કેવા પ્રકારના બીનખેતીનો ઉપયોગ છે તેની વિગત	વસૂલ કરવાની બીનખેતી ... રકમ.	... [illegible] ... કરી તેની રકમ	કિ.મત લેવાનો હોય તો તેની રકમ.	અન્ય કોઈ વેરો વસૂલ કરવાનો હોય તો તેની રકમ.	... કોઈ ... વેરો ... લેવાના છે.	રિમાર્ક્સ-નોંધ
મોજે દુધવાડા તા.પાદરાના બ્લોક નં. ૨૨૨, ૫૨૬ ની [illegible] ... [illegible] ના ... ચાર. ભાગીદાર ... શ્રી ... [illegible] કેમીકલ્સ લીના ડીરેક્ટર	૮૨૧૨૧.૦૮ ચો.મી. ગામનો વર્ગ - શ્રી	રૂ. ... ૦૮.૧૫ [illegible]	રૂ.૧૩૧૮.૦૦ માટે ... હજાર ... ભરાવવાના બાકી છે.	[illegible] ... રૂપિયા ચાર લાખ ... હજાર ... પુરે ... ભરવાના બાકી છે. ... રકમ ના રોજ ... [illegible] ... માં ભરેલ છે. ...	રૂ. ... ૨૧૫૮.૦૦ અંકે રૂપિયા ... હજાર ... પુરા.	લોકલ ફંડ સેસ તથા સરકારી ... અન્ય ... હોય તો ...	૨૦૦૫-૨૦૦૬ થી ... ભાર ... આધીન.	... બીનખેતીના વાર્ષિક ... રૂપિયા ૨.૪૬,૩૭૦ તા. ... ના રોજ ... માં ભરેલ છે. ...

સ્વાના...

જીલ્લા વિકાસ અધિકારી
વડોદરાવતી.

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ASSOCIATED DYESTUFF PVT. LTD

S.NO:466/2, VILLAGE: DUDHWADA, TA: PADRA, DIST: VADODARA

Enclosure-20

Site Plan & Layout Plan


SURVEY PLAN OF SUR NO 522/PART
AREA
SURVEYED & PREPARATION BY :
MS. BANSHI K. SHETH
42.89
37.53
27.62
206.02
141.89
20.00
19.70
18.54
51.05