

ANNEXURE-I

PRODUCTION DETAILS

Sr. No.	Name of the Products	CAS no. /CI no.	Quantity MT/Month	End-use of products
1.	Acid Black 194	61931-02-0	300	Printing and Dyeing in Textile Industry
2.	Acid Black 172	61847-77-6		
3.	Reactive Black B	17095-24-8/ Reactive Black 5		
4.	Reactive Black WNN/NN/NG	17095-24-8 Mixed Product		
	Total		300	

ANNEXURE-II

PRODUCT WISE RAW MATERIAL DETAILS

Sr. No.	Name of the Products	Raw Material Name	CAS no. /CI no.	Quantity MT/Month
1.	Acid Black 194	6-Nitro	50412-00-5	0.416
		Beta Naphthol	135-19-3	0.217
		Salicylic Acid	69-72-7	0.025
		BCS	111-76-2	0.205
		Caustic Flakes	1310-73-2	0.292
		Ice	124-38-9	0.300
		water	7732-18-5	1.050
		Octanol oil	111-87-5	1.0
2.	Acid Black 172	6 Nitro	50412-00-5	0.4
		Beta Naphthol	135-19-3	0.3
		Salicylic Acid	69-72-7	0.045
		BCS	111-76-2	0.275
		Caustic Soda	1310-73-2	0.22
3.	Reactive Black B	Vinyl Sulphone	42968-22-1	0.46
		H Acid	90-20-0	0.25
		Hydrochloric Acid	7647-01-0	0.198
		Sodium Bicarbonate	144-55-8	0.220
		Sodium Nitrate	7631-99-4	0.115
		HCL 30%	7647-03-0	0.198
		Tamol	-	0.006
		Octanol oil	111-87-5	0.003
		Ice	124-38-9	0.650
		water	7732-18-5	1.5
4.	Reactive Black WNN/NN/NG	Sulfo V.S.	42986-22-1	0.083
		MPDSA	88-63-1	0.024
		J-Acid	87-02-5	0.026
		V.S.	42968-22-1	0.387
		H-Acid	90-20-0	0.174
		Savitone V.S.	-	0.008
		NaNO ₂	7632-00-0	0.113
		Sodium Bicarbonate	144-55-8	0.211
		HCL 30%	7647-03-0	0.207
		Ice	124-38-9	1.7
		Octanol oil	111-87-5	0.002
		Water	7732-18-5	0.425

ANNEXURE-III

MANUFACTURING PROCESS

All the dyes manufactured here are manufactured by same type of processes. The basic difference in the process to achieve different product is addition of raw material according to stoichiometric requirement and the temperature at which the reaction is carried out. The typical process for manufacturing of dyes is as follows:

1. Diazotization:

Primary Diazo chemical like (6, nitro, sulfo V S, Vinyl Sulphone etc) are to be diazotized in acidic medium using HCL and Reducing temperature by Ice and Sodium Nitrite to be added to complete diazo Diazotization. This diazo is then to be used to couple with various coupling components.

2. Coupler solution and Coupling:

Coupler solution are to be prepared by suspending coupling components like (H-Acid/J-Acid/MPDSA, beta naphthol etc) are suspended in ice and desired pH is to be adjusted by using Soda Bicarbonate into ready coupler solution. Diazo components are added and stirring is to be done upto completion of coupling. This procedure is to be carried out once or twice as per the product.

3. Metallization (optional) :

The ready dye solution obtained from coupling procedure is subject to metallization using Metal Salt like BCS to finish the metallization reaction.

4. Spray Drying :

The concentrated mass produced after all the process is transferred into spray dryer holding tank and then sprayed.

5. Strength Equalization and Standardization :

The said obtained crude due strength into be equalization by adding salt and then to be blended to obtain as per the parties standard requirement.

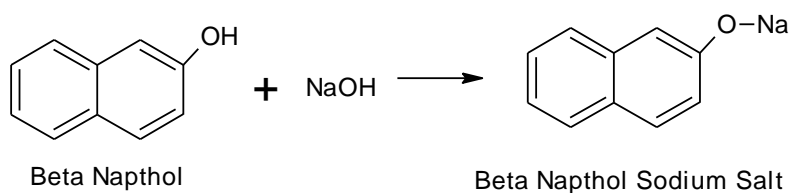
6. Packing:

The standard dye is to be packed and labeled as per party requirement.

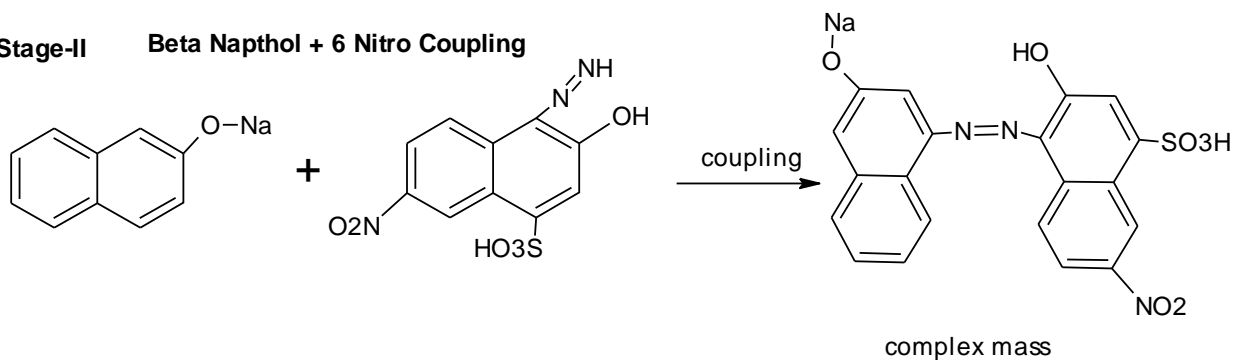
CHEMICAL PROCESSES

1. Acid Black- 194

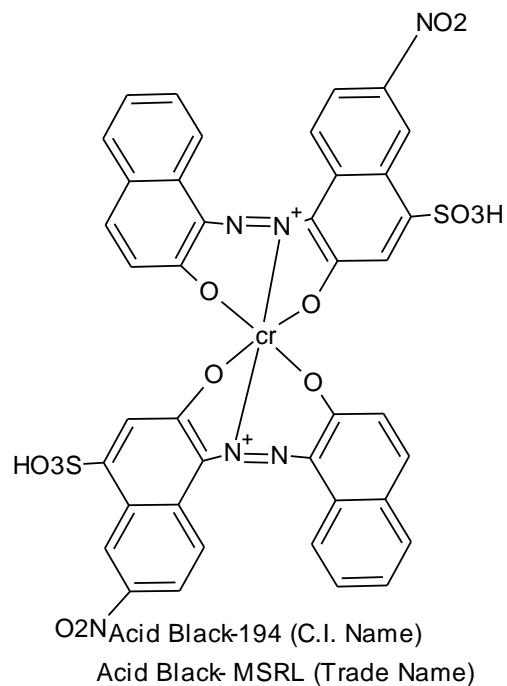
Stage-I Beta Napthol Solution



Stage-II Beta Napthol + 6 Nitro Coupling

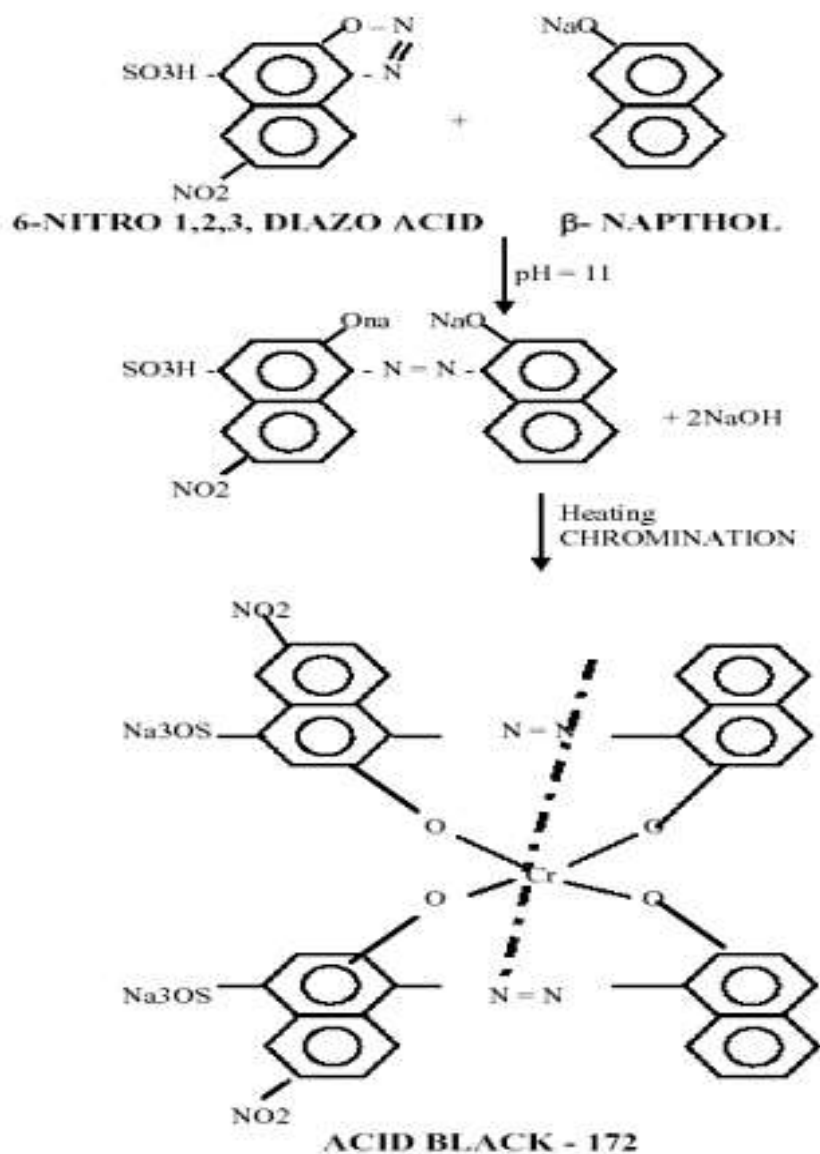


Stage- III Metalisation of complex mass



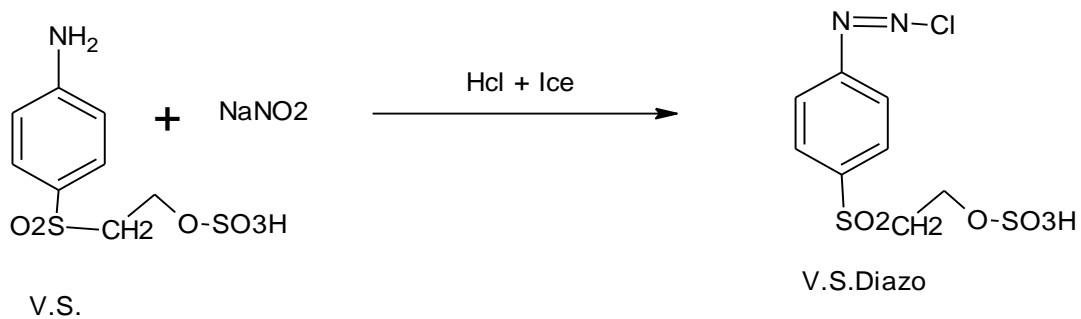
2. Acid Black- 172

(a) 6-nitro is slurry at 0⁰ C and clear solution of β- Naphthol is dump

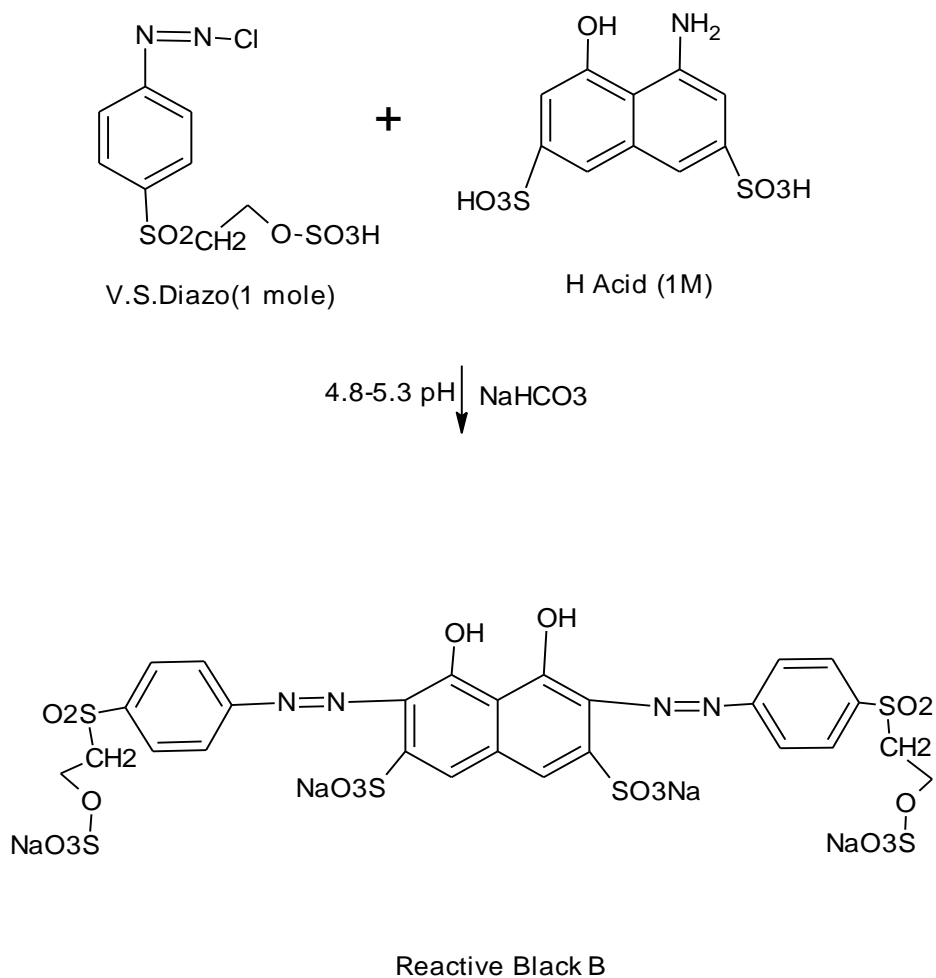


3. Reactive Black-B

Stage-I V.S. (Vinyle sulfone Ester) Diazo



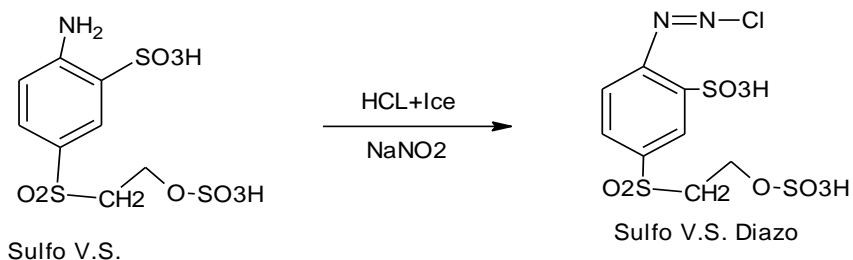
Stage- II Coupling V.S. Diazo and and H Acid



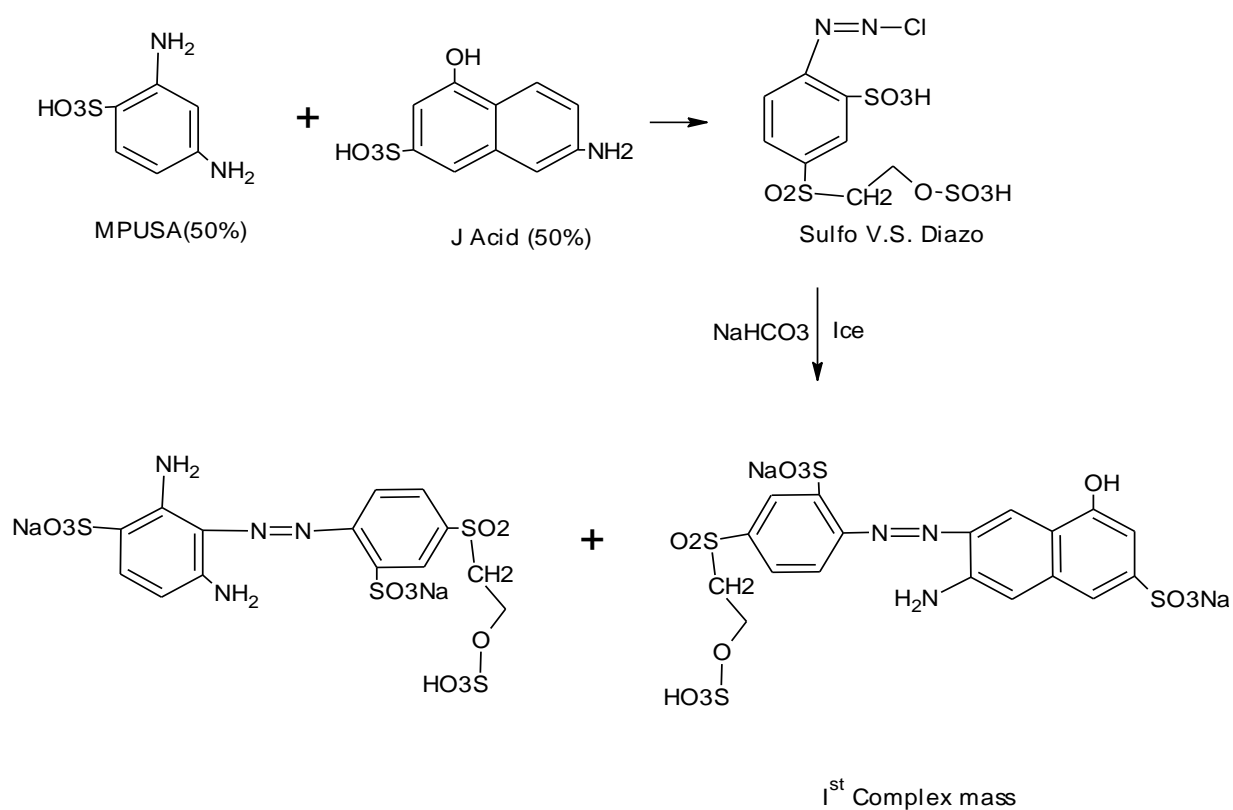
4. Reactive Black-WNN

Part: A (Orange Tonner)

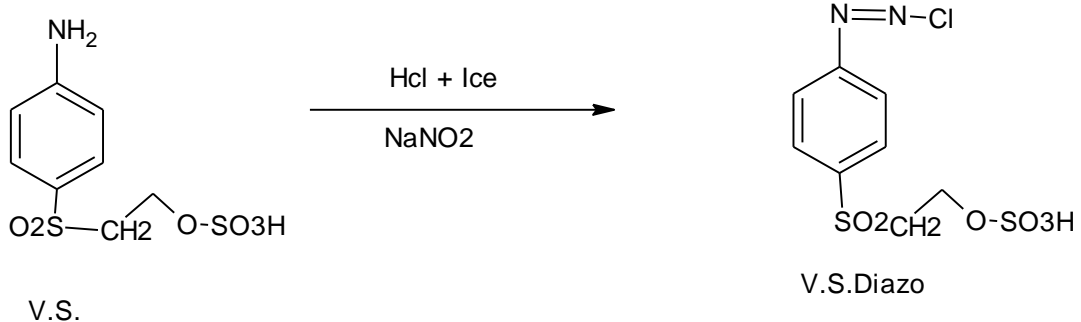
Stage- I S.V.S. (Sulfo vinyne Sulfone) Diazo



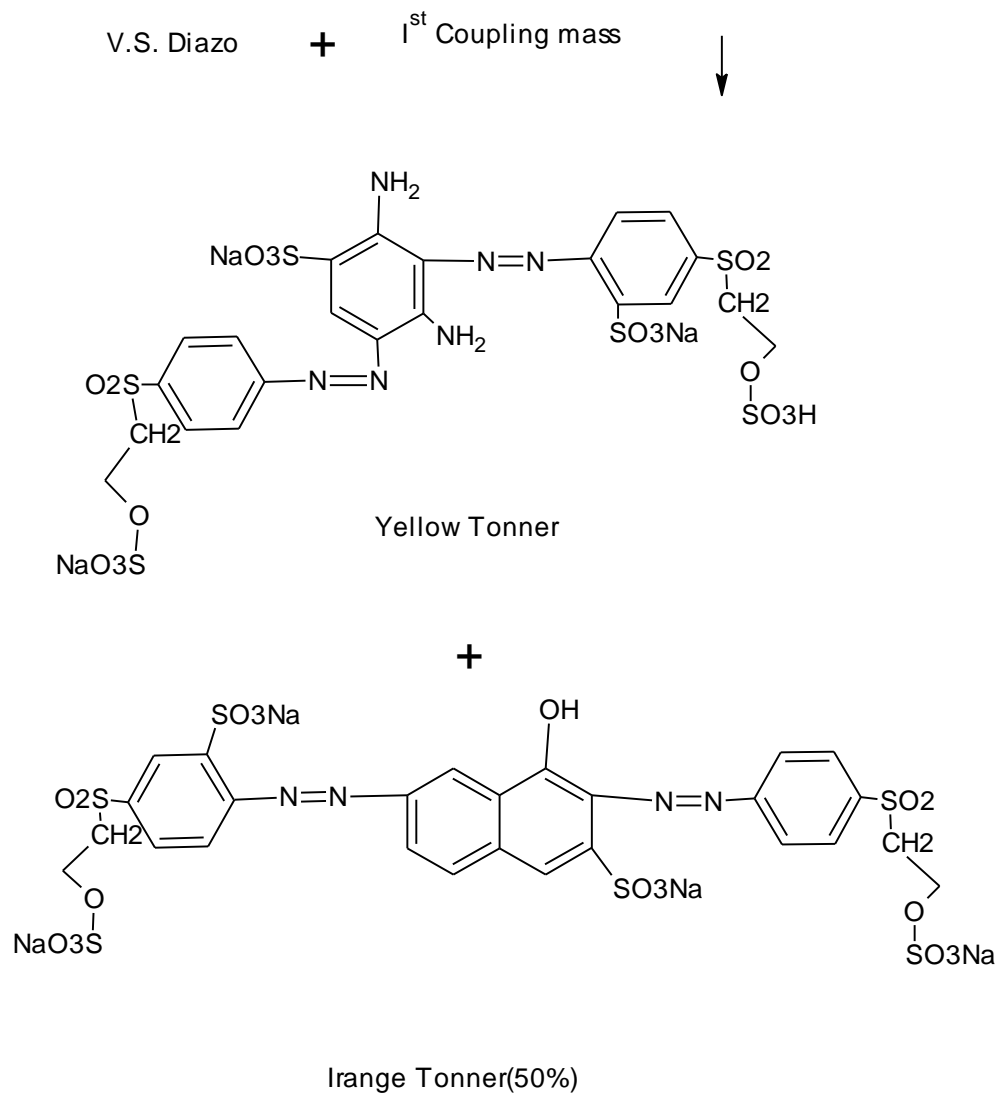
Stage- II Coupling of MPDSA(50%) and J-Acid(50%)



Stage- III V.S.(Vinyl Sulfone Ester) Diazo

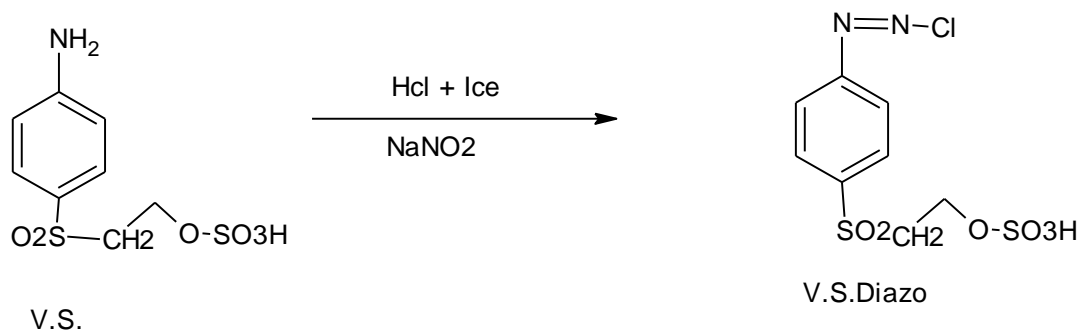


Stage- IV Coupling of Ist Complex mass and V.S. Diazo

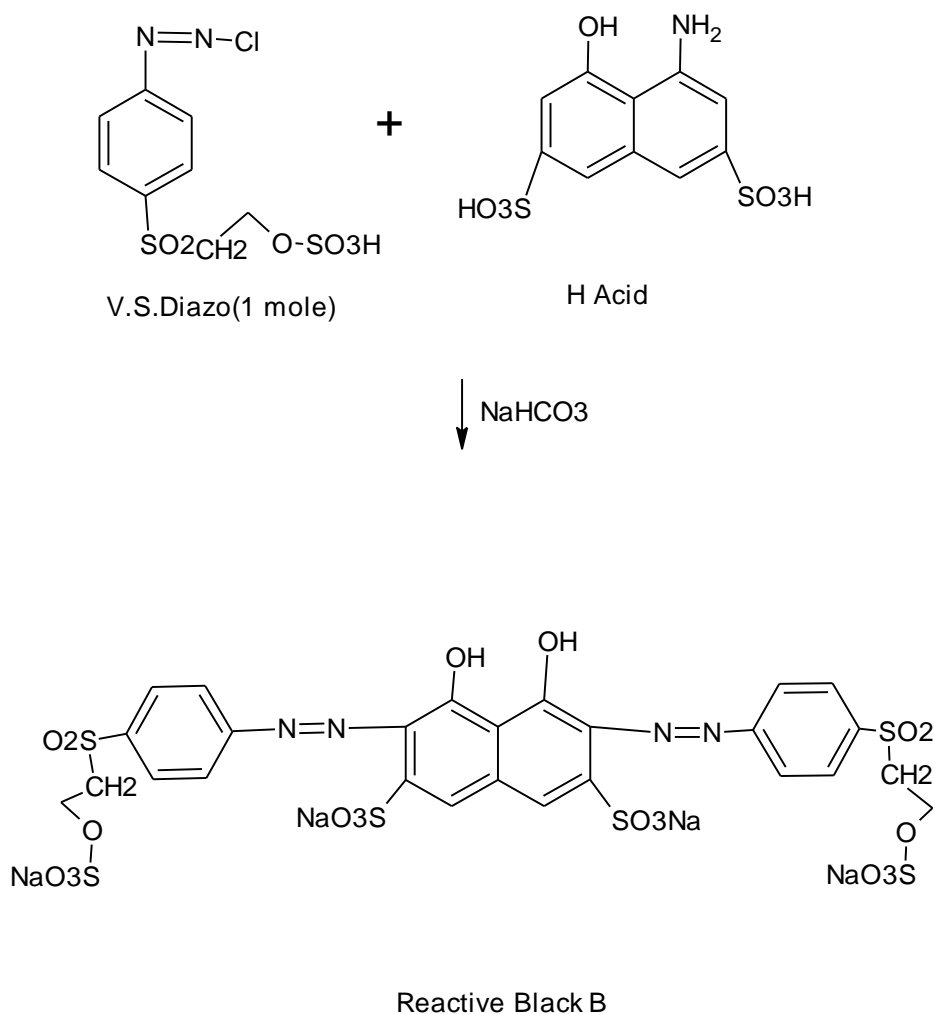


Part: B Reactive Black B

Stage- I V.S. (Vinyle sulfone Ester) Diazo



Stage- II Coupling V.S. Diazo and and H Acid



ANNEXURE-IV

WATER BALANCE

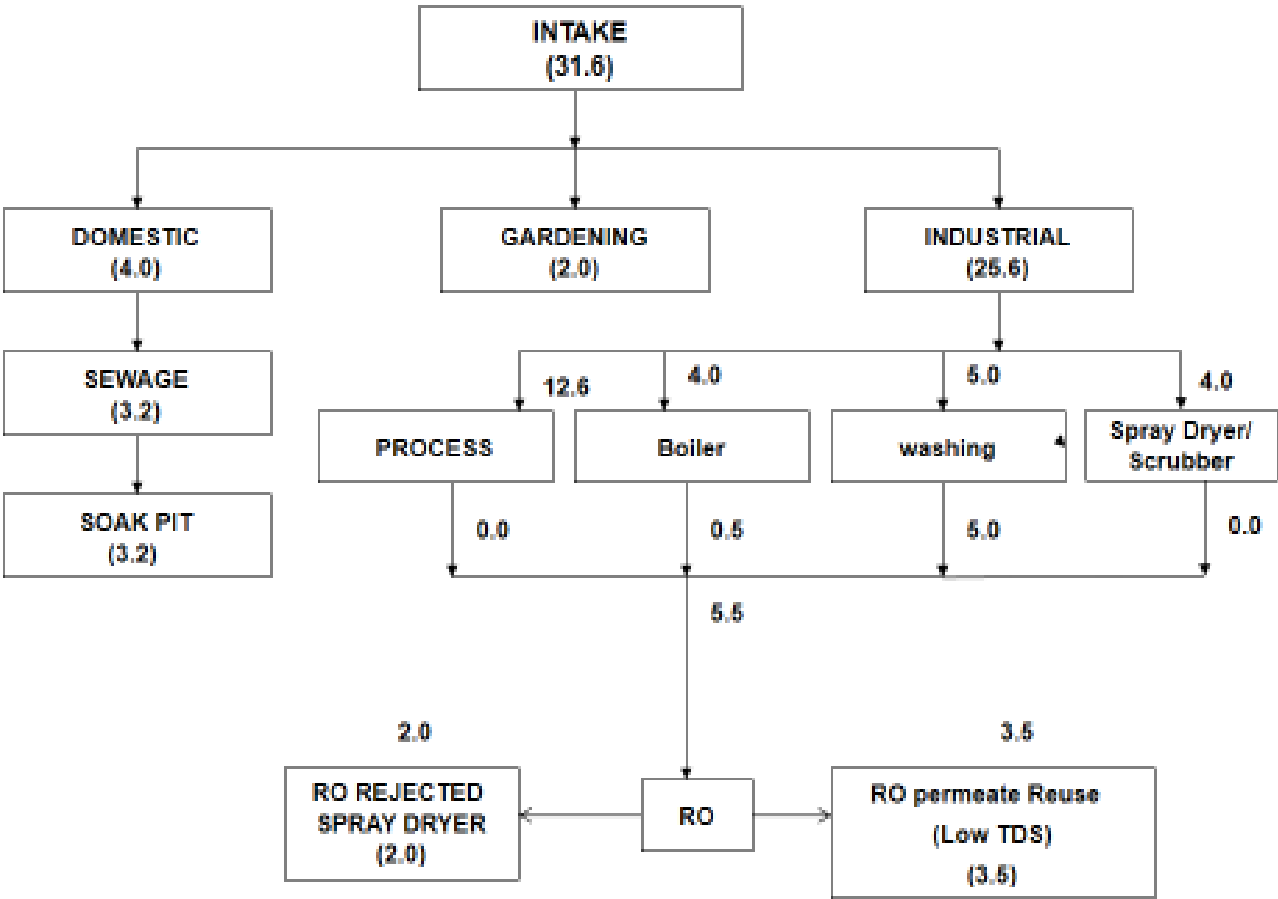
Water Consumption Details:

Category	KLD	Remarks
(A) Domestic	4.0	-
(B) Gardening	2.0	-
(C) Industrial		
Process	12.6	-
Washing	5.0	-
Boiler	4.0	-
Cooling	0.0	-
Spray Dryer/ Scrubber	4.0	-
Industrial Total	25.6	-
Total (A + B + C)	31.6	-

Wastewater Generation Details:

Category	KLD	Remarks
(A) Domestic	3.2	-
(B) Gardening	0.0	-
(C) Industrial		
Process	0.0	-
Washing	5.0	-
Boiler	0.5	-
Cooling	0.0	-
Others	0.0	-
Industrial Total	5.5	3.5 RO Permeate to reuse
Total (A + B + C)	8.7	-

FLOW DIAGRAM OF WATER BALANCE



Note: All figures are in KL/Day

ANNEXURE-V
DETAILS OF AIR POLLUTION CONTROL SYSTEM

Flue Gas Emission

Sr. no.	Source of emission With Capacity	Stack Height (meter)	Type of Fuel	Quantity of Fuel MT/Day	Type of emissions i.e. Air Pollutants	Air Pollution Control Measures (APCM)
1	Hot Air Generator 3000 Kcal	17	Imported Coal	17.0 MT/day	PM/SO ₂ /NO _x	Cyclone Separator +Bag Filter
2	Boiler 3.0 Ton	13	Imported Coal	2.5 MT/day	PM/SO ₂ /NO _x	Cyclone Separator +Bag Filter

Process Gas Emission

Sr. no.	Source of emission	Stack/Vent Height (meter)	Air Pollution Control Measures (APCM)	Pollutant
1	Spray Dryer (Proposed)	20	Cyclone Separator + Wet Scrubber + Secondary scrubber	PM/SO ₂ /NO _x

ANNEXURE-VI

DETAILS OF HAZARDOUS WASTE GENERATION AND DISPOSAL FACILITY

Sr. no.	Type/Name of Hazardous waste	Source of generation	Category and Schedule as per HW Rules.	Quantity (MT/Annum)	Disposal Method
1	Used oil	D.G.Set / Plant Machineries	5.1	0.05	Collection, storage, Reuse within premises.
2	Discarded Containers	Raw material	33.3	5.0	Used for reuse or returned back to supplier or reuse in premises or sell to actual user.

ANNEXURE VII

POWER REQUIREMENT OF THE PLANT

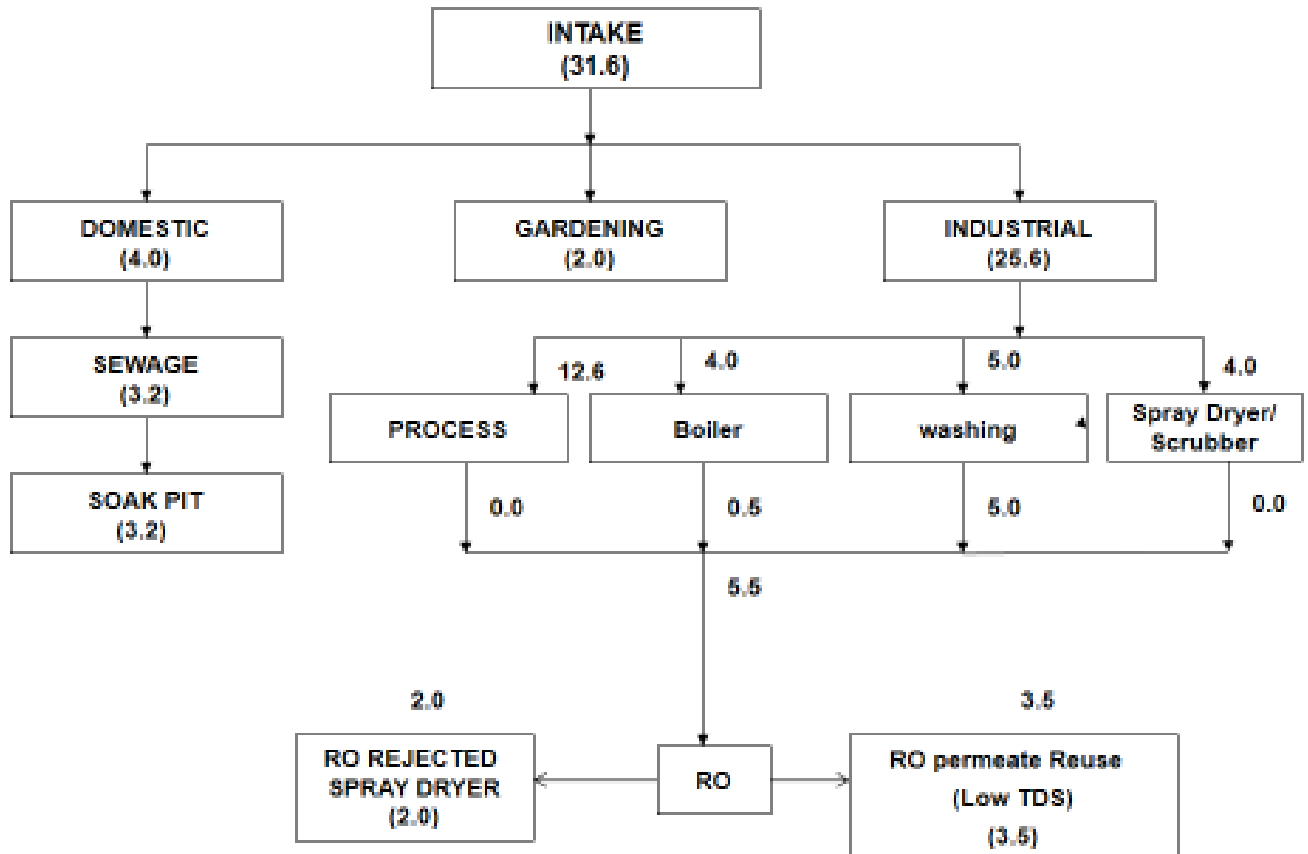
Sr. No.	Total (KW) Proposed	Source of Supply
1.	500	UGVCL

ANNEXURE-VIII

EFFLUENT TREATMENT PLANT

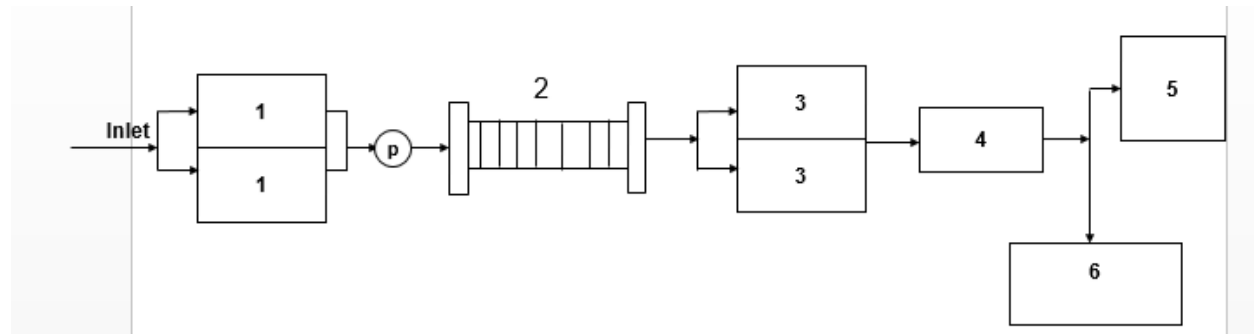
Waste Water generation & Management plan

- ❖ The total waste water generations from Industrial will be 5.5 KLD. The waste water shall generate mainly from process cleaning water. The waste water will be treated in ETP and R.O. from where 3.5 KLD of R.O permeate shall be reused in process again and 2.0 KLD of R.O. rejected shall be evaporated by spray dryer & dyes will be recovered from the wastewater.
- ❖ 3.2 KLD Domestic effluents shall be disposed through septic tank & Soak pit.



Note: All figures are in KL/Day

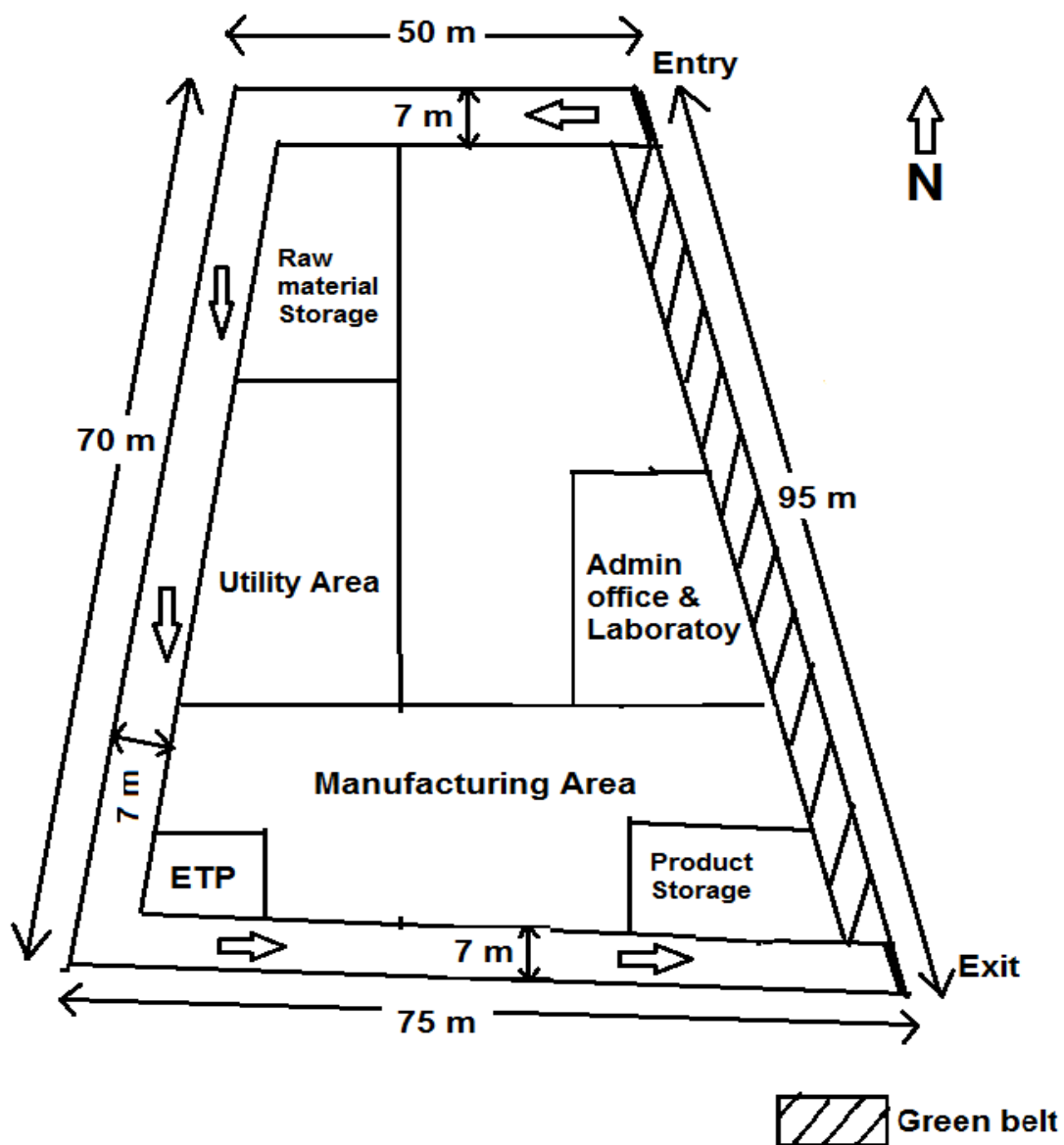
R.O. Treatment System



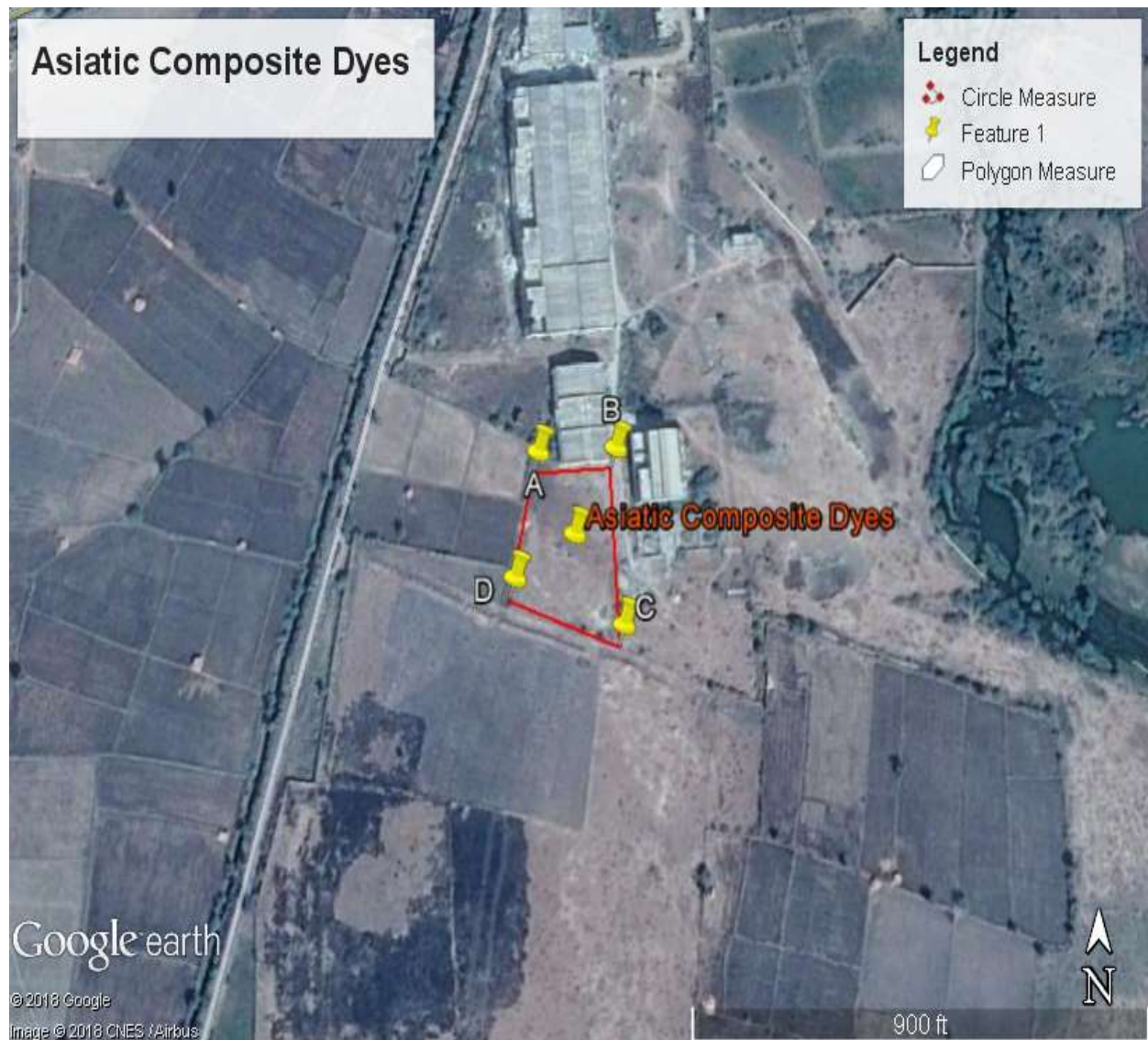
Sr. No.	Name of Unit	Size (m)	Capacity (Cu. m)	Detention Time (Hr.)
1	Collection Tank	2.75 x 2.5 x 1 x 2 no.	11.0	48
2	Filter Press	0.7 x 0.7 x 1.0	0.45	7
3	Holding Tank	2.5 x 2.5 x 1.0 x 2 no.	10.0	43
4	R.O.	1 x 1 x 1.5 x 1 no.	12	-
5	Collection tank for Reuse	1 x 1 x 1 x 1	4.0	30
6	Spray Dryer for dyes recovery	0.6 dia x 1.25 m	-	-

ANNEXURE-IX

PLANT LAYOUT



(GOOGLE MAP)



Latitude 22°54'10.02"N

Longitude 72°14'47.54"E