

BRIEF SUMMARY OF PROJECT

FOR

PROPOSED PIGMENTS & DYES MANUFACTURING UNIT

of

M/s. COSMIC PIGMENTS & INTERMIDIATES (UNIT-I)
SURVEY NO. 202/6 PAIKY, LUNEJ, KHAMBHAT, ANAND,

Prepared by



NABL Accredited Testing Laboratory
ISO 9001:2008 Certified Company

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BRIEF SUMMARY OF THE PROJECT

1.1 Project Details

M/s. Cosmic Pigments & Intermediates (Unit-I) proposes Pigments & Dyes Manufacturing Unit at Survey No. 202/6 Paiky, Sokhda, Khambhat, Dist: Anand, Gujarat-388620.

1.1.1 List of Products along with Production Capacity

Sr.No of Total Prod ucts	Cate gory wise Sr.N o. of Prod ucts	Grou p wise Sr.N o. of Prod ucts	Name of the Products	CAS no. / CI no.	Quanti ty MT/M onth	LD50 /LC50
1.Total No. of Products : Category : A+B = 147;						
Total Production capacity of All Products : 1200 MT/Month						
Category-A: Pigments (Group 1+2+3+4+5 = 106)						
Group-1: Pigment Red = 49						
1	1	1	Pigment Red 2	6041-94-7	200	LD50 Oral, Rat 8110 mg/kg
2	2	2	Pigment Red 3	2425-85-6		LD50 Oral, Rat 8180 mg/kg
3	3	3	Pigment Red 4	2814-77-9		LD50 Oral, Rat 8140 mg/kg
4	4	4	Pigment Red 5	6410-41-9		LD50 Oral, Rat 8190 mg/kg
5	5	5	Pigment Red 12	6410-32-8		LD50 Oral, Rat 8160 mg/kg
6	6	6	Pigment Red 14	6471-50-7		NA
7	7	7	Pigment Red 38	6358-87-8		dermal route (LD50 > 2000 mg/kg bw)
8	8	8	Pigment Red 48:1	7585-41-3		LD50 Oral, Rat 8160 mg/kg
9	9	9	Pigment Red 48:2	7023-61-2		LD50 Oral, Rat 8190 mg/kg
10	10	10	Pigment Red 48:3	15782-05-5		LD50 Oral, Rat 8130 mg/kg
11	11	11	Pigment Red 48:4	5280-66-0		LD50 Oral, Rat 8160 mg/kg
12	12	12	Pigment Red 48:5	N.A.		NA
13	13	13	Pigment Red 49	1248-18-6		NA
14	14	14	Pigment Red 49:1	1103-38-4		NA
15	15	15	Pigment Red 49:2	1103-39-5		NA
16	16	16	Pigment Red 49:3	6371-67-1		NA
17	17	17	Pigment Red 52:1	17852-99-2		NA
18	18	18	Pigment Red 52:2	12238-31-2		NA
19	19	19	Pigment Red 53	2092-56-0		NA
20	20	20	Pigment Red 53:1	5160-02-1.		LD50 Oral, Rat 8190 mg/kg
21	21	21	Pigment Red 53:3	73263-40-8		L.D.50 ACUTE ORAL(RATS) : ABOUT 5,000mg/KG
22	22	22	Pigment Red 57:1	5281-04-9.		LD50 Oral, Rat 8140 mg/kg
23	23	23	Pigment Red 63:1	6417-83-0		NA
24	24	24	Pigment Red 63:2	35355-77-2		LD50 rat (oral): > 2.000 mg/kg
25	25	25	Pigment Red 81	12224-98-5		LD50 rat : 8260 mg/kg
26	26	26	Pigment Red 81:1	80083-40-5		LD50 rat (oral): > 2.000 mg/kg

27	27	27	Pigment Red 81:x	63022-06-0		LD50 rat (oral): > 2.000 mg/kg
28	28	28	Pigment Red 81:y	N.A.		LD50 rat (oral): > 2.000 mg/kg
29	29	29	Pigment Red 81:2	75627-12-2		LD50 rat (oral): > 2.000 mg/kg
30	30	30	Pigment Red 81:3	68310-07-6		LD50 rat (oral): > 2.000 mg/kg
31	31	31	Pigment Red 81:4	85959-61-1		LD50 rat (oral): > 2.000 mg/kg
32	32	32	Pigment Red 112	6535-46-2		LD50 Oral, Rat 8290 mg/kg
33	33	33	Pigment Red 122	980-26-7		LD50 Oral, Rat 8290 mg/kg
34	34	34	Pigment Red 123	24108-89-2		LD50 rat (oral): > 2.000 mg/kg
35	35	35	Pigment Red 144	5280-78-4		LD50 Oral, Rat 8380 mg/kg
36	36	36	Pigment Red 146	5280-68-2		LD50 Oral, Rat 8360 mg/kg
37	37	37	Pigment Red 168	4378-61-4		NA
38	38	38	Pigment Red 169	12237-63-7		LD50 Oral, Rat 5000 mg/kg
39	39	39	Pigment Red 170	2786-76-7		LD50 Oral, Rat 8270 mg/kg
40	40	40	Pigment Red 175	6985-92-8		LD50 Oral, Rat 8350 mg/kg
41	41	41	Pigment Red 176	12225-06-8		LD50 Oral, Rat 8380 mg/kg
42	42	42	Pigment Red 177	4051-63-2		LD50 Oral, Rat 8340 mg/kg
43	43	43	Pigment Red 178	3049-71-6		LD50 Species: rat Value: > 5,000 mg/kg
44	44	44	Pigment Red 179	5521-31-3		LD50 Oral, Rat 8290 mg/kg
45	45	45	Pigment Red 188	61847-48-1		LD50 rat (oral): > 2.000 mg/kg
46	46	46	Pigment Red 202	3089-17-6		LD50 Oral, Rat 8360 mg/kg
47	47	47	Pigment Red 254	122390-98-1		LD50 Oral, Rat 8380 mg/kg
48	48	48	Pigment Red 256	79102-65-1		Oral LD50: >10 g/kg (rats) practically non-toxic
49	49	49	Pigment Red 264	122390-98-1		LD50 Oral, Rat 8320 mg/kg
Group-2: Pigment Yellow = 32						
50	50	1	Pigment Yellow 1	2512-29-0	200	LD50 Oral, Rat. >10000mg/kg
51	51	2	Pigment Yellow 3	6486-23-3		LD50 Oral, Rat 8252mg/kg
52	52	3	Pigment Yellow 12	6358-85-6		LD50 Oral, Rat .>5000mg/kg
53	53	4	Pigment Yellow 13	5102-83-0		LD50 Oral, Rat .>5000mg/kg
54	54	5	Pigment Yellow 14	5468-75-7		LD50 Oral, Rat .>5000mg/kg
55	55	6	Pigment Yellow 16	5979-28-2		Not Listed
56	56	7	Pigment Yellow 17	4531-49-1		LD50 Oral, Rat 8230 mg/kg
57	57	8	Pigment Yellow 61	12286-65-6		LD50 Oral, Rat 8160 mg/kg
58	58	9	Pigment Yellow 62	12286-66-7		LD50 rat (oral): > 5,000 mg/kg
59	59	10	Pigment Yellow 63	14569-54-1		Not Listed
60	60	11	Pigment Yellow 65	6528-34-3		LD50 Oral, Rat 8230 mg/kg
61	61	12	Pigment Yellow 73	13515-40-7		LD50 Oral, Rat 8190 mg/kg
62	62	13	Pigment Yellow 74	6358-31-2		LD50 Oral, Rat 8260 mg/kg
63	63	14	Pigment Yellow 83	5567-15-7		LD50 Oral, Rat 8390 mg/kg
64	64	15	Pigment Yellow 93	5580-57-4		LD50 Oral, Rat 14000 mg/kg
65	65	16	Pigment Yellow 97	12225-18-2		LD50 Oral, Rat 8250 mg/kg

66	66	17	Pigment Yellow 101	2387-03-3.		LD50 rat (oral): > 2.000 mg/kg
67	67	18	Pigment Yellow 120	29920-31-8		oral route (LD50 > 15 000 mg/kg bw)
68	68	19	Pigment Yellow 121	61968-85-2		NA
69	69	20	Pigment Yellow 138	30125-47-4		LD50 rat (oral): > 5.000 mg/kg
70	70	21	Pigment Yellow 139	36888-99-0		LD50 Oral, Rat 2000 mg/kg
71	71	22	Pigment Yellow 151`	31837-42-0		LD50 Oral, Rat 8330 mg/kg
72	72	23	Pigment Yellow 153	68859-51-8		NA
73	73	24	Pigment Yellow 154	68134-22-5		LD50 Oral, Rat 8250 mg/kg
74	74	25	Pigment Yellow 155	68516-73-4		NA
75	75	26	Pigment Yellow 174	78952-72-4		LD50 Oral, Rat =980mg/kg
76	76	27	Pigment Yellow 180	77804-81-0		LD50 Oral, Rat 5000mg/kg
77	77	28	Pigment Yellow 181	74441-05-7		oral route (LD50 > 5000 mg/kg bw)
78	78	29	Pigment Yellow 182	67906-31-4		NA
79	79	30	Pigment Yellow 183	23792-68-9		LD50 Species: rat (male/female) Value: > 5,000 mg/kg
80	80	31	Pigment Yellow 191	129423-54-7	Oral LD50 value of 5 mg/kg or greater in rats.	
81	81	32	Pigment Yellow 191:1	154946-66-4	LD50 Oral, Rat 2000mg/kg	
Group-3: Pigment Orange = 8						
82	82	1	Pigment Orange 5	3468-63-1	200	LD50 Oral, Rat 8120 mg/kg
83	83	2	Pigment Orange 13	3520-72-7		LD50 Oral, Rat 8190 mg/kg
84	84	3	Pigment Orange 16	6505-28-8		LD50 Oral, Rat 8120 mg/kg
85	85	4	Pigment Orange 34	15793-73-4		LD50 Oral, Rat 8250 mg/kg
86	86	5	Pigment Orange 36	12236-62-3		LD50 Oral, Rat 8210 mg/kg
87	87	6	Pigment Orange 43	4424-06-0		LD50 Oral, Rat 2000 mg/kg
88	88	7	Pigment Orange 62	52846-56-7		LD50 Oral, Rat 8370 mg/kg
89	89	8	Pigment Orange 64	72102-84-2		LD50 Oral, Rat 8270 mg/kg
Group-4: Pigment Blue = 10						
90	90	1	Pigment Blue 1	1325-87-7	200	NA
91	91	2	Pigment Blue 15	147-14-8		LD50 Oral, Rat. >3200mg/kg
92	92	3	Pigment Blue 15:1	147-14-8		LD50 Oral, Rat. >3200mg/kg
93	93	4	Pigment Blue 15:2	147-14-8		LD50 Oral, Rat. >3200mg/kg
94	94	5	Pigment Blue 15:3	147-14-8		LD50 Oral, Rat 2000mg/kg
95	95	6	Pigment Blue 15:4	147-14-8		LD50 Oral, Rat 2000mg/kg
96	96	7	Pigment Blue 15:6	147-14-8		LD50 Oral, Rat 2000mg/kg
97	97	8	Pigment Blue 16	574-93-6		LD50 Oral, Rat 2000mg/kg
98	98	9	Pigment Blue 60	81-77-6		LD50 Oral, Rat > 980 mg/kg
99	99	10	Pigment Blue 62	57485-98-0		LD50 Oral, Rat 2000mg/kg
Group-5: Pigment Violet = 7						
100	100	1	Pigment Violet 1	1326-03-0	200	LD50 Oral, Rat 2000mg/kg
101	101	2	Pigment Violet 1x	N.A.		LD50 Oral, Rat 2000mg/kg
102	102	3	Pigment Violet 3	1325-82-2		LD50 Oral, Rat 2000mg/kg

103	103	4	Pigment Violet 19	1047-16-1		LD50 Oral, Rat 8420 mg/kg
104	104	5	Pigment Violet 23	6358-30-1		LD50 Oral, Rat 2000mg/kg
105	105	6	Pigment Violet 27	12237-62-6		LD50 Oral, Rat. >3200mg/kg
106	106	7	Pigment Violet 29	81-33-4		LD50 Oral, Rat 2000mg/kg
Total of Category-A (Group 1 + 2 + 3 + 4 + 5)					1000	
Category-B: Solvent Dyes						
		Group-1: Red Solvent Dyes = 13			200	
107	1	1	Solvent Red 19E	6368-72-5		NA
108	2	2	Solvent Red 23	85-86-9		NA
109	3	3	Solvent Red 24	85-83-6		Acute oral toxicity: LD50(Rat): 8110mg/kg
110	4	4	Solvent Red 52	81-39-0		Acute oral toxicity: LD50(Rat): 8160mg/kg
111	5	5	Solvent Red 111	82-38-2		Acute Toxicity: Oral-dog LD 50:>8 g/kg
112	6	6	Solvent Red 135	20749-68-2		Acute oral toxicity: LD50(Rat): 8260mg/kg
113	7	7	Solvent Red 151	144013-41-1		NA
114	8	8	Solvent Red 168	71832-19-4		Acute oral toxicity: LD50(Rat): 8220mg/kg
115	9	9	Solvent Red 169	27354-18-3		Acute oral toxicity: LD50(Rat): 8230mg/kg
116	10	10	Solvent Red 179	479-27-6		Acute oral toxicity: LD50(Rat): 8260mg/kg
117	11	11	Solvent Red 197	52372-39-1		Acute oral toxicity: LD50(Rat): 8190mg/kg
118	12	12	Solvent Red 207	15958--69-6		NA
119	13	13	Solvent Red 227	2944-28-7		NA
		Group-2: Yellow Solvent Dyes = 12				
120	14	1	Solvent Yellow 2	6370-43-0		NA
121	15	2	Solvent Yellow 14	842-07-9		NA
122	16	3	Solvent Yellow 18	6407-78-9		NA
123	17	4	Solvent Yellow 33	8003-22-3		Skin, rabbit: LD50 = >2 gm/kg.
124	18	5	Solvent Yellow 43	19125-99-6		NA
125	19	6	Solvent Yellow 44	2478-20-8		NA
126	20	7	Solvent Yellow 72	61813-98-7		NA
127	21	8	Solvent Yellow 114	7576-65-0		NA
128	22	9	Solvent Yellow 131	71819-82-4		NA
129	23	10	Solvent Yellow 157	27908-75-4		Acute oral toxicity: LD50(Rat): 8200mg/kg
130	24	11	Solvent Yellow 163	106768-99-4		LD50 rat (oral): > 2,000 mg/kg (OECD Guideline 423)
131	25	12	Solvent Yellow 167	N.A.		NA
		Group-3: Orange Solvent Dyes = 3				
132	26	1	Solvent Orange 60	61969-47-9		Acute oral toxicity: LD50(Rat):

					8090mg/kg
133	27	2	Solvent Orange 63	16294-75-0	Acute oral toxicity: LD50(Rat): 8190mg/kg
134	28	3	Solvent Orange 105	31482-56-1	LD50 Intraperitoneal Rat=3060 MG/KG
Group-4: Blue Solvent Dyes = 6					
135	29	1	Solvent Blue 35	17354-14-2	NA
136	30	2	Solvent Blue 36	14233-37-5	Acute oral toxicity: LD50(Rat): 8080mg/kg
137	31	3	Solvent Blue 97	61969-44-6	Acute oral toxicity: LD50(Rat): 8200mg/kg
138	32	4	Solvent Blue 101	6737-68-8	NA
139	33	5	Solvent Blue 102	15403-56-2	NA
140	34	6	Solvent Blue 104	116-75-6	Not acutely toxic via the oral route (LD50 > 5000 mg/kg bw)
Group-5: Violet Solvent Dyes = 4					
141	35	1	Solvent Violet 13	81-88-1	LD50 Oral, Rat. >500mg/kg
142	36	2	Solvent Violet 14	67577-84-8	Acute oral toxicity: LD50(Rat): 8110mg/kg
143	37	3	Solvent Violet 38	63512-14-1	NA
144	38	4	Solvent Violet 59	6408-72-6	Acute oral toxicity: LD50(Rat): 8220mg/kg
Group-6: Green Solvent Dyes = 3					
145	39	1	Solvent Green 3	128-80-3	LD50 = 3660 mg/kg (Rat)
146	40	2	Solvent Green 28	71839-01-5	LD50 = 3660 mg/kg (Rat)
147	41	3	Solvent Green 33	10671-57-8	NA
Total of Category-B (Group 1 + 2 + 3 + 4 + 5 + 6)					200
Total All Products Category - A(106) + Category-B (41) = 147					1200

1.2 Water Requirement, Waste Water Generation and Treatment

Total raw water requirement will be 393 KL/day (Industrial: 377 KL/day + Domestic: 8 KL/day + Gardening: 8 KL/day) which will be met Ground water. Total waste water generation will be 281 KL/day (Industrial: 275 KL/day + Domestic: 6 KL/day). Waste water will be treated Effluent Treatment Plant (ETP) of primary treatment & tertiary treatment facility with RO & MEE. 121 KLD of dilute stream of effluent will be sent RO and RO permeate @ 83 KLD will be reused in process. 190 KLD of Concentrated stream of effluent (Process: 152 KLD + RO Reject: 83 KLD) will be treated in ETP and sent to own MEE, 184 KLD MEE condensate will recycled.

1.3 Air Pollution Source and Control Management

Sr. No.	Source of emission With Capacity	Stack Height (meter)	Quantity in No.	Type of Fuel	Quantity of Fuel MT/Day	Type of emissions i.e. Air Pollutants	Air Pollution Control Measures (APCM)
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1	Hot Air Gen. (200000 kcal)	32 Mtrs	4 (U2-8)	PNG	320 Cu.mt./ Hrs	PM SO ₂ NOx	Adequate stack height
2	Steam Boiler 5 Ton/hr.	32 Mtrs	1	Briquette / Coal	2000kg / Hrs		Adequate stack Multi cyclone separator Dust Collector & Bag filter
3	Thermopack Boiler (200000 kcal)	30 Mtrs	1	Briquettes	2000 Kgs/ Hr.		Adequate stack Multi cyclone separator Dust Collector & Bag filter
4	DG Set 250 KVA × 2 Nos. (Stand By)	11 Mtrs	2	HSD	100 Lit/hr		Adequate stack height
5	Spin Flash Dryer (Close Loop)	Close Loop	6	PNG	480 Cu.mt./ Hrs	No	N.A.
6	Spray Dryer	15 Mtr.	2	PNG	160 Cu.mt./ Hrs	No	Water Immersed Cyclone separator for Dust Collector

1.4 Hazardous Waste

Sr. no.	Type/Name of Hazardous waste	Source of generation	Category and Schedule as per HW Rules.	Quantity (MT/Month)	Disposal Method
1.	ETP Dry Sludge	ETP	Sch-I/ 35.3	15 MT/Month	Collection, Storage, Transportation & Disposal to TSDF Site
2.	Used Oils	Machineries & Equipment	Sch-I/ 5.1	50 Lts /Months	Collection, Storage, Transportation & Sale out to Registered refineries
3.	Discarded Bags, Containers & Drums	Raw Material storage	Sch-I/ 33.1	12000Nos./Month	Collection, Storage, Transportation & Used for in-house packing of some intermediates & ETP wastes, & return back to Raw Material suppliers for same products
4.	MEE Salt	ETP	Sch-I/ 33.1	75 MT/Month	Collection, Storage, Transport and send to common TSDF Site for Disposal or Sale to actual user having Rule 9 Permission
5	Spent Acid	Process	Sch-I/	100 MT/ Month	Collection, Storage,

			26.3		Transportation & Reuse in own premises in manufacturing process / Sale to actual user having Rule 9 Permission
3	HCL [Hydrochloric Acid]	Process	Sch-2/ Class C15	800 MT/Month	
4	Ammonium Carbonate	Process	Sch-2/ --	300	
5	Sodium Hypo chloride	Process	Sch-2/ --	320	
6	Fly Ash from Boiler	--	--	120 MT /Month	Collection, Storage, Transportation and sent to brick manufacture.
7	Spent Solvents	Process	26.4/sch-I	8 MT/Month	Collection, Storage, Transportation & Reuse in own premises in manufacturing process / Sale to actual user having Rule 9 Permission

1.5 Green Belt

Total 12000 m² land area is available at site; out of this area about 3960 m² (33 %) area is covered as greenbelt and other forms of greenery.

1.6 Power & Fuel Requirements

- **Power Requirement**

Power requirement: 1200 KWA MGVL

250 KWA × 2 Nos. DG Set = 500 KWA from D.G. set (Emergency power back up)

- **Fuel Requirement**

SR. NO.	NAME OF FUEL	QUANTITY
1.	HSD/Natural Gas	0.1 m ³ /Hr/960 SCM/Hr
2.	Briquette	4.0 MT/Hr

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

Total capital investment for the proposed project is Rs. 10.0 crores.