

SECTOR E: CHEMICALS

E-1: DYES FOR TEXTILE INDUSTRY

1. TECHNOLOGY DESCRIPTION

Process for manufacturing dyes for textile industry such as acid, solvent, metal (complex, reactive) and vat dyes is available. Manufacturing is carried out using modern machines with full-computerized control system to achieve exact colour shades required.

2. TECHNOLOGY STATUS

The technology was commercialized in 1983 and is in use since then. The dyes are required in textile industry worldwide. The project is not capital intensive and the technology is easily adaptable.

3. COMPANY PROFILE

Company Name	RATHI DYE CHEM LTD.
Address	"Vrundali", Block No. 1, 851/2, Bhandarkar Road, Deccan Gymkhana, Pune 411004 Maharashtra (India) Tel: +91-20-567 2052 / 567 2053 Fax: +91-20-567 2051
Contact Person	Mr. Sunil Rathi, Managing Director
E-mail	colours@vsnl.com marketing@rathicolours.com
Web Site	http://www.rathicolours.com

Year of Establishment	:	1980
Products manufactured	:	Dyes for Textile Industry
Installed Capacity	:	1200 TPA.
Production (2000-01)	:	900 TPA.
Sales Turnover (2000-01)	:	Rs. 200 Million [US \$ 4.00 Million]
Exports	:	Rs. 60 Million [US \$ 1.20 Million]
Conformity to standards	:	Indian Standard Specifications
Compliance to ISO	:	Yes
Foreign Collaboration	:	None
Manpower Total	:	100 Nos.
Raw Materials Used	:	Synthetic Iron Oxide Pigment Luminous Pigment Azo & Diazo Pigment Phthalocyanine Pigment Plastsol Dyes Ink Dyes Rhodamine & Triarylmethane Colours
Effluent generated	:	Yes / effluent treatment plant necessary

4. BROAD PROFILE OF EXPECTED PROJECT

Project Features		
Project	:	To manufacture dyes for textile industry
Capacity	:	600 TPA
Land Requirements	:	10,000 Sq. Ft. [929 Sq. Mtr.]
Building Requirements	:	5,000 Sq. Ft. [465 Sq. Mtr.]
Plant & Machinery and Test Equipment	:	Rs. 12 Million [US \$ 0.24 Million]
Electrical Installation	:	50 KVA
Implementation Period	:	12 Months
Manpower Required (Total)	:	100 Nos.
Raw Materials Required	:	Synthetic Iron Oxide Pigment Luminous Pigment Azo & Diazo Pigment Phthalocyanine Pigment Plastsol Dyes Ink Dyes Rhodamine & Triarylmethane Colours

Financial Data		
Total Project Cost	:	Rs. 22 Million [US \$ 0.44 Million]
Expected Annual Sales	:	Rs. 70 Million [US \$ 1.40 Million]
Profitability	:	12% to 15%

Target Market	:	South Africa, Mozambique, Zambia, Zimbabwe
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SECTOR E: CHEMICALS

E-2: MENTHOL CRYSTALS, MENTHOL POWDER, DE-MENTHOLISED MINT OIL, CRUDE PEPPERMINT OIL

1. TECHNOLOGY DESCRIPTION

The process technology for manufacture of Menthol Crystals, Menthol Powder, De-mentholised Mint Oil and Crude Peppermint Oil is well established and available for know-how transfer. The Raw Mentha Oil, which is the raw material, is fully distilled before use. Processing includes crystallization, distillation & centrifuge operations. The products are widely used as flavouring agents in toothpaste, pharmaceuticals, pain balms, tobacco products and confectionery. The products are widely exported to major markets of East Asia, Europe and U.S.A.

2. TECHNOLOGY STATUS

The technology is fully commercialized and has found acceptance in India as well as developed countries of Europe and U.S.A. The raw material can be grown locally. The project is not capital intensive and the technology is easily adaptable.

3. COMPANY PROFILE

Company Name		EVEREST FLAVOURS LTD.
Address		104, Mhatre Pen Building, C-Wing, 1 st Floor, Senapati Bapat Marg, Dadar (West), Mumbai 400028 Maharashtra (India) Tel: +91-22-432 5567 Fax: +91-22-431 3880 / 431 3887
Contact Person		Dr. K. R. Ladsariya, Director
E-mail		mail@everestflavours.com everest@vsnl.net
Web Site		---
Year of Establishment	:	1985
Products manufactured	:	Menthol Crystals, Menthol Powder, De-mentholised Mint Oil, Crude Peppermint Oil
Installed Capacity	:	1000 Metric Tonnes per Year
Production (2000-01)	:	625 Metric Tonnes
Sales Turnover (2000-01)	:	Rs.276.5 Million [US \$ 5.53 Million]
Exports	:	Rs.272.2 Million [US \$ 5.44 Million]
Conformity to standards	:	Indian Standard Specifications IP / BP / USP
Compliance to ISO	:	Yes
Foreign Collaboration	:	None
Manpower Total	:	40 Nos.
Tech. & Admin.	:	7 Nos.
Raw Materials Used	:	Raw Mentha Oil
Effluent generated	:	Negligible

4. BROAD PROFILE OF EXPECTED PROJECT

Project Features		
Project	:	To manufacture a variety of Menthol products
Capacity	:	1000 Metric Tonnes per Year
Land Requirements	:	2 Hectares. (20,000 Sq. Mtr.)
Building Requirements	:	4000 Sq. Mtr.
Plant & Machinery and Test Equipment	:	Rs. 65 Million [US \$ 1.30 Million]
Electrical Installation	:	500 KVA
Implementation Period	:	12 Months
Raw Materials Required	:	Raw Mentha Oil

Financial Data		
Total Project Cost	:	Rs. 75-80 Million [US \$ 1.50 – 1.60 Million]
Expected Annual Sales	:	Rs. 250 Million [US \$ 5.00 Million]
Profitability	:	10% – 15 %

Target Market	:	African Countries, CIS Countries
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SECTOR E: CHEMICALS

E-3: SPECIALITY CHEMICALS

1. TECHNOLOGY DESCRIPTION

The technology is available for process to manufacture following speciality chemicals:

- a. Chemicals for ferrous and non-ferrous foundries
- b. Chemicals for integrated and mini steel plants
- c. Industrial resins and metal working chemicals

Process technology for each of the chemicals was developed indigenously over a period of time through a strong R&D team and feedback from end users. Many of the chemicals were developed as import substitutes. The process leads to low production cost and excellent quality.

2. TECHNOLOGY STATUS

The technology has been entirely developed indigenously with the help of own R&D team and user feedbacks. The technology is in commercial use for many years and has been fully established. This technology is easily adaptable.

3. COMPANY PROFILE

Company Name	AJAY METACHEM LTD.
Address	Survey No. 72-76, Mundhwa, Near Bharat Forge, Pune 411036 Maharashtra (India) Tel: +91-20-687 2039/ 6872250 Fax: +91-20-687 2837/ 687 5740

Contact Person		Mr. S B Chougule, Manager - Customer Services Mr. R G Kulkarni, General Manager- Technical
E-mail		info@ajaymetachem.com
Web Site		http://www.ajaymetachem..com
Year of Establishment	:	1970
Products manufactured	:	Foundry Chemicals
Installed Capacity	:	2,150 Metric Tonnes per year
Production (2000-01)	:	1,272 Metric Tonnes per year
Sales Turnover (2000-01) (Total)	:	Rs. 265 Million [US \$ 5.30 Million]
- Domestic	:	Rs. 257 Million [US \$ 5.14 Million]
- Exports	:	Rs. 8 Million [US \$ 0.16 Million]
Conformity to standards	:	Indian Standard Specifications
Compliance to ISO	:	Yes
Foreign Collaboration	:	None
Manpower Total	:	100 Nos.
Managerial & Supervisory	:	15 Nos.
Skilled/Semi-skilled/Unskilled	:	85 Nos.
Raw Materials Used	:	Phenol, Ferro Silicon, Ferro Manganese, Sand Silica, Mineral Turpentine, Soda Ash, Aluminum Cryolite, Sodium Cryolite, Paraffin
Effluent generated	:	Not Significant

4. BROAD PROFILE OF EXPECTED PROJECT

Project Features	
Project	: To manufacture chemicals used in foundries and casting units.
Capacity	: 1000 Metric Tones per year
Land Requirements	: Approx. 20,000 Sq. Ft. [1858 Sq. Mtr.]
Building Requirements	: Approx. 10,000 Sq. Ft. [929 Sq. Mtr.]
Plant & Machinery and Test Equipment	: Rs. 80 Million [US \$ 1.60 Million]
Electrical Installation	: Approx. 150 KVA – 180 KVA
Implementation Period	: 12 Months
Manpower Required (Total)	: 100 Nos.
Raw Materials Required	: Phenol, Ferro Silicon, Ferro Manganese, Sand Silica, Mineral Turpentine, Soda Ash, Aluminum Cryolite, Sodium Cryolite, Paraffin

Financial Data	
Total Project Cost	: Rs. 150 Million [US \$ 3.00 Million]
Expected Annual Sales (@ 70% capacity utilization)	: Rs. 150 Million [US \$ 3.00 Million]
Profitability / ROI	: 10%

Target Market	: African Countries, CIS Countries
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SECTOR: CHEMICALS

E4: AUTO RUST AND SCALE INHIBITOR

1. TECHNOLOGY DESCRIPTION

There are large numbers of vehicles particularly in Defence utilizing tap or rainwater as coolant in the radiators of the combustible engines, which results in corrosion of the cylinder head / block, radiator and water tanks. This corrosion also results in building up of sludge of corrosion products in the lower water trays of the engine, which causes the circulation of the coolant adversely thereby running the engine hot.

The developed inhibitors which when incorporated in tap water inhibit the corrosion of cast iron, mild steel, copper, brass, aluminum, and solder, representing materials of constructions of engine cylinder head, block, radiator tube and water pump and also prevents scale formation in the circulatory system. The corrosion inhibitors are supplied in different packages e.g. larger packages for the preparations of initial coolant solution and smaller packages for the inhibition of water used for topping up. In case of loss of water in the radiator, the vehicle should be visually checked for any leakage. If there is no leakage, the radiator water is topped up with the plain water. In case of leakage, measured quantity of water is used for topping up and for each liter of water, contents of one top-up capsule is emptied in the radiator. The process involves mixing of various ingredients in a suitable proportion followed by heating.

2. TECHNOLOGY STATUS

The developed auto rust & corrosion inhibitor concentrate is packed in 50 ml., 250 ml. And 500 ml. Packs to make 1 Liter, 5 Liter and 10 Liter of inhibited coolant solution for use in vehicles.

The inhibited coolant water has the following salient features:

- Protects all metals present in the cooling system from corrosion.
- Prevents the formation of hard water scale in the cooling system.
- Does not interface with the efficient cooling system.
- Does not foam.
- It is non-toxic and it is free from unpleasant odours.

3. COMPANY PROFILE

Company Name	IFTTEX OIL & CHEMICALS LTD.*
Address	The Sangeet Plaza, 5 th Floor, Marol Mirashi Road, Andheri (East), Mumbai 400059 Tel:022-28598128-35 Fax:022-28598126-28598136
Contact Person	Mr. Anil Sharma, Managing Director Mr. Ramesh Chechenai, CFO
E-mail	iftexmail@iftex.com
Web Site	http://www.iftex.com

*The company is a licensee of National Research Development Corporation (NRDC). As per NRDC policy, the licensees cannot directly transfer the technology to any client in India and abroad. The licensee can associate with the Corporation for offering the turnkey offer. The technology would have to be transferred through NRDC.

Contact Address of NRDC is:

National Research Development Corporation
(A Government of India Enterprise)

20-22, Zamroodpur Community Centre, Kailash Colony Extension,
New Delhi 110048. India,

Ph: +91-11-26419904, 26417821, 26480767, 26432627

Fax: 011- 26460506, 26478010, 26231877

Website: www.nrdcindia.com

email: nksharma@nrdcindia.com / bhardwaj@nrdcindia.com /
nrdc@nda.vsnl.net.in

Year of Establishment	:	---
Products manufactured	:	Auto Rust & Scale Inhibitor
Installed Capacity	:	70,000 Bottles per Annum
Production (2000-01)	:	60,000 Bottles per Annum
Sales Turnover (2000-01)	:	Rs. 3.0 Million [US \$ 0.6 Million]
Exports	:	---
Conformity to standards	:	Indian Standard Specifications
Compliance to ISO	:	Yes
Foreign Collaboration	:	None
Manpower Total	:	30 Nos.
Raw Materials Used	:	Corrosion Inhibitor, Solvents, Chemicals
Effluent generated	:	NIL

4. BROAD PROFILE OF EXPECTED PROJECT

Project Features		
Project	:	To Manufacture Auto Rust & Scale Inhibitor
Capacity	:	30,000 Bottles per Annum
Land Requirements	:	3,230 Sq. Ft. [300 Sq. Mtr.]
Building Requirements	:	2,150 Sq. Ft. [200 Sq. Mtr.]
Plant & Machinery and Test Equipment	:	Rs. 1 Million [US \$ 0.20 Million]
Electrical Installation	:	25 KVA

Implementation Period	:	6 –9 months
Manpower Required (Total)	:	10 Nos.
Raw Material Required	:	Corrosion Inhibitor, Solvents, Chemicals

Financial Data		
Total Project Cost	:	Rs. 3.0 Million [US \$ 0.6 Million]
Expected Annual Sales	:	Rs. 3.5Million [US \$ 0.7 Million]
Profitability / ROI	:	10% to 15%

Target Market	:	South Africa, Central Asian Countries
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SECTOR: CHEMICALS

E5: GLYCOL BASED ANTI-FREEZE COOLANT (DAFC)

1. TECHNOLOGY DESCRIPTION

Developments of Glycol based coolants have brought a breakthrough in the technology of Engine Cooling Systems in vehicles operating in low temperature conditions. A new glycol based concentrated fluid, named as DAFC has been developed which in specific dilution's with water can be used an efficient radiator coolant for vehicles like cars, trucks, heavy vehicles, and auxiliary power units operating in the plains as well as the temperature upto -40°C. DAFC with 30% dilution can be used at temperatures upto 10°C. It can also be used as a shock absorbing fluid in the recoil system of large caliber guns. 50% DAFC can be used in the above-mentioned engine cooling system operating in still low temperature and weather conditions and has been recommended for use in defence services.

Manufacturing process involves major steps viz. Primary Mixing, Settling, Secondary Mixing, Filtration and Storage & Packaging. Various ingredients are dissolved in 15 to 20 parts of water alongwith 0.1 to 0.2 parts inorganic nitrite and 50ppm soluble dye (fluorescence type yellowish green dye) by constant stirring and raising the temperature upto about 40°C. 40 to 50 parts of sodium salt of benzoic acid and one twentieth part of soluble aza compound are also added to one part of inorganic nitrite.

The remaining parts of water and entire quantity of glycol are mixed to the above solution by constant stirring for 30 minutes and then the solution so formed is allowed to settle. A paste of fluorescent dye is finally mixed with glycol-water mixture followed by stirring for 15 minutes and then the solution is filtered through horizontal plate and frame type filter press.

2. TECHNOLOGY STATUS

The developed Glycol based coolants are effective yet anti-freezing in nature suited for engine cooling systems operating at lower temperatures at weather conditions.

3. COMPANY PROFILE

Company Name	SUPARNA CHEMICALS LTD.*
Address	54-A, Mittal Towers, Nariman Point, Mumbai 400021 Tel:022-2027446/2834571 Fax:022-2830212
Contact Person	Mr. S N Maheshwari, Managing Director
E-mail	suparna@bom5.vsnl.net.in
Web Site	http://www.suparnachemicals.co.in

*The company is a licensee of National Research Development Corporation (NRDC). As per NRDC policy, the licensees cannot directly transfer the technology to any client in India and abroad. The licensee can associate with the Corporation for offering the turnkey offer. The technology would have to be transferred through NRDC.

Contact Address of NRDC is:

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Website: www.nrdcindia.com

email: nksharma@nrdcindia.com / bhardwaj@nrdcindia.com / nrdc@nda.vsnl.net.in

Year of Establishment	:	1980
Products manufactured	:	Glycol based Anti-freeze Coolant
Installed Capacity	:	1,000 KL per Annum
Production (2000-01)	:	800 KL per Annum
Sales Turnover (2000-01)	:	Rs. 60 Million [US \$ 1.20 Million]
Exports	:	Rs. 20 Million [US \$ 0.40 Million]
Conformity to standards	:	Indian Standard Specifications
Compliance to ISO	:	Yes
Foreign Collaboration	:	None
Manpower Total	:	50 Nos.
Raw Materials Used	:	Ethanol, Inorganic Nitrate, Sodium Benzoate, Sodium Aza Compound, Green Dye
Effluent generated	:	NIL

4. BROAD PROFILE OF EXPECTED PROJECT

Project Features		
Project	:	To Manufacture Glycol based Anti-freeze Coolant
Capacity	:	600 KL per Annum
Land Requirements	:	1,610 Sq. Ft. [150 Sq. Mtr.]
Building Requirements	:	807 Sq. Ft. [75 Sq. Mtr.]
Plant & Machinery and Test Equipment	:	Rs. 4.0 Million [US \$ 0.80 Million]

Electrical Installation	:	110 KVA
Implementation Period	:	9-12 months
Manpower Required (Total)	:	50 Nos.
Raw Material Required	:	Ethanol, Inorganic Nitrate, Sodium Benzoate, Sodium Aza Compound, Green Dye

Financial Data		
Total Project Cost	:	Rs. 20 Million [US \$ 0.40 Million]
Expected Annual Sales	:	Rs. 35 Million [US \$ 0.70 Million]
Profitability / ROI	:	15% to 20%

Target Market	:	South Africa, Central Asian Countries
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