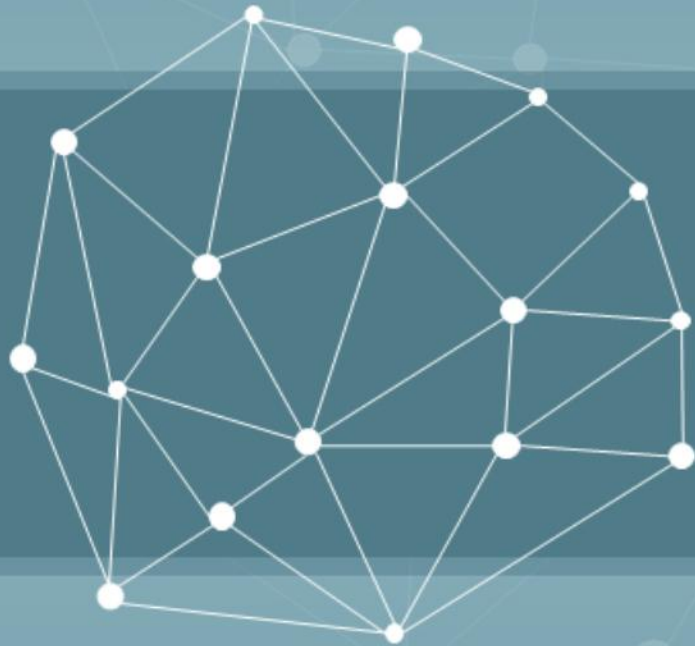




Sarex

A division of Saraf Chemicals Pvt. Ltd.



Presentation on
**SAREX TOLL
MANUFACTURING
FACILITY**

By **Sarex**



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1. About Sarex

- 1.1 Sarex group was founded in 1952. It is 68 years old company.
- 1.2 Sarex group has diversified manufacturing and distributing activities such as Textile chemicals, Pharmaceutical Intermediates, UV absorbers and light stabilizer additives for Plastics and Coatings, Fine chemicals for Electronics industries, Agrochemicals etc.
- 1.3 Sarex is having state of art manufacturing facility of Tarapur Industrial Park (Maharashtra Industrial Development Corporation) which is 60 km North to Mumbai. It is well connected with Highway and Railway with the Nhava Sheva sea Port and Mumbai Air port.
- 1.4 Sarex Corporate office is at Andheri, Mumbai which is just 3 km away from Chatrapati Shivaji International Airport, Mumbai.
- 1.5 Sarex products are mainly exported to Europe, Asian, USA and some South American and African countries. Sarex is exporting about 80% of its total production.



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2. Confidential agreements (CDA) with multinationals

- 2.1 Sarex is having very long experience of Toll manufacturing for multinational companies.
- 2.2 Sarex is having full respect to intellectual property rights of the Technology provider.
- 2.3 Sarex is having confidential Agreement and Tolling agreement with many renowned multinational companies. Sarex is Toll manufacturing for these companies over past 15 years.



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3. Type of Chemical Reaction handled

- 3.1 Sarex has experience of Custom Research for many catalogue companies such as Aldrich chemicals, Thermo Fisher, Tokyo chemicals etc, therefore worked on diversified type of chemical Reactions. Many products developed at Kilo lab is commercially scaled up to multi Tonn quantity.
- 3.2 Sarex is regularly doing the chemical Reactions such as Alkylation, Condensation, Chlorination, Bromination, Addition Reaction, Oxidation and some reduction reactions.
- 3.3 Sarex is also doing reaction which involve pressure. Sarex is having Gas induction high pressure Reactor and at present Sarex is doing pressure reaction up to 10 Kg/cm².
- 3.4 Sarex can handle the reaction at low temperature -20°C and at high temperature up to 160°C.



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4. Core Competency

- 4.1 Sarex is having core competency in Friedel Craft Reaction.
- 4.2 At present Sarex is consuming about 50 MT Anhydrous Aluminium chloride every month which is used as catalyst in Friedel craft reaction.
- 4.3 Sarex is having batteries of Glass lined Reactors of various capacity which is used for the Friedel craft reaction.



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5. Handling of Hazardous raw materials

- 5.1 Sarex is having facility to store hazardous Raw materials.
- 5.2 Sarex is having Tank Farm facility to store flammable solvents. Sarex is having under ground Tank farm with 6 no. 20 KL tanks which store solvents like xylene, monochlorobenzene, IPA, methanol, MIBK, DMF etc.
- 5.3 Sarex is having Ex zone, Explosive approval for storing such solvents from the competent authority.
- 5.4 Sarex is having experience to handle hazardous raw materials such as Cyanuric chloride, Ethyl mercaptan, Chlorine gas, dry hydrochloric gas, Acid chlorides, Phosphorous oxy chloride, Phosphorous Trichloride etc.
- 5.5 Sarex is having well trained man power, safe handling protocol and training schedule for handling such chemicals.



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6. EHS competence

- 6.1 Sarex has well defined EHS policy.
- 6.2 ISO certification with OSHAS18001:2007
- 6.3 Sarex has statutory approvals from Industrial safety and Health Directorate (Govt. of India), State Pollution control board, Petroleum and explosives Safety organization (PESO)
- 6.4 Sarex is the member of common effluent treatment plant and Mumbai waste management limited for the treatment and disposal of hazardous solid waste.
- 6.5 Sarex has EHS team which takes care of management review on safety, Plant Inspection, Near miss investigations, Permit documents, safety audits, Risk analysis and HAZOP study, Mock drills etc.
- 6.6 Sarex is regularly being audited for the EHS by multinational companies. It is audited for 'Responsible care' by Multinational companies for whom we are doing the Tolling activity. Sarex has internal safety audits as well as audit by third party.
- 6.7 Inhouse safety equipment includes fire hydrant system, Fire extinguishes, mechanical foam trolleys , fire blanket, fire alarm system, smoke detector system, Self Contained Breathing Apparatus (SCBA), safety showers, rupture disc, safety control valves on the Reactors etc.



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7. Details of Manufacturing Equipment

- 7.1 Sarex is having batteries of Glass lined and S.S.306 reactors which are aligned at various levels for smooth gravity flow.
- 7.2 **Glass line Reactors:**
 - 7.2.1 Glass lined reactors range from 630 Lt to 10000 Lt.
 - 7.2.2 Agitator : Propeller and Anchor with VFD
- 7.3 **S.S. 316 Reactors:**
 - 7.3.1 SS 316 Reactors range from 500 Lt to 10000 Lt.
 - 7.3.2 Agitator : Propeller and Anchor with VFD
 - 7.3.3 The present Total Reactor Volume : 120 KL
- 7.4 **High vacuum distillation facility:**
 - 7.4.1 Sarex is having High vacuum distillation facility with Glass lined reactor as well as SS316 reactor with Structural packed Column (Height 3 meters) and max vacuum 5mbar.
 - 7.4.2 The maximum temperature for high vacuum distillation is 160°C.
- 7.5 **High pressure Reaction facility:**
 - 7.5.1 Sarex has 2 KL SS316L reactor with maximum tested pressure 32 Kg/cm².
 - 7.5.2 Agitator : Turbine with 300 RPM agitator.



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7. Details of Manufacturing Equipment

7.6 Filtration equipment:

- 7.6.1 Centrifuge – SS 316 and HALAR coated
- 7.6.2 Agitated Nutsche filter
- 7.6.3 Filter press with P.P. plates
- 7.6.4 Sparkler filter
- 7.6.5 Lenticular Filter
- 7.6.6 Pressure filter

7.7 Drying equipment:

- 7.7.1 Rotary vacuum paddle dryers.
- 7.7.2 Tray dryers.

7.8 Milling and Pulverizer:

- 7.8.1 Multi mill for particle size reduction.

7.9 Shifters for particle size control.

7.10 Solvent Recovery plant:

- 7.10.1 Solvent recovery and regeneration: Sarex has 3 distillation columns for Fractional distillation and solvent Recovery.



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8. Details of Utilities

- 8.1 Boiler IBR boiler 6 Ton/hour capacity (Natural gas fired).
- 8.2 Chilled water plant 7°C 200 TR.
- 8.3 Chilled Brine plant -20°C 50TR.
- 8.4 Nitrogen plant 70 NM3 / hour and 25 NM3.
- 8.5 Air compressors 100 CFM 2 no.
- 8.6 Cooling towers 600 TR 2 no , 250 TR & 150 TR.
- 8.7 Steam jet ejectors, Water jet ejectors for vacuum.
- 8.8 Oil vacuum pumps.
- 8.9 Thermic fluid oil heaters electrical (75 KWatt) Temperature 200°C.
- 8.10 Thermic fluid oil heater 200000 Kcal (diesel fired) Temperature 200°C.
- 8.11 Power back up: DG set 750 KVA and 500 KVA.



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9. Accreditations and Certification

- 9.1 Sarex is regularly being audited by it's customers for quality audit and EHS audit.
- 9.2 Sarex is being audited by Pharma customers for quality system as per WHO guidelines.
- 9.3 Sarex is approved vendor for Pharmaceutical intermediate of European customers such as Seigfried Switzerland, Uticals, Germany and France, Zach France.
- 9.4 **ISO & ECOVADIS certification:**
 - 9.4.1 ISO 9001:2015
 - 9.4.2 ISO 14001:2015
 - 9.4.3 OSHAS 18001:2007
 - 9.4.4 ECOVADIS-CSR silver rating



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9. Accreditations and Certification

9.4 ISO certification:



ISO 9001:2015

Quality Management Systems
(URS - UKAS)

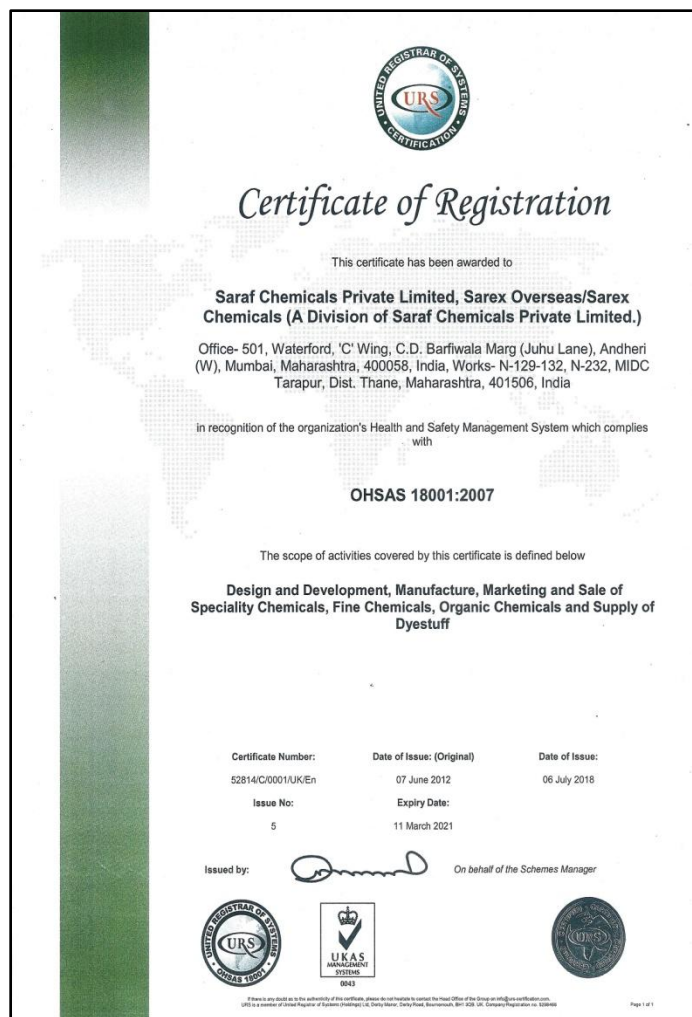


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9. Accreditations and Certification

9.4 ISO certification:



OHSAS 18001:2007

Health and Management System
(URS - UKAS)

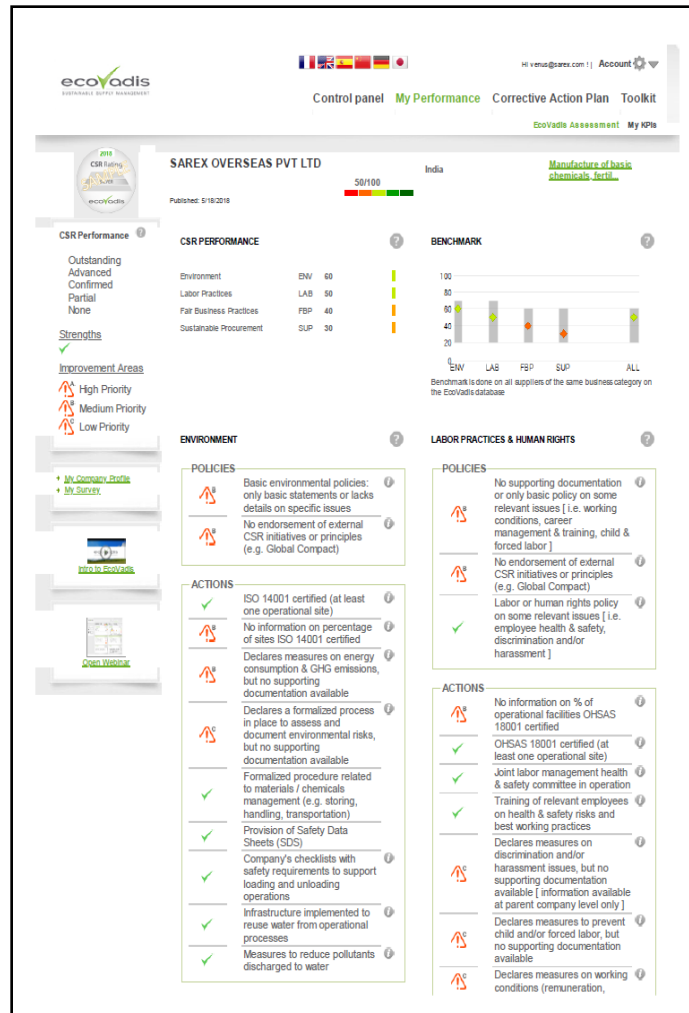


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9. Accreditations and Certification

9.4 ECOVADIS certification:



ecovadis

Business Sustainability Ratings

SILVER STAR RATINGS





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10. Waste water treatment plant and waste gas scrubbing system

- 10.1 Sarex is doing Primary, secondary and tertiary treatment of the effluents generated in the plant.
- 10.2 Sarex is further strengthening waste effluent treatment system by installing RO 2 multi effect evaporator.
- 10.3 Sarex is having waste gas scrubbing system to remove acidic fumes generated in the process.



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11. Solid waste management

11.1 Sarex is the member of Mumbai waste management ltd which takes care of disposal of solid waste generated at Sarex plant.



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12. Details of Drying and Packing

12.1 Sarex is having isolated drying and packing block.

12.2 It has 4 isolated Drying and packing line. These are isolated by partitions to avoid cross contamination.

12.3 Drying and packing is aligned in Gravity flow where drying takes place at Top floor and it proceed for shifting and packing at lower level.

12.4 Packing area is humidity and Temperature controlled by HVAC system.



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13. Quality control and Quality Assurance

13.1 Sarex has well documented Quality system.

13.2 Sarex Quality system is as per ISO 9001:2015 and ISO 14001:2015.

13.3 Sarex has quality Assurance and Quality control team for monitoring the Quality system.

13.4 Quality control department has the testing instruments such as HPLC, GC, UV-V.S spectrophotometer, FTIR, Auto Titrators, APHA-GARDNER-IODINE measurement.



HPLC



GC



**UV-V.S
spectrophotometer**



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14. R & D and Process development lab

- 14.1 Sarex is having well equipped R & D lab which is involved in Process development and cost reduction of existing products.
- 14.2 R&D lab has the equipment such as Fume hoods, working benches, Glass reactors, JULABO Heating and Chilling system, BUCHI Rotary evaporator, High pressure reactor, Solvent Recovery system, Glass wares, stirrers etc.



Fume hoods



Glass reactors



Heating and Chilling system



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15. Automation (PLC and SCADA)

15.1 Sarex plant is partially automated with PLC and SCADA for liquid charging, temperature and pressure control .

15.2 There are safety interlocks available with PLC and SCADA.



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16. Future expansion project

16.1 Sarex is under major expansion phase.

16.2 Sarex is increasing the manufacturing capacity and upgrading the existing manufacturing plant with more safety features such as Rupture disc, safety valves etc.

16.3 Present manufacturing capacity of various high value products is 600 MT per year., Manufacturing capacity after expansion will be 900 MT per year.

16.4 Present Reactor Volume: 120 KL

Reactor volume after expansion: 260 KL

16.5 Sarex is also adding more equipments to handle waste water effluent and waste gases scrubbing system.



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Thank You