



Responsible Care®
OUR COMMITMENT TO SUSTAINABILITY



THE DHARAMSI MORARJI CHEMICAL CO. LTD.



Responsible Care®
OUR COMMITMENT TO SUSTAINABILITY



THE DHARAMSI MORARJI
CHEMICAL CO. LTD.



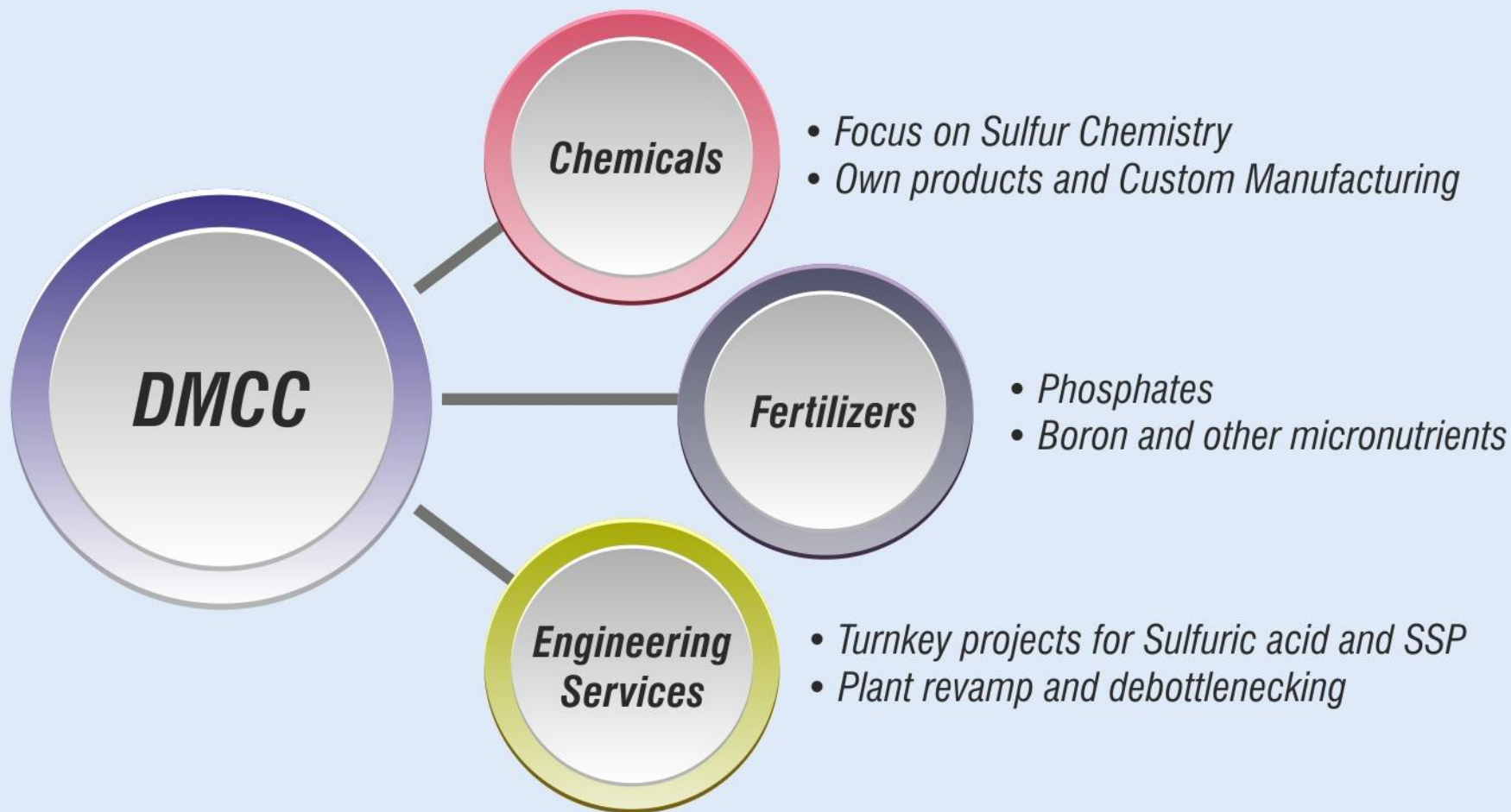
1919 - 2019

100 Years of Sulphur Chemistry

www.dmcc.com

Overview

- *Established in 1919*
- *Built the first plant of Sulphuric Acid in India Sulphur chemicals remains a focus area*
- *Expanded into Specialty / Performance Chemicals & Engineering Services*
- *Strong “SHIP” brand backed by widespread sales, distribution and manufacturing network*
- *Products are based on processes developed by in-house R&D Division*





Responsible Care®
OUR COMMITMENT TO SUSTAINABILITY



THE DHARAMSI MORARJI
CHEMICAL CO. LTD.



Dahej Unit

385KM

**Corporate Head Office
MUMBAI**

125KM



Roha Unit

www.dmcc.com



Responsible Care®
OUR COMMITMENT TO SUSTAINABILITY



THE DHARAMSI MORARJI
CHEMICAL CO. LTD.

Manufacturing Facility, Roha



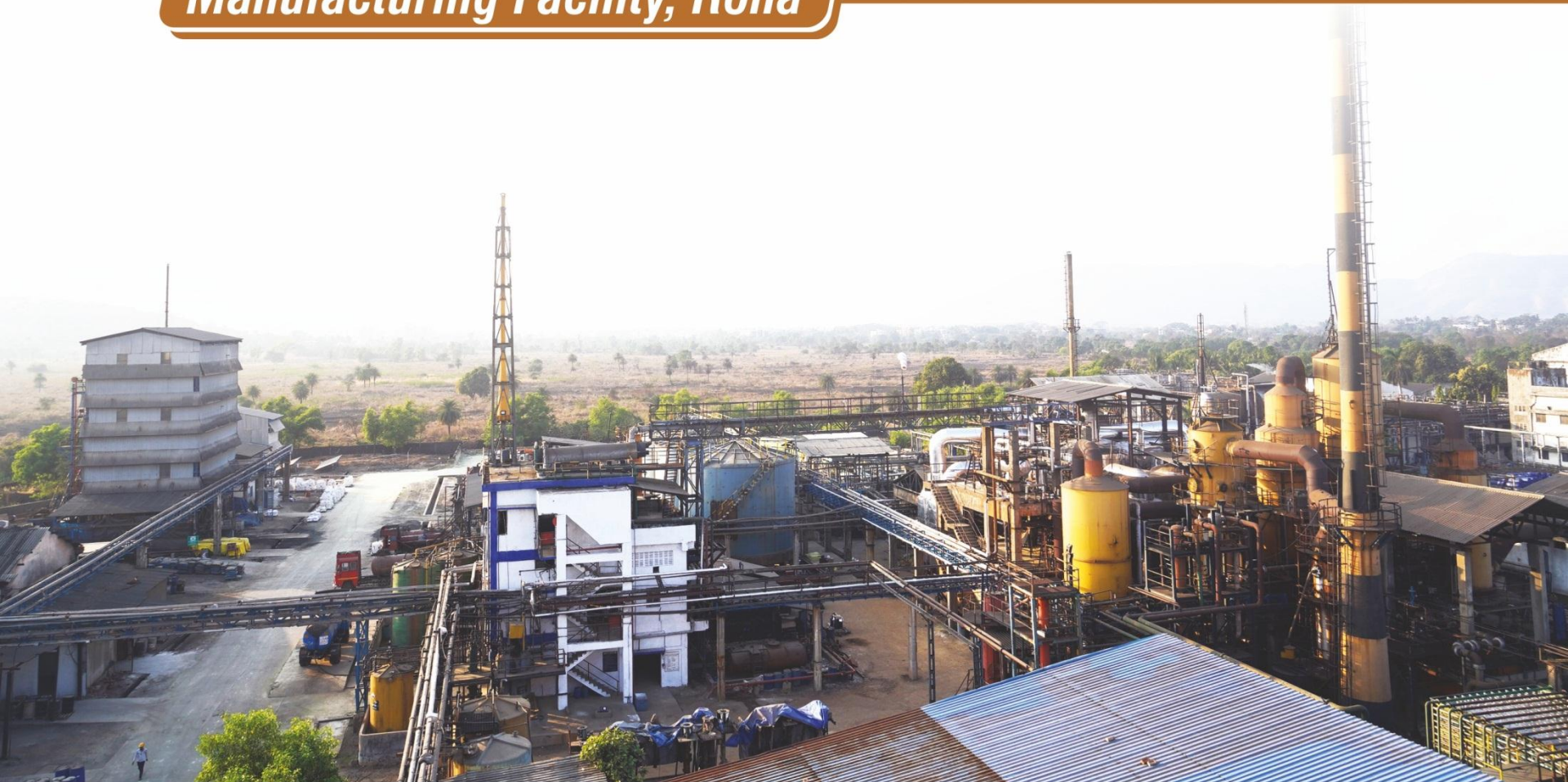


Responsible Care®
OUR COMMITMENT TO SUSTAINABILITY



THE DHARAMSI MORARJI
CHEMICAL CO. LTD.

Manufacturing Facility, Roha



www.dmcc.com

DMCC: A Company with a conscience

*Renewable
energy
provides 25%
of total need*

ISO 9001:2015

*Support for
NGOs involved
in wildlife
conservation*

*“Green Cover”
at all our
factory sites*

*Responsible
Care*

TFS

RECOGNITION



RESPONSIBLE CARE

PROUD HOLDER OF RESPONSIBLE CARE LOGO VALID UPTO 2022

Responsible care is a voluntary commitment by the global chemical industry to drive continuous improvement and achieve excellence in environmental, health and safety and security performance



TOGETHER FOR SUSTAINABILITY : VALID UPTO 2021.

Together for Sustainability is a joint initiative of chemical companies, founded in 2011. It focuses on the promotion of sustainability practices in the chemical industries.

Core Technology

- *Sulfonation*
- *Chloro Sulfonation*
- *Friedel-Craft Reaction*
- *Esterification*
- *Boron Chemistry*
- *Methylation*
- *Ethylation*
- *Nitration*
- *Reduction*
- *Amidation*

Selected Product List

PRODUCT	CAS NO.	PRODUCT	CAS NO.	PRODUCT	CAS NO.
01 Benzene Sulphonyl Chloride	98-09-9	05 Sodium Benzene Sulphonate	515-42-4	09 Diethyl Sulphate	64-67-5
02 Benzenesulphonic Acid – 70%, 90%, 99%	98-11-3	06 Sodium Phenol Sulphonate	1300-51-2	10 Thiophenol	108-98-5
03 p-Phenol Sulphonic Acid (65%)	98-67-9	07 Diphenyl Sulphone - Paper / Polymer Grade	127-63-9	11 Para Chloro Thiophenol	106-54-7
04 Sodium Vinyl Sulphonate – 25%, 30%, 35%	3039-83-6	08 4,4'-DiHydroxy Diphenyl Sulphone	80-09-1	12 Menthyl Lactate	61597-98-6
13 Lasamide	2736-23-4	14 Sulfuric Acid (All grades), Oleum (23% & 65%), Chlorosulfonic Acid, Sulfuric Anhydride.			

Markets by end-use

- *Textile processing*
- *Emulsions*
- *Polymers*
- *Dyes and Pigments*
- *Pharmaceutical Intermediates*
- *Electroplating*
- *Fire Retardants*
- *Agrochemicals*
- *Water Treatment*
- *Fertilizers*
- *Speciality paper*

Markets by geography

- *Commodity chemicals: 95% in India*
- *Specialties: 30% in India; 70% exports*
- *Markets in over 25 countries including the USA, European union, Japan & China*
- *REACH registration in the EU through an subsidiary company.*



Responsible Care®
OUR COMMITMENT TO SUSTAINABILITY



THE DHARAMSI MORARJI
CHEMICAL CO. LTD.

Research & Development Lab at Roha



Multi Purpose Plant Equipment Available

- *Glass lined Reactors (5 KL, 3 KL)*
- *SS 316 Reactors (5KL, 3 KL)*
- *Centrifuges (SS, Rubber lined)*
- *Chilling plants, 150 TR, 50 TR, 20TR*
- *Nutsch Filter*
- *Vacuum Glass distillation systems*
- *Flakers, SS 316*
- *AGNF, SS316L , 2 KL*
- *Gas Scrubbers*
- *Grinders*
- *Rotary dryers, 10 MT/day*
- *Spray driers, 10 MT/day*
- *Thermic fluid Boilers*
- *Steam Boilers*

Boron & Specialty Chemicals at Dahej

- *Boron business was started by Borax Morarji Ltd in 1963*
- *Shifted to Dahej in 2013*
- *The merger of Borax Morarji Ltd. with DMCC has facilitated expansion of the product portfolio with a new location at Dahej in Gujarat*
- *Plant in operation at Dahej, Gujarat.*



Responsible Care®
OUR COMMITMENT TO SUSTAINABILITY



THE DHARAMSI MORARJI
CHEMICAL CO. LTD.

DMCC Plant, Dahej, Gujarat



www.dmcc.com

Boron Business Areas

- *Electroplating*
- *Thermal power station*
- *Detergents*
- *Electrolytic capacitors*
- *Ceramic Frit and Tiles Industries*
- *Steel Industries*
- *Catalysts*
- *Hydraulic / Brake fluid*
- *Micronutrient*
- *Boronated Fertilizers*
- *Timber preservatives*
- *Boronated Fertilizers*

Boron Product List

PRODUCT	CAS NO.
Boric acid, Technical	10043-35-3
Boric acid, Chemically Pure	10043-35-3
Boric acid, Special Quality	10043-35-3
Borax Pentahydrate	12179-04-3
Borax Decahydrate	1303-96-4
Disodium Octaborate, Tetrahydrate	12280-03-4
Potassium Tetraborate, Tetrahydrate	12045-78-2
Ammonium Pentaborate, Tetrahydrate	12046-04-7

PRODUCT	CAS NO.
Zinc Borate-2335	12767-90-7
Zinc Borate -223	138265-88-0
Cal Plus (40% B ₂ O ₃)	1332-07-06

New Boron Products

Triethylene glycol monomethyl ether, borate	30989-05-0
Trimethyl Borate	121-43-7

Future Expansions at Dahej

- *New Sulfuric acid plant with 300 MT/ day capacity*
- *New Specialty products in Multi purpose plant*
- *Expansion of Benzene sulfonyl chloride with the production capacity of 150 MT/M*
- *New Specially products.*
- *Range of Thio Compounds.*
- *Sulfones and derivatives for Paper and Polymer Industries.*

CERTIFICATES & AWARDS

CERTIFICATE OF MERIT FOR WATER RESOURCE MANAGEMENT IN CHEMICAL INDUSTRY - 2014

(Category 4 - Annual Sales Revenue below Rs.100 crore)

2015

Conferred on
THE DHARAMSI MORARJI CHEMICAL CO. LTD.

CITATION

The Dharamsi Morarji Chemical Co. Ltd. (DMCC), Mumbai, is a public limited company, its manufacturing unit is located at MIDC Industrial Estate Dhatav, Taluka Roha, Dist. Raigad, Maharashtra. The company started its first plant to manufacture Sulphuric Acid in 1919 and shifted to manufacture of commodity and specialty chemicals (Sulphuric Acid, Oleum 23%, Oleum 60%, Liquid SO₂, Irtazibenzol, Chlorosulphonic Acid, Specialty Chemicals Benzene Sulphonyl Chloride, Sodium Vinyl Sulphonate, Diphenyl Sulphonates, Diethyl Sulphate, Phenyl Sulphonic Acid), DMCC is a Responsible Care Committed Company.

The company has carried out several measures for reducing water consumption by:

- Process Improvement e.g. Benzene Sulfonyl Chloride manufacturing process was reviewed and modified to reduce 5m³/day of wash water
 - Process Modification e.g. Diphenyl Sulfoxane a byproduct of Benzene Sulfonyl Chloride) was being washed with 10 M³/day wash water. The process was modified to eliminate washing
 - Recycle of Water - In the Sodium Vinyl Sulphonate process part of the cake wash water (1m³/day) was recycled back in to the process
 - Proper Monitoring and education of employees
- All these efforts have resulted in:
- Within 7 months (SEP- MAR 2014) water consumption has been reduced by 15.85%.
 - 30 m³/month wash water recycled in SWS plant.
 - Treatment cost saving of Rs.5,33,345 in seven months (SEP- MAR 2014) in ETP
 - For 7 months (SEP- MAR 2014) cost saving on incoming water from MIDC is Rs.82,506/-
- In recognition of the above, **INDIAN CHEMICAL COUNCIL** is pleased to confer the **CERTIFICATE OF MERIT FOR WATER RESOURCE MANAGEMENT IN CHEMICAL INDUSTRY** for the year 2014 on **THE DHARAMSI MORARJI CHEMICAL CO. LTD.**, Mumbai.



DMCC NEWS NOVEMBER 2015 | 33

**Certificate of Merit for
Water Resource Management in 2014**

ICC CERTIFICATE OF MERIT FOR EFFICIENT WASTE MANAGEMENT - 2015

(Category 4 - Annual Sales Revenue below Rs.500 crore)

2015

Conferred on
**THE DHARAMSI
MORARJI
CHEMICAL
CO. LTD.**

CITATION

The Dharamsi Morarji Chemical Co. Ltd. (DMCC) was established in the year 1919 and started the first plant of Sulphuric Acid in India. The Company was a pioneer in the manufacture of Phosphate based Fertilizers. The Company has now shifted its focus to Specialty Intermediates based on Sulphur and Ethanol. DMCC's plant is located in MIDC Industrial Estate Dhatav, Raigad District, Maharashtra.

The Company introduces Waste Management in:

- Chlorosulphonated Hydrocarbon 2014.
- Fully Automatic Pneumatic Filter Press at ETP May 2015.

Allyl Ester of Sulphuric Acid September 2015

Chlorosulphonated Hydrocarbon Plant Process: The Company is the largest manufacturer of "Chlorosulphonated Hydrocarbon" in the world. The Plant capacity is 20 TRD. In this process a solid waste residue is generated during distillation. Earlier the Company used to treat the residue to recover a co-product. Effluent with a high COD level was sent for effluent treatment. DMCC in house R & D has developed a Process of "Controlled Catalytic Anlyation" of waste distillation residue. This has not only eliminated this step but has also converted this waste in to additional useful co-product. As a result, equivalent solid waste generation and effluent from this step is totally eliminated.

Reduction of Hazardous Solid Waste in ETP: Previously an ordinary leaf filter was being used for filtration of the primary and secondary clarifier settings. Solid waste cake of 700 to 3000 kg/day containing 70% to 80% moisture were generated. A fully automatic pneumatic filter press with PLC control has been installed in their ETP. The cake quantity has now reduced to 450 to 600 kg/day with 35 to 40% moisture.

Allyl Ester of Sulphuric Acid Plant: Allyl Ester of Sulphuric Acid process was generating waste residue from distillation. This waste residue contained 40% solids, with poor fluidity. Settling of solids used to take place during transit which prevented acceptance of the product by the company's customers. Company's R & D has modified the process to eliminate solids in the process. Fluidity of the waste distillation residue has also been increased. The by-product generated has been tested and approved by customers and is now being sold commercially. Thus all these efforts have resulted in - (1) Reduction of Effluent; (2) Reduction of Hazardous solid waste; (3) Conversion of waste residue in value added product; and (4) Improvement in Overall Yield.

In recognition of the above, **INDIAN CHEMICAL COUNCIL** is pleased to confer the **ICC CERTIFICATE OF MERIT FOR EFFICIENT WASTE MANAGEMENT** for the year 2015 on **THE DHARAMSI MORARJI CHEMICAL CO. LTD.**, Mumbai.



DMCC NEWS NOVEMBER 2015 | 33

**Certificate of Merit for
Efficient Waste Management in 2015**

ICC CERTIFICATE OF MERIT FOR EXCELLENCE IN ENERGY CONSERVATION AND MANAGEMENT - 2017

2017

Conferred on
THE DHARAMSI MORARJI CHEMICAL COMPANY LTD.

CITATION

The Dharamsi Morarji Chemical Company Limited

(DMCC) is a pioneer in sulphuric acid manufacture in India. DMCC started its first plant at Ambernath, Maharashtra in 1919 and followed onto manufacture of phosphate based fertilizers. After several decades into it, DMCC shifted their focus to specialty & fine chemicals, and industrial intermediates. At present their commodity chemicals include Sulphuric acid, Oleum-23%, Oleum-60%, stabilised liquid SO₂ and Chlorosulphonic acid. The specialty chemicals include benzene, and huge variety of sulphur based chemicals and derivatives.

DMCC is a Responsible Care committed company and also allowed to use the ICC Logo by ICC.

Based on an integrated all round approach the energy conservation schemes implemented have included new heat pump based chiller, improved chiller ejector

system, replacement of old ejector vacuum system with new robe vacuum system, replacement of inefficient waste heat recovery system with new higher efficiency system, enhanced condensate recovery, improvements in elimination of hot well tank and hot well pumps in chillers and installation of variable speed drives and variable frequency drives.

It was ensured that heat pump based chiller, heat pump in sulphuric acid plant were all designed and executed to obtain maximum energy efficiencies.

In recognition of the above, **Indian Chemical Council** is pleased to confer the **ICC CERTIFICATE OF MERIT FOR EXCELLENCE IN ENERGY CONSERVATION & MANAGEMENT** for the year 2017 on **THE DHARAMSI MORARJI CHEMICAL COMPANY LIMITED, Mumbai.**



36 | CHEMICAL NEWS NOVEMBER 2015

**Certificate of Merit for
Energy Conservation & Management 2017**

FINANCIAL HIGHLIGHTS

Medical Services Income
an increase of \$100 million
streamlined services
University of Medicine's York
the largest academic multi-specialty
and the largest in Connecticut

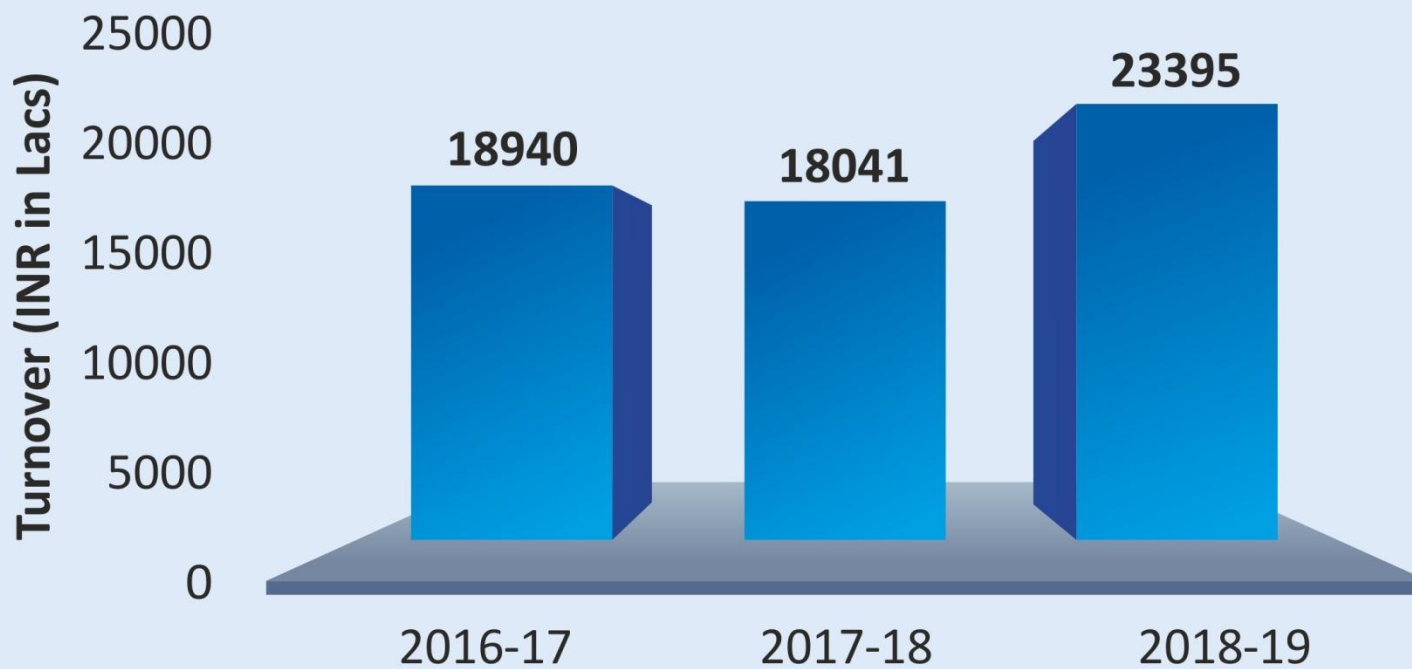
Many School of Medicine departments saw double-digit
increases in medical services revenues during fiscal year 2014
including Anesthesiology, Child Study Center, Diagnostic
Pathology, Emergency Medicine, Geriatrics, Internal Medicine,
Cardiology, Laboratory, Pediatrics, Psychiatry, Obstetrics
(Gynecology), Radiology, and Surgery. Yale New Haven Hospital
payments for physician services and recruitment
led by \$13.6 million (1.5%) to a total of \$185.9 million.

Grant and Contract Income
Ten-year trend analysis (\$ in millions)

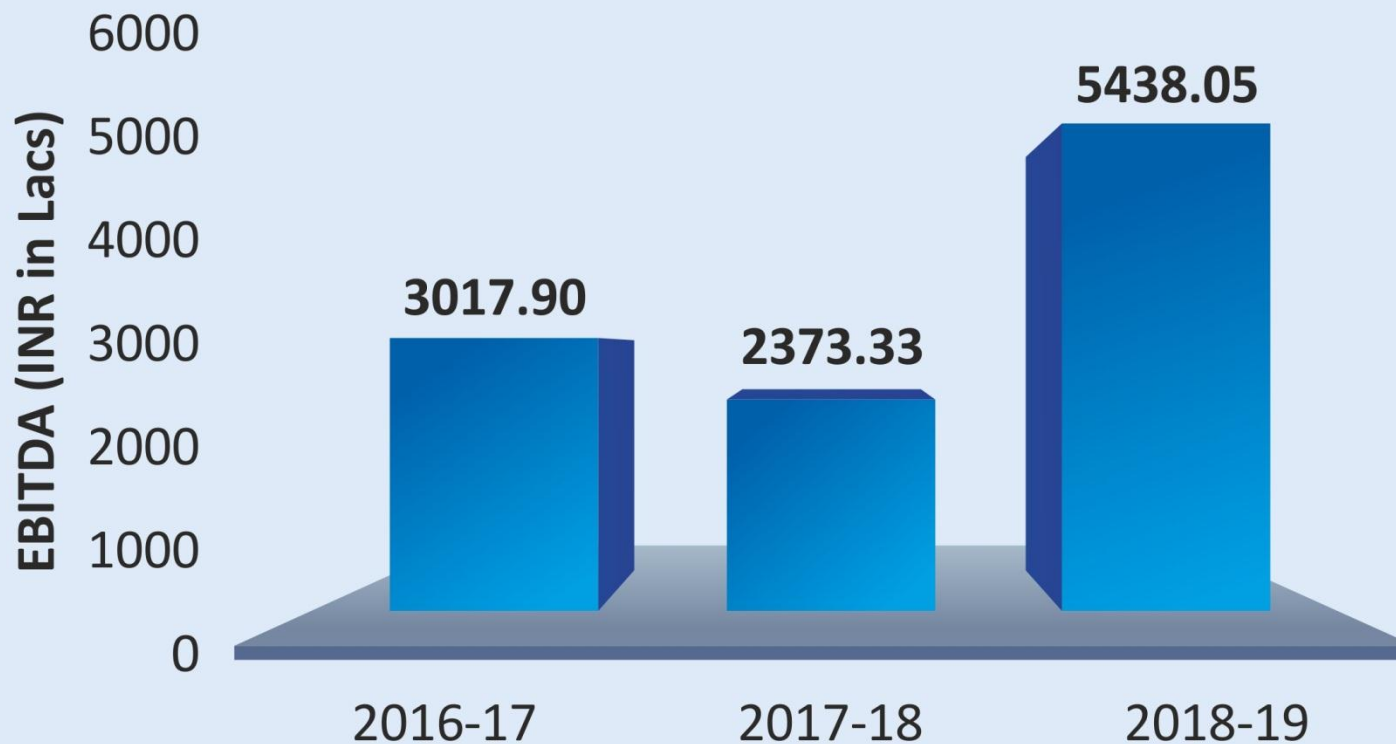


Financial Highlights

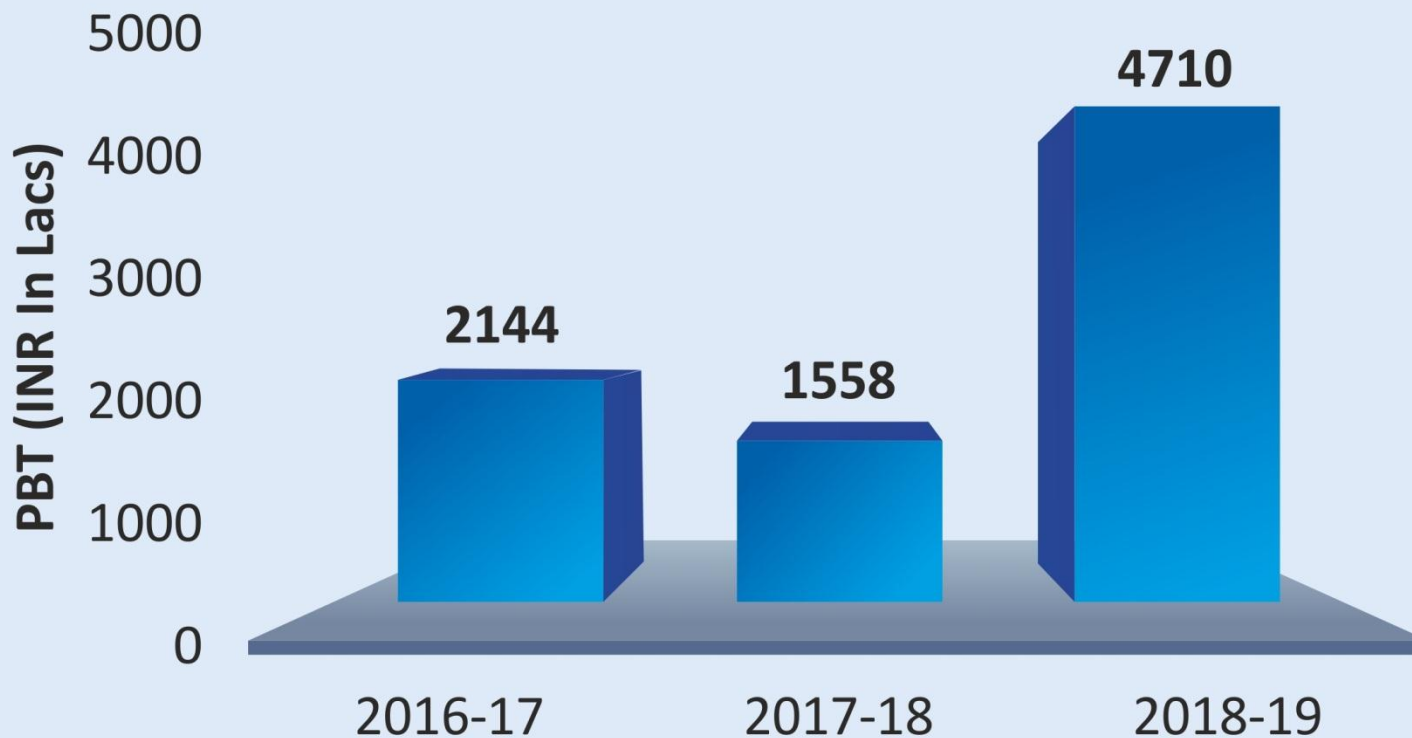
TURNOVER



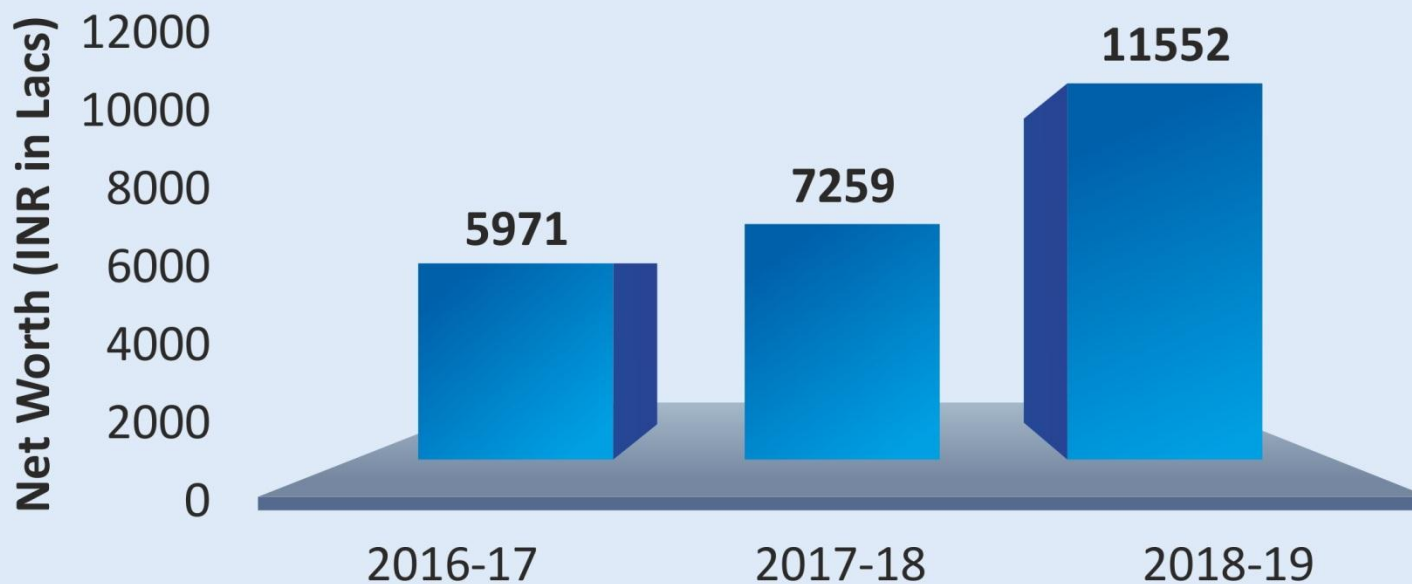
EBITDA



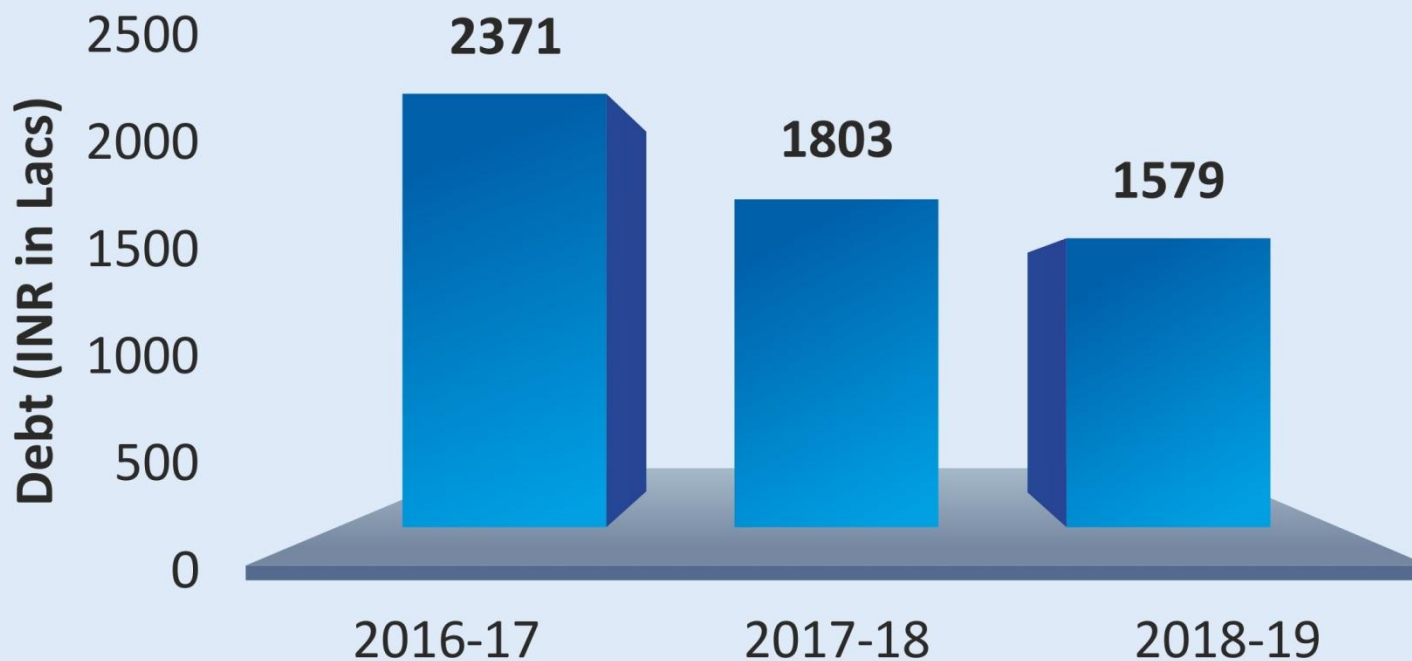
PROFIT BEFORE TAX



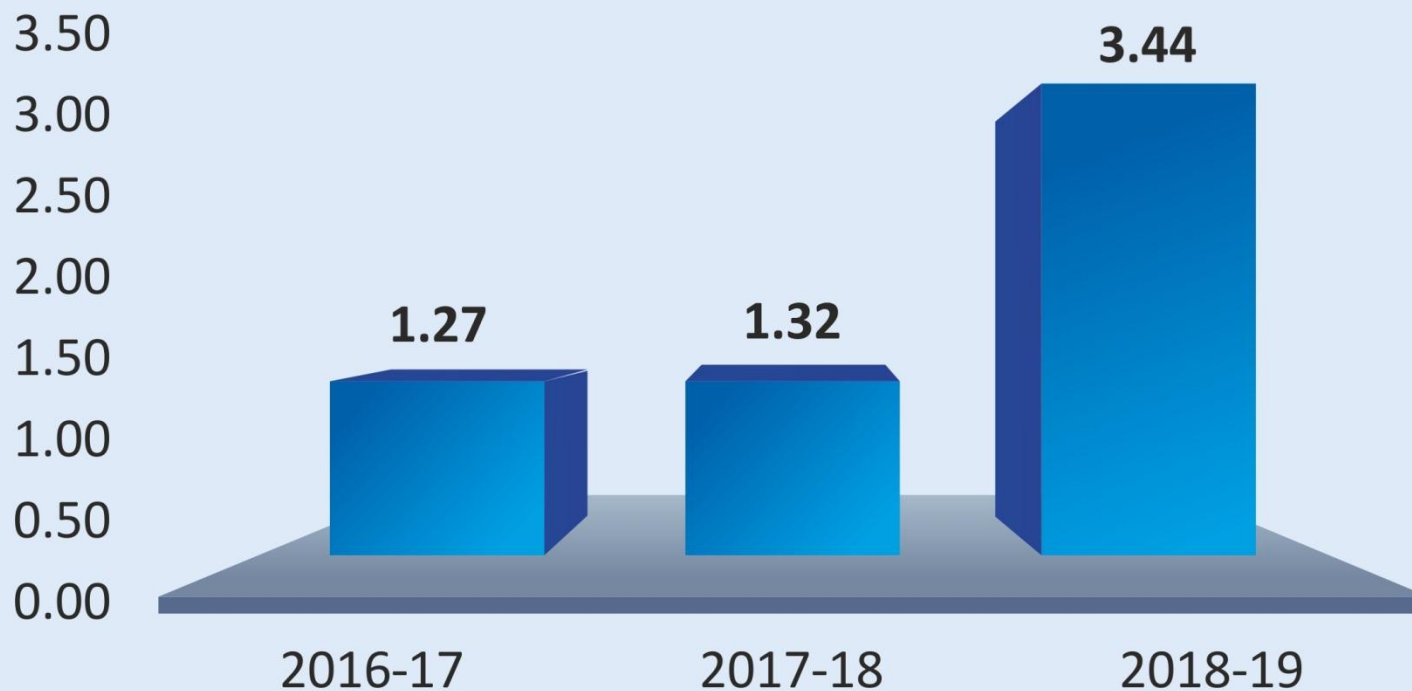
NET WORTH



TOTAL DEBT



DEBT SERVICE COVERAGE RATIO



Thank
you



THE DHARAMSI MORARJI
CHEMICAL CO. LTD.