



# **CHEMICAL DEPARTMENT INDUSTRIAL VISIT #2**

**GUJARAT HEAVY CHEMICAL LIMITED  
SUTARAPADA  
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# ACKNOWLEDGEMENT

On March 15, 2016 early in the morning we left for Sutrapada, Veraval. GHCL was located here. The entire class along with 2 faculty members- Dr. Manish Kumar Sinha and. We reached the industry at around 11'o clock. We were divided into 2 teams of 25 and were given an overview of the manufacturing process and the industry. Following this we were given a guided tour in the bus by the chief Chemical Engineer. The entire visit lasted about 2 hours.

We on behalf of the entire class would like to thank our department, the HOD and our Class Coordinator for organizing such a wondrous visit.

It was all in all a very knowledgeable and informative experience, not to mention we had a lot of fun too.



# OVERVIEW

Gujarat Heavy Chemicals Limited, GHCL was incorporated on 14th of October 1983. The company has established itself as a well-diversified group with an ascertained footprint in Chemicals, Textiles and Consumer Products segment. It is spread across 600 acres of land and has a monthly profit of a whopping 250 crores!!

In Chemicals, the company mainly manufactures Soda Ash (Anhydrous Sodium Carbonate) that is a major raw material for Detergents & Glass industries and Sodium Bicarbonate (baking soda). Its Textiles operations is an integrated vertical set up which commences right from spinning of fiber (yarn), weaving, dyeing, printing till the finished products, like sheets & duvets, take shape which are primarily exported worldwide.

Consumer Products operation is another business for GHCL where it is a leader in manufacturing and selling Edible salt, Industrial grade salt and Honey in the country.

GHCL is the first company of its kind to manufacture Soda Ash through Solvay's dry liming method technique. The technical know-how for installing the process was provided by Akzo-Zout Chemie BV, Netherlands it is also the first company to innovatively replace Metallurgical coke with in-house developed Briquettes, manufactured from coke breeze. Briquettes are used in the process of limestone decomposition

## **CORE VALUES**

### **RESPECT**

Means being thoughtful of or showing regard for another person. It focuses on the moral obligation.

### **TRUST**

Provides confidence in each other's capabilities and intentions of carrying out one's duties.

### **INTEGRATED TEAM WORK**

Connotes that actions of all individuals irrespective of departments or functions shall strive for achieving.

### **OWNERSHIP**

Implies that every individual continue to take responsibility of his/her own decisions & actions.

# Chemicals

## Soda Ash

Soda Ash is the common name for the technical grade of Anhydrous Sodium Carbonate ( $\text{Na}_2\text{CO}_3$ ). It is produced in two standard forms – Light and Dense, and graded according to its bulk density. Light Soda Ash is manufactured using revolutionary Dry Liming Process, which ensures optimum use of Energy. Dense Soda Ash is produced using the Monohydrate and Fluidized Bed Drying Process, the first of its kind in India, which fulfill the needs of glass manufacturing industries.

## Sodium Bicarbonate

GHCL also specializes in manufacturing food grade of Sodium Bicarbonate. We use a separate unit for this. The sodium bicarbonate manufactured by GHCL finds application in many industries including pharmaceutical and food additive industries. Procter & Gamble is one among some of our notable clients.

## Uses

Light Soda Ash: Alkali Products | Soaps | Detergents | Cleaning Compounds | Sodium Based Chemicals

Dense Soda Ash: Float | Sheet | Container and Specialty Glasses | Silicate and Some Chemicals

Sodium Bicarbonate: Detergent | Gold and Platinum Plating | Tanning Industry | Treating Wool and Silk | Fire

Extinguishers | Aerated Water and Baking Industry

# MANUFACTURING OF SODA ASH

- It is carried out by Solvay process
- Raw materials: Limestone(7,35,000 metric tons/annum)
  - : Solar salt
  - : Coal (in boilers)
  - : Ammonia (to make up losses)
  - : Sodium sulphite

## Process Steps

1. Brine preparation and purification
2. Lime kiln operation
3. Grinding
4. Ammonization and ammonia recovery
5. Carbonation
6. Filtration
7. Calcination
8. Packing and bagging



# **OTHER PRODUCTS**

## **Textiles**

The Textiles division at GHCL is a vertically integrated manufacturing facility with spinning, wide-width weaving, continuous fabric processing, and cut & sew facilities for manufacturing premium quality bed linen. GHCL's spinning unit is located near Madurai in Tamil Nadu, India. We manufacture multiple varieties of yarn ranging from 16s to 21s in open end, 30s to 100s in ring spun counts in 100% cotton and 30s to 70s counts in blended yarns. GHCL's Home Textiles manufacturing is located near Vapi in Gujarat, India. Here yarn is woven into fabric, which is then dyed, printed and finished into final products, like bed.

## **Consumer Products**

GHCL in all its entrepreneurial eagerness has also diversified and entered the salt business. The business was acquired in the year 1999 and has its salt works at Vedaranyam and the refinery at Chennai for its Edible Salt manufacturing. Our industrial salt commands a premium in Caustic soda industries and our edible salt are available in 'iFLO' and 'SAPAN' brands in the retail market.

# **ENVIRONMENT**

As a responsible corporate citizen, we are doing our bit to protect the environment and contribute to environmental wellness. After all, environmental degradation and climate changes are not just threats to the Earth; they are also threats to human survival.

At GHCL, they take environmental health quite seriously. To begin with, they practice environmental friendly habits:

They encourage plantation and water conservation methods within and outside our premises.

They have employed the latest Effluent Treatment Plant and Reverse Osmosis to ensure that no harmful substances are discharged in the environment.

They also leverage Wind Power for their energy needs. This way they have significantly cut down on their consumption of fossil fuels, which is a primary reason for pollution and environmental degradation.

They continuously draw on their enterprise strategy 'ABHILASHA' for inspiration to be among the best environmental friendly companies in India. And sensing from the sheer support and enthusiasm that they have got from their people, they are sure that they'd soon join the league of the best environmental friendly Indian companies.

Some of our environmental friendly initiatives include:

- 15 MW capacity of power source from wind energy set-up in Tamil Nadu for captive use at our Yarn division.
- Own cogeneration plant at Sutrapada which has a capacity of producing 26.2 MW of power.
- Condensed turbine of capacity 12.5 MW to meet additional energy requirements at Sutrapada.
- 4.5 MW of energy generated for captive use at Vapi using the latest gas turbine technology.
- One of the first companies in Asia to introduce environmental friendly techniques for reduction in lime wastages.

**Thank you**