



Creating Magic Through Chemistry



ADITYA BIRLA GROUP

- A **US \$48.3 billion** corporation.
- Global conglomerate, in the League of Fortune 500.
- Anchored by an extraordinary force of over 120,000 employees, belonging to 42 nationalities
- Over 50% revenues flow from operations beyond India spanning 36 countries.
- Ranked 4th globally & 1st in Asia Pacific as 'Top Companies for Leaders' (2011), by Aon Hewitt, Fortune Magazine and RBL.
- Topped Nielsen's Corporate Image Monitor 2014-15.

PERFORMANCE SOLUTIONS OFFERED BY DOMESTIC CHLOR-ALKALI BUSINESS



Bio-security for Aquaculture



Total Water quality management



Non-phthalate processing solutions



Food processing derivatives



High Strength Bleach



Homecare Disinfection solutions



GRASIM INDUSTRIES LTD. CHEMICAL DIVISION



DSIR recognised
R&D Lab Facilities

Under its chemical business, Grasim Industries limited manufactures Caustic Soda and allied products like Hydrochloric Acid, Hydrogen Gas, and Chlorine Gas. With 1,147 KTPA total caustic soda capacity, the company has 8 manufacturing units across India. It caters to speciality applications with its unique range of Chlorine derivatives and Performance chemicals in below segments.

	WATER	PLASTICS	FOOD	INDUSTRIAL
PRODUCTS	<ul style="list-style-type: none"> ● Poly Aluminium Chloride Variants ● Calcium Hypochlorite ● Chlorine (Liquid) ● VYTAL 2810, SD+, A971 ● VYTAL HBC SUPRA ● Aqua Armor C-100, D+, HSD Prime ● Rensa HS Bleach 	<ul style="list-style-type: none"> ● Chlorinated Paraffins ● Twist FM-MO 	<ul style="list-style-type: none"> ● Food Grade Phosphoric Acid ● Calcium Chloride ● Altura Pro Cal+ 	<ul style="list-style-type: none"> ● Caustic Soda Flakes ● Calcium Chloride ● Anhydrous Aluminium Chloride ● Poly Aluminium Chloride Variants ● Calcium Hypochlorite ● Technical Grade Phosphoric acid ● Chlorosulphonic Acid



1
MILLION

LARGEST CHLOR-ALKALI Player in India

The Chlor-Alkali business of Grasim Industries Limited achieved 1 million tonnes of Caustic sales in FY19. We are the largest chlor-alkali player in India, manufacturing over 1 million tonnes of caustic soda annually, which is almost 50% larger than compared to next player in India. We produce a variety of products that have diverse applications, including pulp and paper production, hydrogenated fats production and water purification.

Here is a glimpse of our chlor-alkali product range and the various industries that we are actively serving globally.



Caustic Soda Lye & Flakes

It is also known as Sodium hydroxide. The Caustic soda flakes are devoid of any foreign matter, dirt, or other visible impurities. The varied range of applications for both Caustic Soda Lye & Flakes are as follows:

The production of pulp and paper, soaps, detergents, viscose fibre, zeolites, food additives, textile processing, organic chemicals such as dyes, inorganic chemicals such as sulphites, phosphites and aluminium refineries.



Chlorine

It is widely used to treat water as well as in the manufacture of the following products:

Sodium hypochlorite, Calcium hypochlorite, Poly vinyl chloride (PVC), Isocyanates, Polycarbonate, Chloromethanes, Perchloroethane, Phosgene, Ferric chloride, Epichlorohydrin, Poly aluminium chloride, Silicon dioxide (aerosol) and Chlorinated paraffin.



Hydrogen

Hydrogen is a by product released during the production of caustic soda. The gas is then treated, and compressed for the following purposes:

Hydrogenation of edible oils for making vanaspati and non-edible oils for making soaps, hydrogenation of petro-products for making hard lubricants, sintering in the making of tungsten carbide tool bits and in powder metallurgy, underwater gas cutting and plasma cutting, rocket propulsion, the production of hydrogen peroxide.



Hydrochloric acid

Food grade hydrochloric acid is used in the production of food ingredients, food additives, and in the sugar and brewery industries. Industrial grade is used for other purposes, like petroleum refining and leather treatment. Also known as hydrogen chloride or muriatic acid, it has a variety of applications, some of which are as follows:

Monosodium glutamate, glutamic acid, dyes, latex coagulation, metal pickling, petroleum refinery, floor cleaning product, phosgene, leather industry, sugar refining, brewery, galvanising and water treatment.



Sodium hypochlorite

Also known as chlorine bleach or soda bleach, sodium hypochlorite works as a great steriliser, decolouring agent, oxidiser, germicide, fungicide, and deodorant. It is used as:

A bleaching agent for rayon pulp, paper, cotton, linen and jute, a household bleach for fly control, water treatment, and pool chlorination, a disinfectant and deodorant in dairies.



COAGULATION

- **Poly Aluminium Chloride** is used for removal of anionic colloidal impurities and settling of suspended materials during clarification of drinking water, sewage and industrial effluents. It is also used for removal of residual color, TOC and to meet the discharge norms.
- Products : Liquid & Powder AC 100S (Medium Basicity), Liquid & Powder ARYAPAC (High Basicity), Liquid & Powder SAB 18.



DISINFECTION

- These are anti-microbial formulations that are used to destroy micro-organisms in potable water, effluent and other surfaces. It kills molds, germs and bacteria by reacting with microbial cells to irreversibly denature and destroy many pathogens.
- Products: **Calcium Hypochlorite** – 35% Active Chlorine Content, Rensa HS Bleach.



HYGIENE & CLARIFICATION

- Swimming pool water generally contains many tiny particles in the form of impurities. These particles will typically have the same negative chemical charge, thus they repel each other and do not settle down easily. Our customized formulations boosts the disinfection and removal of these impurities by bringing it out in the form of floc much faster compared to conventional techniques. This floc can later be trapped in a filter.
- Products: **VYTALPOOL-18** (Safe and sludge free clarifier suitable for all pool types), Rensa HS Bleach.



BIO-SECURITY

- Pond or Brackish water where shrimps are grown require monitoring and control of Biological Oxygen Demand (BOD) concentration. Pond Water Clarification followed by Disinfection is a proven way to provide security to the harvest and thus improve the quality & life of shrimp. It also offers the dual advantage of deodorizing the yield.
- Products: Aqua Armor C-100, D+ & HSD Prime.



RECYCLE & REUSE, FOR ETP / STP

- Our Premium range of coagulants offer superior performance, with extended shelf life, which is best suited for industrial & water treatment applications. It offers stability over a longer period and excellent clarity of treated water. It warrants for lower dosages causing less chemical consumption & negligible change in pH of water.
- Products: **Poly Aluminium Chloride**



FLAME RETARDANT & PLASTICIZER

- Our secondary plasticizer range of **Chlorinated Paraffins** for wires & cables is based on refined medium chain (C_{14} - C_{17}) Chloroalkanes. Some of these grades are specially designed for Type-A, 70°C service temperature applications. The Medium molecular weight grades have good compatibility with PVC, which helps to get desirable results like Hardness, Tensile strength, Elongation, Ageing properties and Cell resistance.
- We also offer high molecular weight secondary plasticizers which imparts superior flame retardant properties, owing to the high chlorine content. Its increased polarity and lower viscosity make it more compatible with PVC polymer and maintains long term mechanical properties.



FLEXIBILITY SOLUTIONS

- The **Chlorinated Paraffins** with Medium molecular weight and low viscosity have very good plasticizing efficiency. They are recommended for various Transparent & Opaque tubing like Garden hose, Suction and multi-purpose tubes.
- They are also recommended for PVC Compound, Footwear, etc. due to their excellent flexibility properties.



EXTREME PRESSURE ADDITIVES

- We offer additives for lubricants like Metal Working Fluids which are used to decrease wear of the parts of metal or alloy workpieces exposed to very high pressures, such as machining and stamping. They are also added to cutting fluids for machining of metals. Their high viscosity gives additional lubricity, body and tenacity to the lubricant.



FLEXIBILISER AND FILLER

- **Chlorinated Paraffins** are recommended for various non-PVC coating applications like Paints, Varnishes and other coatings. These are also preferred in coatings for industrial floorings and swimming pools.
- The Low viscosity product improves resistance to water and chemicals. It has good flame retardant properties and is suitable for abrasion resistant paints. Due to its non-corrosive nature, these are preferred in marine paints and vessels.



DEGUMMING

- **Phosphoric acid** is used for Degumming in the Edible Oil refining process. It is used to separate the gums, phospholipids, proteins, etc. that are insoluble in the oil when hydrated. This reduces the Oil losses during alkali refining as a result of emulsifying action of phospholipids. It also avoids discoloration of oil during heating, caused by the gum impurities.



COAGULATION

- **Altura Pro Cal+** is added to pasteurized skim milk to help coagulate the curds, increase firmness, and replace calcium lost by heating. It is also used in Dairy Production, for Calcium fortification (source of calcium) with only a small alteration of the taste.



MINERAL SUPPLEMENT

- **Altura Pro Cal+** finds application in Beer, Breweries & Soda to correct the mineral deficiencies in the brewing water and ensure uniform taste. It is also used in Fresh fruits, canned fruits and pickled vegetables to increase firmness and shelf life.



CLARIFICATION

- **Food Grade Phosphoric acid** is available in 5 Kg small packing with 85% purity. It is primarily used in Agriculture for improving the color & texture of Jaggery by removing the unwanted sediments from the sugarcane juice. It is also used in effective cleaning of the drip pipes, as it quickly removes salt scale formation in the pipe.



DRILLING MUD ADDITIVE

- **Calcium Chloride** is extensively used in oil and gas industry as an additive for drilling mud to cool and lubricate the drilling bit. It also helps in improving density of the mud to overcome formation pressures and keep oil, gas, and water in place.



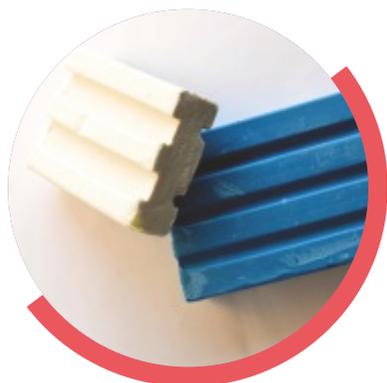
FREIDEL CRAFT CATALYST & ADDITIVE

- **Aluminium Chloride Anhydrous** is used as a catalyst (especially in Friedel-Crafts reaction) for the manufacture of Styrene, Anthraquinone and in other dyestuffs (Green Pigment), Pharmaceuticals and Perfumes.
- It also finds use in ion exchange resins, lubricants, wood preservatives, crude oil refining, and as nucleating agent in the manufacture of Titanium dioxide pigments.



PAPER SOLUTIONS

- Paper Sizing - Cellulosic fibers are anionic & hydrophilic in nature. **Poly Aluminium Chloride** based Cationic coagulants are used for neutralization of anionic trash of fiber and as sizing aid for neutral and acidic sizing. Sizing makes the paper suitable for writing and printing by avoiding penetration of water.
- Bleaching - To produce high quality paper a pulp is required which does not discolour during storage or turn yellow when exposed to sunlight, and which retains its strength. Bleaching with **Stable Bleaching powder** achieves all three requirements and has the additional advantage of improving absorption capacity.
- **Calcium Chloride** is behind the Color Lock Technology which is the mark for Brighter Colors, Bolder Blacks and quicker drying for faster handling time and smudge-free, high-quality prints.



WATER SOFTENING

- **Phosphoric acid** is used to produce water softeners. Water softeners remove Calcium and Magnesium ions from "hard" water. If not removed, these ions react with soap and form insoluble deposits that cling to laundry and the washing machine.



Creating Magic Through Chemistry

For details, call: +91-22-24399132 | Email: grasimchem.online@adityabirla.com

Grasim Industries Limited (Chemical Division)
10th Floor, Birla Aurora, Near Century Bhavan,
Dr. A. B. Road, Worli, Mumbai - 400 030

Website: www.adityabirlachemicals.com

Aditya Birla Management Corporation Private Limited is the owner of all the Trademarks and Copyright subsisting therein. Grasim Industries Limited is using said trademark and artistic work under license from ABMCPL. Specifications and service level assurances are not binding and are subject to change without prior notice. Prospective purchasers are advised to conduct their own tests and studies to determine the suitability of our products for their particular purposes and specific applications. All images are for representation purposes only.

Product Disclaimer: If a Product supplied hereunder is not free of defects, the Company shall after satisfying itself that the Product is defective, either (i) endeavor promptly to replace such Product with conforming Product at the Company's expense, or (ii) reimburse the Buyer any amount paid for the defective Product for the invoiced value of the previously supplied Product, however the Company is not obligated to compensate any incidental costs incurred by the customer in use of defective product. For the avoidance of doubt, the Company liability for the Products supplied to the Buyer is limited to defects which appear within the shelf life in the technical description of the Product in question.

Copyright © 2020 Grasim Industries Limited. All rights reserved.