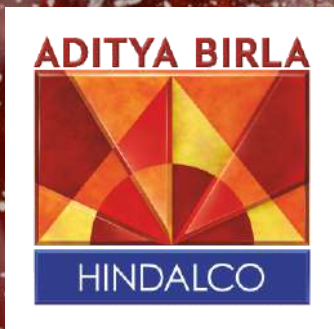


# HINDALCO CHEMICALS FLAME RETARDANT ALUMINA TRIHYDRATE

SUSTAINABLE INTEGRATED MANUFACTURING



WE MANUFACTURE MATERIALS THAT MAKE THE WORLD  
GREENER | STRONGER | SMARTER

RETARDING FIRE. SUPPRESSING SMOKE. SAVING LIVES.





# HINDALCO

An industry leader in Aluminium and Copper, Hindalco Industries Limited, the metals flagship company of the Aditya Birla Group is the world's largest Aluminium rolling company and one of the biggest producers of primary aluminium in Asia. Its copper smelter is amongst the largest single location custom smelter globally. Hindalco Novelis' sites in Asia, Europe, North and South America,

- ▲ **Turnover USD 18 Billion in FY21.**
- ▲ **47 Operations units (including Mines) Across 10 countries**
- ▲ **Ranked World's most sustainable Aluminium company by \*DJSI 2020 & 2021)**
- ▲ **37,000 work force.**

## HINDALCO CHEMICALS BUSINESS

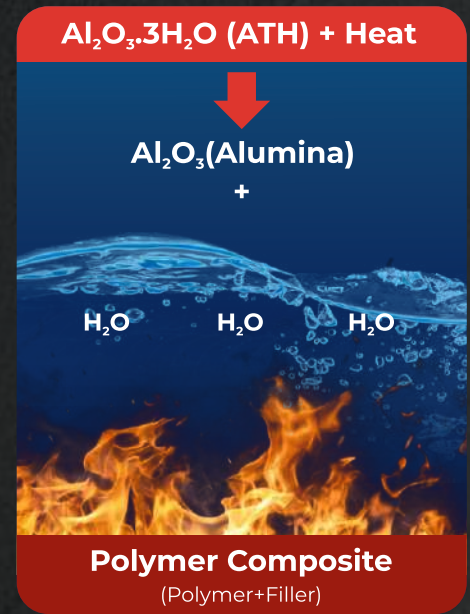
Hindalco Chemicals produces metallurgical alumina, chemical grade speciality aluminas and hydrates. These chemical grade aluminas and hydrates are products of the technological innovations of our R&D team, Hindalco Innovation Centre – Alumina (HIC-A). It is recognized by the Department of Scientific & Industrial Research (DSIR), Government of India. One of the largest fully integrated sustainable manufacturer and supplier of Speciality Alumina and Hydrate globally. Our chemicals serve a wide range of customers around the world with a wide spectrum of grades, suitable for diverse applications like high grade refractories, ceramics, fire retardant plastics/composites, alum, zeolite and many more. Today, our customised products serve variety of customers in 36 countries across the world. The manufacturing facility has Fully integrated mines, refinery operations with downstream processes for manufacturing Speciality Alumina and Hydrate. With an installed capacity of 380,000 TPA, we have the potential of catering specific demands of our customers.



# FLAME RETARDANTS

Aluminum Trihydroxide (ATH) is separated from its ore Bauxite using the Bayer process. Alumina hydrate is an amphoteric metal hydroxide which finds its place in many industrial applications. 3 molecules of water are combined with aluminum oxide to form one molecule alumina hydrate. These water molecules are released as water vapor when ATH is heated above its decomposition temperature of 220 °C. The reaction is highly endothermic and irreversible

**Flame retardant mechanism :** Ignition source provides energy for the combustion. During combustion the energy released is absorbed by mineral filler for decomposition. The decomposition products are water vapor and mineral oxide which are inert in nature. The endothermic decomposition reaction coupled with insulation decomposition products reduces the fire propagation. This way the mineral filler will act as a flame retardant and reduce the severity of fire accident. Also the smoke generated by burning of ATH filled polymer composite is inert and less dense.



**Flame Retardant Mechanism**

**ATH is one of the widely used high performing halogen free flame retardant additive.**

Halogen Free | Smoke Suppression | Non Corrosive  
Environment Friendly | Non toxic | Inert

HINDALCO is one of the most sustainable mines to market manufacturer of alumina trihydrate with end to end quality control.

## HINDALCO FLAME RETARDANTS OFFERINGS

Ground ATH

Low viscosity ATH

Ultra Low viscosity  
ATH

White ATH

Low electrolyte ATH

Surface modified  
ATH

Precipitated ATH  
(Upcoming)

RETARDING FIRE. SUPPRESSING SMOKE. SAVING LIVES.

TYPE OF ATH		GROUND ATH						LOW VISCOSITY ATH						
Hindalco ATH offerings with Grades & Recommended Applications	Polymer / Grades	RPF14	DHM06	RPF18	DHM	DHM15	FH22D	FHC	MHV06	MHV20	TH15	MH18D	JFM10	MHB10
KEY PROPERTIES	D50(μm)	4.5	6	8	10	15	22	6	9	10	12	18	15	11
PULTRUSION	UPR					♦	♦		♦			♦		♦
RTM	UPR	♦	♦		♦									
GRATING	UPR	♦	♦		♦							♦		♦
HAND LAYUP	UPR	♦	♦						♦	♦		♦		
CABLE COMPOUNDS	PVC	♦												
CABLE COMPOUNDS	EVA													
RESINS	UPR	♦	♦						♦	♦				♦
CONVEYOR	RUBBER	♦	♦	♦										
SYNTHETIC ZEOLITE							♦							
SYNTHETIC GEMS	ACRYLIC										♦			
COATING	PU	♦	♦	♦		♦					♦			
CAST RESIN TRANSFORMER	EPOXY	♦			♦	♦								
VESTIBULES	RUBBER	♦												
LAMINATES	UPR	♦	♦						♦	♦		♦		
TECHNICAL FABRICS	PVC	♦	♦											
TUBES & PIPES		♦	♦						♦	♦		♦		♦
FIBER GLASS						♦								
CATALYST CARRIER						♦		♦					♦	
PAPER COATING/FILLER														
ELECTRICAL														
CERAMIC COLOUR	EPDM					♦								
FOAM	ACRYLIC	♦												
SOLID SURFACE		♦												
ADHESIVE	SILICONE	♦												
POLYMER INSULATOR		♦							♦					
POWDER COATING														
CEMENT BOARDS		♦				♦						♦		
GLASS COATING														
FRP INSULATION				♦		♦			♦		♦			♦
PAINTS				♦										



TYPE OF ATH		SURFACE MODIFIED ATH						ULTRA LOW VISCOSITY ATH		LOW ELECTROLYTE*	WHITE HYDRATE HW	PRECIPITATED HYDRATE	
Hindalco ATH offerings with Grades & Recommended Applications	Polymer / Grades	HC041	HC081	DHM15ES*	MHV20T	RPF14VS*	MHV06VS*	HLV213*	HLV206*			SFH105**	SFH108**
KEY PROPERTIES	D50(µm)	4.5	8	15	10	4.5	9	80	15	4-80	4-80	1.8	1.2
PULTRUSION	UPR							♦	♦	♦			
RTM	UPR	♦	♦					♦					
GRATING	UPR	♦	♦					♦	♦	♦			
HAND LAYUP	UPR	♦	♦					♦	♦	♦			
CABLE COMPOUNDS	PVC	♦				♦					♦	♦	♦
CABLE COMPOUNDS	EVA											♦	♦
RESINS	UPR	♦	♦										
CONVEYOR	RUBBER	♦	♦			♦		♦	♦	♦			
SYNTHETIC ZEOLITE													
SYNTHETIC GEMS	ACRYLIC												
COATING	PU							♦	♦	♦			
CAST RESIN TRANSFORMER	EPOXY			♦							♦	♦	♦
VESTIBULES	RUBBER					♦	♦	♦				♦	♦
LAMINATES	UPR							♦	♦	♦		♦	♦
TECHNICAL FABRICS	PVC											♦	♦
TUBES & PIPES								♦	♦	♦		♦	♦
FIBER GLASS													
CATALYST CARRIER													
PAPER COATING/FILLER												♦	♦
ELECTRICAL											♦	♦	♦
CERAMIC COLOUR	EPDM												
FOAM	ACRYLIC											♦	♦
SOLID SURFACE								♦	♦	♦			
ADHESIVE	SILICONE							♦					
POLYMER INSULATOR						♦	♦				♦	♦	♦
POWDER COATING											♦		
CEMENT BOARDS													
GLASS COATING													
FRP INSULATION													
PAINTS												♦	♦

\*\*UPCOMING PRODUCTS (Samples Available)

\*NEWLY DEVELOPED PRODUCTS



# Hindalco Innovation Center-Alumina (HIC-A)

HIC-A is recognized by the department of scientific & industrial research(DSIR), Government of India. With over 25 years of experience, the research & development team of expert scientists carry out research in the field of bauxite, the Bayer process products development, quality control and application research for enhanced understanding of end-usage of specialty alumina's and alumina hydrates.



## APPLICATION SUPPORT

**State-of-the-art lab equipment at HIC-A includes:**

- ▲ Scanning electron microscope for studying crystal shape and structure
- ▲ Multiple equipments for PSD Analysis
- ▲ X-Ray fluorescence for elemental analysis
- ▲ X-ray diffraction for analyzing phases
- ▲ Surface area analyzer

## PARTNERS IN PROGRESS

**Hydrate Application Research Equipments Includes:**

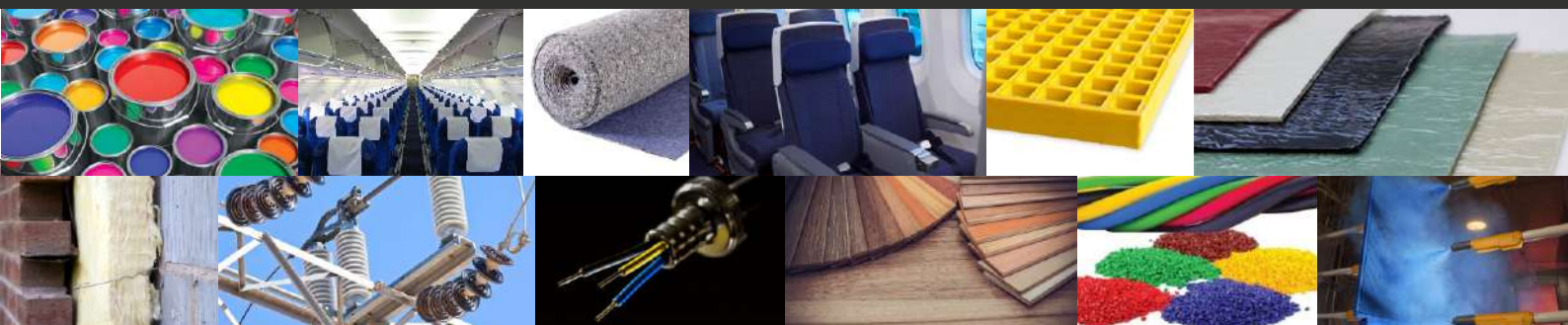
- ▲ HAAKE
- ▲ Compression moulding
- ▲ Flammability tester (UL 94)
- ▲ Limiting oxygen Index tester
- ▲ High voltage electrometer
- ▲ UV & Heat aging equipment

## QUALITY CONTROL CERTIFICATION

**CUSTOMIZED ALUMINA HYDRATE TO ACHIEVE YOUR MISSION OF**

- ▲ Conserving Energy
- ▲ Improving Quality in application
- ▲ Saving Lives
- ▲ Sustainability

Disclaimer : All Data is based upon Hindalco standard test methods. All data listed are reference values and subjected to production tolerance. These values are applicable to the product description and no guarantee is placed on the properties. It is the responsibility of the user to test the suitability of our products in their application. Hindalco test methods can be shared on request.

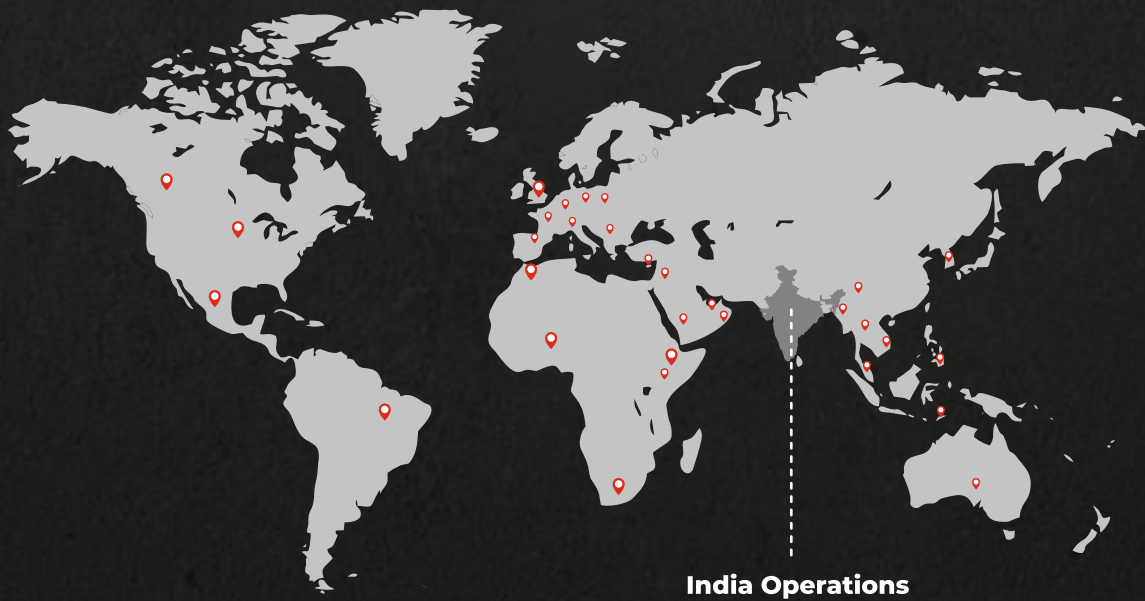




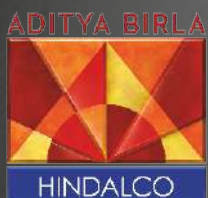
## Customer Service with...



## Our Global Reach



#darshangroups.in



for more details contact :

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