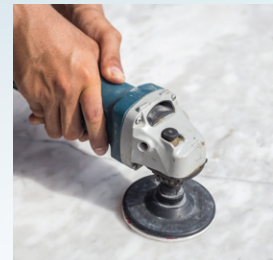


# POLISHING ALUMINAS

FOR NEW AGE APPLICATIONS



**SOLUTIONS**  
*you can trust*



Belagavi unit, Karnataka  
A world-class manufacturing unit of Alumina.

# Hindalco Alumina

*Leading from the front*

Hindalco Chemicals produces chemical grade speciality aluminas and hydrates. These chemical grade aluminas and hydrates are products of the technological innovations of our R&D team at Hindalco Innovation Centre – Alumina (HIC-A). HIC-A is recognized by the department of Scientific & Industrial Research (DSIR), government of India. Hindalco is one of the largest 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 polishing, high grade refractories, ceramics, fire retardant plastics/composties and many more. Today, our customised products serve variety of customers in 36 countries across the world. The manufacturing facility has 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.**

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 are Asia, Europe, North and South America.

Turnover  
**USD 26 Billion**  
in FY22.



**47 operational units**  
across 10 countries



Ranked **World's Most Sustainable**  
Aluminium company by  
\*DJSI 2020, 2021 & 2022



**1,40,000+**  
skilled and qualified  
workforce



# Calcined Alumina

*A highly abrasive material*

Calcined Alumina, a highly abrasive material is widely used in the polishing industry because

- The characteristics of Alumina can be customized to suit the polishing application.
- Alumina being inert, its properties do not change under pressure and temperature which it experiences during the polishing process.

Calcined Alumina is usually mixed with binders and emulsions to prepare compound which is used to Polish metals, plastics, stones, glass surfaces and jewellery.

Polishing is a two stage process which converts a rough surface into a smooth glossy one with mirror finish.

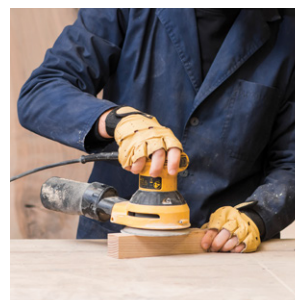
The two stages are -

### Stock Removal / Cutting -

Stock Removal is the initial stages of polishing in which an uneven surface is leveled by removing the material. Cutting application requires special high Calcined Alumina for material removal and smoothening of Surface. These high calcined Alumina grades are, predominantly in alpha phase with controlled crystal size and purity levels, to give desired hardness and grain size. Alumina does not react chemically with the surface to be polished.

### Polishing -

In the final stage of polishing, surface of the substrate is smoothened to get glossy mirror finish. Final polishing application requires low calcined soft Alumina with fine particle size to churn out a uniform surface without scratching.

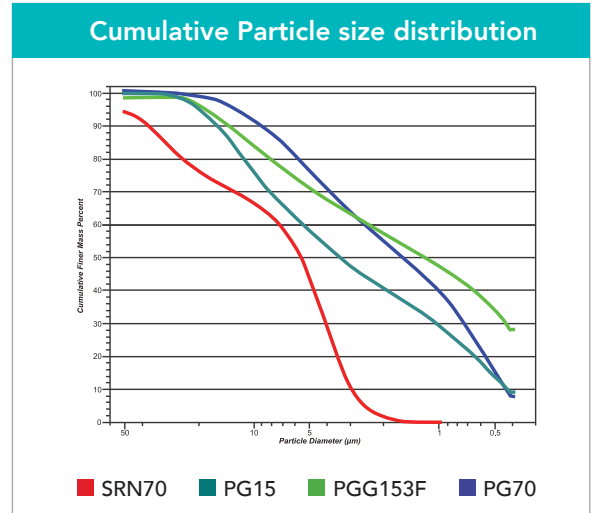


Application	Alumina - Degree of calcinations		
	Low	Medium	High
Stainless Steel	■	■	■
Chrome plating	■		
Brass	■	■	
Non ferrous metal	■	■	
Precious Metal	■		
Granite/ Marble	■		
Plastics/Rubber	■		
Wood	■		
Glass	■		
Automotive polishes	■		
Effect	Polish	Polish / Cut	Cut

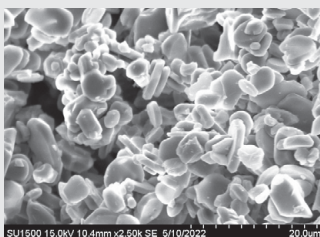
# Premium Alumina

*For polishing applications*

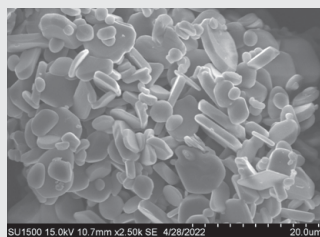
Hindalco's long experience in manufacturing specialty Calcined Alumina enables it to perfect customized variations required in the process of manufacturing full range of polishing Aluminas, soft calcined for polishing to extremely hard calcined for stock removal. Coarse Alumina obtained after calcinations are ground to the required particle size to meet specific requirements. Different grinding methods (fluid energy mills and Ball Mills) are available with Hindalco to obtain the desired particle size distribution in polishing Alumina. The properties of Hindalco's polishing Alumina are outlined in the attached table. Alumina are arranged in the decreasing order of cut effect or increasing order of polish effect. High cut Alumina (hard calcined) will have low polish effect.



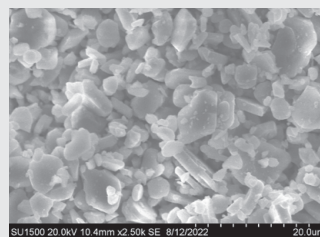
Properties		LOI (Typ)	Al <sub>2</sub> O <sub>3</sub> (Min)	Na <sub>2</sub> O (Typ)	SiO <sub>2</sub> (Typ)	Fe <sub>2</sub> O <sub>3</sub> (Typ)	SSA (Typ)	D50 (Typ)	Effect
Unit		%	%	%	%	%	m <sup>2</sup> /g	Micron	
HARD	HCA4	0.07	99.6	0.08	0.03	0.02	0.5	-	High Cut
	HCA3	0.07	99.6	0.1	0.03	0.02	0.6	-	High Cut
	FG50	0.12	99.4	0.35	0.02	0.02	0.6	50	High Cut
	SRN70	0.2	99.4	0.35	0.02	0.02	0.8	7	Cut
MEDIUM	SRM906	0.1	99.4	0.35	0.02	0.02	0.8	5.5	Medium Cutting & Lower Polishing
	HCA3SG	0.09	99.8	0.08	0.06	0.02	0.9	3.6	Medium Cutting & Lower Polishing
	HI	0.1	99.4	0.30	0.02	0.02	0.8	--	Medium Cutting & Lower Polishing
	PGC5	0.2	99.4	0.35	0.02	0.02	1	3.5	Medium Polishing
	BM45	0.2	99.4	0.35	0.02	0.02	1	4.5	Low cutting & Moderate Polishing
SOFT	PG04	0.8	99.4	0.35	0.02	0.02	7	1	Soft polishing & lower cutting
	PG04U	0.8	99.4	0.35	0.02	0.02	6	-	Soft polishing & lower cutting
	PG70	0.8	99.4	0.35	0.02	0.02	7	1.5	Soft polishing & lower cutting
	SMA4	1.0	99.6	0.08	0.04	0.02	6.5	0.6	High polishing
	PGG153	0.8	99.4	0.35	0.02	0.02	12	3.5	High polishing
	PGG153F	0.8	99.4	0.35	0.02	0.02	12	2.5	High polishing
	PG15	0.8	99.4	0.35	0.02	0.02	13	6	Medium Polishing
	GR	0.8	99.4	0.35	0.02	0.02	12	-	Medium Polishing
	PG021	0.8	99.4	0.35	0.02	0.02	7	6	Medium Polishing
	PG701	0.8	99.4	0.35	0.02	0.02	7	1.5	Medium Polishing
PGG1201	1.2	99.4	0.35	0.02	0.02	12	1	Medium Polishing	



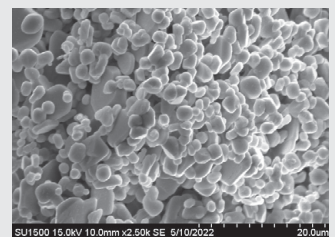
SRN70



HCA4



HCA3SG



HI



# Hindalco Innovation Centre-Alumina (HIC-A)

## *Partners in progress*

HIC-A is recognised 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, processibility studies of the Bayer Process, product development, quality control and application research for enhanced understanding of the end-usage of specialty chemicals.



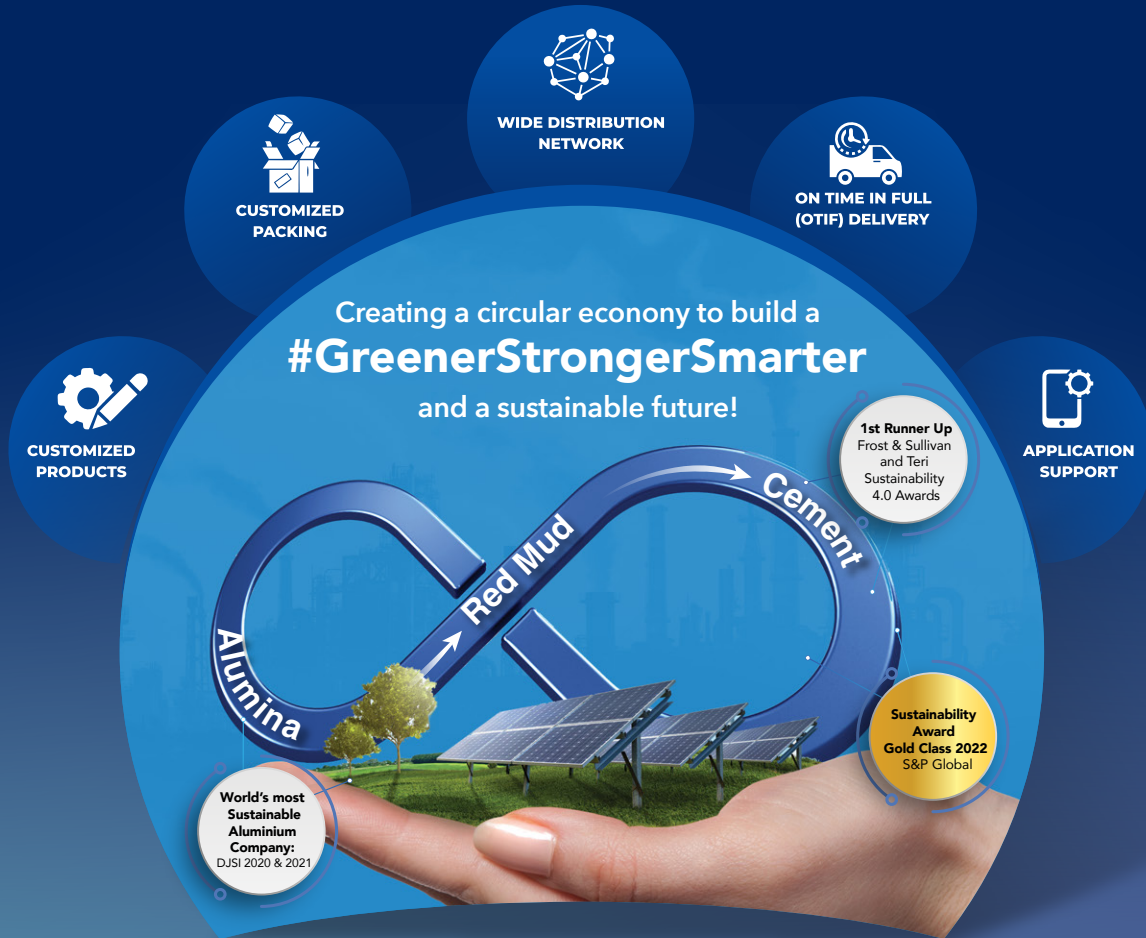
### State-of-the-art Lab equipment at HIC-A includes:

- Scanning Electron Microscope for studying crystal shape and structure
- Sedigraph Particle Size Analyser
- X-Ray Fluorescence for elemental analysis
- X-Ray Diffraction for analysing phases in alumina
- Surface Area Analyser
- Infrastructure for carrying out application engineering studies and new product development.



*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 users to test the suitability of our products in their application. Hindalco test methods can be shared on request.*

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## OUR GLOBAL REACH



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