



ALCOA WORLD ALUMINA, LLC

C30 Bayer Hydrate – Hydrated Alumina

Rail Car & Barge Specifications

CHE 901
April 2014

Product Information

Alcoa® C30, also known as alumina trihydrate (ATH), or hydrate, is more accurately described as aluminum trihydroxide, Al(OH)₃. Although hydrated alumina is dry to the touch, it is chemically combined with three molecules of water (approximately 35 percent by weight). It is nonabrasive with a Mohs' hardness index of 2.5-3.5. C30 has good purity, color and reactivity.

C30 is considered a non-toxic chemical with a low health risk by inhalation. It is to be treated as a nuisance dust as specified by the American Conference of Governmental Industrial Hygienists (ACGIH). For more details, refer to Alcoa Material Safety Data Sheet No. 839.

Product Description

C30 is the basic alumina precipitated from the Bayer process. It is approximately 99.5 percent pure, with very small amounts of soda, iron oxide and silica that are occluded during precipitation. Special steps are taken to ensure that these impurities are held at minimum levels. Trace organic impurities originating in the bauxite ore give C30 a slight off-white or ivory color that is acceptable in most applications. Alcoa's unique fluid bed drying process is utilized to provide a hydrate with excellent solubility in most acids and bases...an important factor in many chemical uses.

Product Applications

C30 is used extensively in the production of aluminum chemicals, most commonly:

- alum
- zeolites
- aluminum chlorohydrates
- sodium aluminate
- anhydrous aluminum fluoride
- sodium aluminum sulfate
- aluminum phosphate
- alumina-based catalysts
- poly aluminum sodium silicate

C30 is widely used as flame retardant and smoke-suppressant fillers in carpet backing, rubber and polymer systems, including thermosets, thermoplastics and elastomers. C30 is also useful in the manufacture of crystal, glass, refractories and in vitreous enamel, frits and glazing mixtures.

Packaging & Shipping

Bulk shipments are available via truck, railcar or barge.

Physical Properties

| | |
|--------------------------------|---|
| Reflective Index | 1.57 |
| Surface Area | 0.1 M ² /g |
| Specific Gravity | 2.42 |
| Loose Bulk Density | 60 - 76 lb/ft ³ (993 - 1218 kg/m ³) |
| Al ₂ O ₃ | 65% |
| LOI (110-1100°C) | 34.7% |

Typical Properties of C30 Bayer Hydrated Alumina

| Chemical Analysis, wt% | Typical Range ⁽¹⁾ | Sales Specifications |
|--------------------------------|------------------------------|----------------------|
| SiO ₂ | 0.005 - 0.010 | 0.015 max |
| Fe ₂ O ₃ | 0.005 - 0.010 | 0.020 max |
| Na ₂ O | 0.10 - 0.20 | 0.30 max |
| Soluble Na ₂ O | 0.010 - 0.050 | 0.30 max |
| Acid Insolubles | 0.10 - 0.90 | 1.1 max |
| Caustic Insolubles | 0.01 - 0.20 | 0.5 max |
| Moisture (110°C) | 0.02 - 0.08 | 0.10 max |

Particle Size Analysis (cumulative)

| | | |
|---------------|---------|--------|
| % on 100 mesh | 1 - 20 | 60 max |
| % on 325 mesh | 88 - 99 | 85 min |

(1) Approximately 2 Standard Deviations from Average.

The mutually agreed Sales Specifications, signed and dated below, supersede any and all prior sales specifications for this product with no exceptions whatsoever.

Alcoa World Alumina, LLC

P. O. Box 101, Point Comfort, TX 77978-0101
800-562-2640 or 800-562-2635
Fax 877-987-7260

C30 Sales Specifications listed above are accepted by:

Name _____

Title _____

Company _____

Date _____