ALUMINIUM OXIDE ACTIVE BASIC

GHS Safety Data Sheet

Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME
ALUMINIUM OXIDE

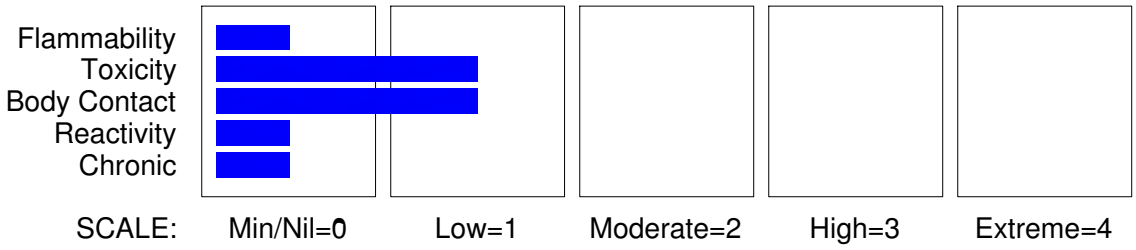
OTHER NAMES

Al2-O3, "calcined alumina", tabular, activated, alpha, a-alumina, "gamma beta alumina", "aluminium sesquioxide", "Gibbsite & Bayerite are Al2-O3.3H2O.", "Criterion Alumina Extrudate"

PRODUCT USE
Used as an adsorbent, desiccant. As a filler in paints & adhesives.
In the manufacture of alloys, ceramics, electrical insulators, resistors, dental cements, glass. As an abrasive and in metal polishes.
In the manufacture of artificial gems, in coatings for metals.
Gamma alumina - as a catalyst / catalyst support; used in chromatography.

SUPPLIER
Company:S D FINE- CHEM LIMITED
Address:
315- 317, T.V. INDUSTRIALESTATE,
248, WORLI,
MUMBAI-400030.INDIA.
technical@sdfine.com
Telephone:91- 22- 24959898
Telephone:91- 22- 24959899
Fax: 91- 22- 24937232

HAZARD RATINGS



Section 2 - HAZARDS IDENTIFICATION

GHS Classification
Eye Irritation Category 2B

EMERGENCY OVERVIEW

HAZARD
WARNING
Determined by using GHS criteria:
H320
Causes eye irritation

PRECAUTIONARY STATEMENTS

Prevention
Wash hands thoroughly after handling.

Response
If eye irritation persists, get medical advice/attention.

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IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
aluminium oxide	1344-28-1.	> 98
impurities as		
silicon (expressed as silicon dioxide)		< 0.12
iron (expressed as ferric oxide)		< 0.05^
sodium (expressed as sodium oxide)		< 0.50^
total water		< 1.0

Section 4 - FIRST AID MEASURES

SWALLOWED

- **If swallowed do NOT induce vomiting.**
- **If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.**
- **Observe the patient carefully.**
- **Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious.**
- **Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink.**
- **Seek medical advice.**

EYE

If this product comes in contact with the eyes:

- **Immediately hold eyelids apart and flush the eye continuously with running water.**
- **Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.**
- **Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes.**
- **Transport to hospital or doctor without delay.**
- **Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.**

SKIN

If skin or hair contact occurs:

- **Flush skin and hair with running water (and soap if available).**
- **Seek medical attention in event of irritation.**

INHALED

- **If dust is inhaled, remove from contaminated area.**
- **Encourage patient to blow nose to ensure clear passage of breathing.**
- **If irritation or discomfort persists seek medical attention.**

NOTES TO PHYSICIAN

· Manifestation of aluminium toxicity include hypercalcaemia, anaemia, Vitamin D refractory osteodystrophy and a progressive encephalopathy (mixed dysarthria-apraxia of speech, asterixis, tremulousness, myoclonus, dementia, focal seizures). Bone pain, pathological fractures and proximal myopathy can occur.
· Symptoms usually develop insidiously over months to years (in chronic renal failure patients) unless dietary aluminium loads are excessive.
· Serum aluminium levels above 60 ug/ml indicate increased absorption. Potential toxicity occurs above 100 ug/ml and clinical symptoms are present when levels exceed 200 ug/ml.
· Deferoxamine has been used to treat dialysis encephalopathy and osteomalacia. CaNa2EDTA is less effective in chelating aluminium.
[Ellenhorn and Barceloux: Medical Toxicology].
Copper, magnesium, aluminium, antimony, iron, manganese, nickel, zinc (and their compounds) in welding, brazing, galvanising or smelting operations all give rise to thermally produced particulates of smaller dimension than may be produced if the metals are divided mechanically. Where insufficient ventilation or respiratory protection is available these particulates may produce "metal fume fever" in workers from an acute or long term exposure.
· Onset occurs in 4-6 hours generally on the evening following exposure. Tolerance develops in workers but may be lost over the weekend. (Monday Morning Fever)
· Pulmonary function tests may indicate reduced lung volumes, small airway obstruction and decreased carbon monoxide diffusing capacity but these abnormalities resolve after several months.
· Although mildly elevated urinary levels of heavy metal may occur they do not correlate with clinical effects.
· The general approach to treatment is recognition of the disease, supportive care and prevention of exposure.
· Seriously symptomatic patients should receive chest x-rays, have arterial blood gases determined and be observed for the development of tracheobronchitis and pulmonary edema.
[Ellenhorn and Barceloux: Medical Toxicology].

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Section 5 - FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA
There is no restriction on the type of extinguisher which may be used.
· Use extinguishing media suitable for surrounding area.

FIRE FIGHTING
· Use water delivered as a fine spray to control fire and cool adjacent area.
· Do not approach containers suspected to be hot.
· Cool fire exposed containers with water spray from a protected location.
· If safe to do so, remove containers from path of fire.
· Equipment should be thoroughly decontaminated after use.
When aluminium oxide dust is dispersed in air, firefighters should wear protection against inhalation of dust particles, which can also contain hazardous substances from the fire absorbed on the alumina particles.

FIRE/EXPLOSION HAZARD
· Non combustible.
· Not considered a significant fire risk, however containers may burn.

FIRE INCOMPATIBILITY
None known.

Section 6 - ACCIDENTAL RELEASE MEASURES

EMERGENCY PROCEDURES

MINOR SPILLS
· Clean up all spills immediately.
· Avoid contact with skin and eyes.
· Wear impervious gloves and safety glasses.
· Use dry clean up procedures and avoid generating dust.
· Sweep up or
· Vacuum up (consider explosion-proof machines designed to be grounded during storage and use).
· Place spilled material in clean, dry, sealable, labelled container.

MAJOR SPILLS
Clean up all spills immediately.
Clear area of personnel.
Use dry clean up procedures and avoid generating dust.
Wear protective clothing, gloves, safety glasses and dust respirator.
Place in suitable containers for disposal.

Personal Protective Equipment advice is contained in Section 8 of the MSDS.

Section 7 - HANDLING AND STORAGE

PROCEDURE FOR HANDLING
Avoid generating and breathing dust.
· Limit all unnecessary personal contact.
· Wear protective clothing when risk of exposure occurs.
· Use in a well-ventilated area.
· When handling DO NOT eat, drink or smoke.
· Always wash hands with soap and water after handling.
· Avoid physical damage to containers.
· Use good occupational work practice.
· Observe manufacturer's storing and handling recommendations.

SUITABLE CONTAINER
Multi-ply paper bag with sealed plastic liner or heavy gauge plastic bag.
NOTE: Bags should be stacked, blocked, interlocked, and limited in height so that they are stable and secure against sliding or collapse. Check that all containers are clearly labelled and free from leaks. Packing as recommended by manufacturer.
Delivery may be in bulk by special vehicle.

STORAGE INCOMPATIBILITY
Keep dry.
Incompatible with hot chlorinated rubber. In the presence of chlorine trifluoride may react violently and ignite. May initiate explosive

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polymerisation of ethylene oxide. Produces exothermic reaction above 200 C with halocarbons and an exothermic reaction at ambient temperatures with halocarbons in the presence of other metals. Produces exothermic reaction with oxygen difluoride. May form explosive mixture with oxygen difluoride. Forms explosive mixtures with sodium nitrate.
Reacts vigorously with vinyl acetate.

STORAGE REQUIREMENTS

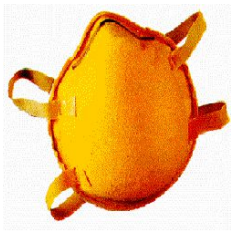
Store away from foodstuff containers.
Protect containers against physical damage.
Keep containers securely sealed.
.
Check regularly for spills and leaks.

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE CONTROLS

PERSONAL PROTECTION





RESPIRATOR
Particulate

EYE
· Safety glasses with side shields; or as required,
· Chemical goggles.
· Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lens or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59].

HANDS/FEET
Wear general protective gloves: i.e. Disposable polythene gloves or Cotton gloves or Light weight rubber gloves, with Barrier cream preferably Safety footwear.

OTHER
· Overalls.
· Eyewash unit.

ENGINEERING CONTROLS

None required when handling small quantities.
OTHERWISE:.
Use in a well-ventilated area.
General exhaust is adequate under normal operating conditions.
If exposure to workplace dust is not controlled, respiratory protection is required; wear SAA approved dust respirator.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE

A white crystalline powder; insoluble in water. No odour. Very hard.
Technical alumina is alpha form. Activated alumina is gamma form.
Insoluble in solvents. Slightly soluble in acids and alkalis.

PHYSICAL PROPERTIES
Solid.
Does not mix with water.

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Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

Sinks in water.

Molecular Weight: 101.96
Melting Range (°C): 2072
Solubility in water (g/L): Insoluble
pH (1% solution): Not applicable.
Volatile Component (%vol): Not applicable.
Relative Vapour Density (air=1): Not available
Lower Explosive Limit (%): Not applicable
Autoignition Temp (°C): Not applicable
State: Divided solid

Boiling Range (°C): 2980
Specific Gravity (water=1): 3.7
pH (as supplied): Not applicable
Vapour Pressure (kPa): Not applicable.
Evaporation Rate: Non volatile
Flash Point (°C): Not applicable
Upper Explosive Limit (%): Not applicable
Decomposition Temp (°C): Not available.
Viscosity: Not available

Section 10 - CHEMICAL STABILITY AND REACTIVITY INFORMATION

CONDITIONS CONTRIBUTING TO INSTABILITY

Product is considered stable and hazardous polymerisation will not occur.

Section 11 - TOXICOLOGICAL INFORMATION

POTENTIAL HEALTH EFFECTS

ACUTE HEALTH EFFECTS

SWALLOWED

Although ingestion is not thought to produce harmful effects (as classified under EC Directives), the material may still be damaging to the health of the individual, following ingestion, especially where pre-existing organ (e.g liver, kidney) damage is evident. Present definitions of harmful or toxic substances are generally based on doses producing mortality rather than those producing morbidity (disease, ill-health). Gastrointestinal tract discomfort may produce nausea and vomiting. In an occupational setting however, ingestion of insignificant quantities is not thought to be cause for concern.
Considered an unlikely route of entry in commercial/industrial environments.

EYE

Limited evidence exists, or practical experience suggests, that the material may cause eye irritation in a substantial number of individuals and/or is expected to produce significant ocular lesions which are present twenty-four hours or more after instillation into the eye(s) of experimental animals. Repeated or prolonged eye contact may cause inflammation characterised by temporary redness (similar to windburn) of the conjunctiva (conjunctivitis); temporary impairment of vision and/or other transient eye damage/ulceration may occur.

SKIN

The material is not thought to produce adverse health effects or skin irritation following contact (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting.

INHALED

The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting.
Persons with impaired respiratory function, airway diseases and conditions such as emphysema or chronic bronchitis, may incur further disability if excessive concentrations of particulate are inhaled.

CHRONIC HEALTH EFFECTS

Not considered to cause discomfort through normal use.
Principal routes of exposure are by accidental skin and eye contact and inhalation of generated dusts.
Long term exposure to high dust concentrations may cause changes in lung function (i.e. pneumoconiosis) caused by particles less than 0.5 micron penetrating and remaining in the lung. A prime symptom is breathlessness. Lung shadows show on X-ray.
Chronic exposure to aluminium oxides of particle size 1.2 microns did not produce significant systemic or respiratory system effects in workers.
When hydrated aluminas were injected intratracheally, produced dense and numerous nodules of advanced fibrosis in rats, a reticulin network with occasional collagen fibres in mice and guinea pigs, and only a slight reticulin network in rabbits. Shaver's disease, a rapidly progressive and often fatal interstitial fibrosis of the lungs, is associated with a process involving the fusion of bauxite (aluminium oxide) with iron, coke and silica at 2000 deg. C.

TOXICITY AND IRRITATION

No significant acute toxicological data identified in literature search.

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Section 12 - ECOLOGICAL INFORMATION

No data

Section 13 - DISPOSAL CONSIDERATIONS

- **Recycle wherever possible or consult manufacturer for recycling options.**
- **Consult State Land Waste Management Authority for disposal.**
- **Bury residue in an authorised landfill.**
- **Recycle containers if possible, or dispose of in an authorised landfill.**

Section 14 - TRANSPORTATION INFORMATION

HAZCHEM: None

NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS:UN, IATA, IMDG

Section 15 - REGULATORY INFORMATION

Section 16 - OTHER INFORMATION

The above information is believed to be accurate and represent the best information currently available to us, but does not represent any warranty expressed or implied of the properties of the product. User should make their own investigation to determine the suitability of the information for their particular purpose.

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