

SAFETY DATA SHEET

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

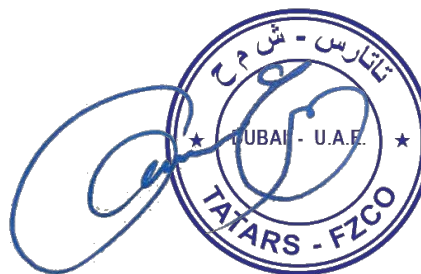
Name of the substance	Aluminium hydroxide
Trade name of the substance	HYDRATED ALUMINAS (GROUND AND UNGROUND)
Identification number	21645-51-2 (CAS number)
SDS number	REF - 4
Revision date	April 2015.
Version number	01
Synonyms	Alumina Trihydrate, Aluminum Trihydroxide ATH Series, Bayer Hydrated Alumina, C-30, KB-30, KC-30.
REACH Registration Number	Aluminum hydroxide: Alúmina Española S.A 01-2119529246-39-0023.
This product is not classified according to current European Union regulations. Therefore, a Safety Data Sheet is not required. This Safety Data Sheet is being provided for informational purposes only.	

1.2. Relevant identified uses of the substance or mixture and uses advised against

Identified uses	Industrial use, further processing into a number of articles/products, aluminium oxide production
Uses advised against	None known.

1.3. Details of the supplier of the safety data sheet

Ma'aden Aluminium
Ras Al Khair Industrial City
PO Box 11342
Jubail Industrial City
Eastern Province
31961
Kingdom of Saudi Arabia



Emergency Information CHEMTREC: +1-703-527-3887 +1-800-424-9300 (24 Hour Emergency Telephone, multiple languages spoken);

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification

This substance or mixture does not meet the criteria for classification as dangerous in accordance with Directives 67/548/EEC or 1999/45/EC and/or Regulation (EC) No 1272/2008 including all applicable amendments. Therefore, there is no legal obligation to provide this Safety Data Sheet. It is being provided for informational purposes only.

This preparation has been classified as not dangerous according to CHIP3. In addition, none of the components have been individually classified as dangerous nor have an occupational exposure limit. Therefore, a Safety Data Sheet is not required by the regulations. However, this Safety Data Sheet is being provided for informational purposes.

Classification according to Directive 67/548/EEC or 1999/45/EC as amended

This substance does not meet the criteria for classification according to Directive 67/548/EEC as amended.

Classification according to Regulation (EC) No 1272/2008 as amended

This substance does not meet the criteria for classification according to Regulation (EC) 1272/2008 as amended.

Hazard summary

Physical hazards	Not classified for physical hazards.
Health hazards	Not classified for health hazards.
Environmental hazards	Not classified for hazards to the environment.
Specific hazards	Non-combustible. Can cause mild irritation of eyes, skin and upper respiratory tract. Heating the material above 200°C will result in a sudden release of water vapor (steam).

Main symptoms Mild eye irritation. Mild skin irritation. Upper respiratory tract irritation.

2.2. Label elements

Label according to Regulation (EC) No. 1272/2008 as amended

Contains: Aluminium hydroxide
Hazard pictograms None.
Signal word None.
Hazard statements The substance does not meet the criteria for classification.

Precautionary statements

Prevention Not applicable.
Response Not applicable.
Storage Keep dry.
Disposal
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

Supplemental label information None.

2.3. Other hazards None known.

SECTION 3: Composition/information on ingredients

3.1. Substances

Composition comments Complete composition is provided below and may include some components classified as non-hazardous.

General information

Chemical name	%	CAS-No. / EC No.	REACH Registration No.	INDEX No.	Notes
Aluminium hydroxide	99,5	21645-51-2 244-492-7	01-2119529246-39-0023	-	
Classification:	DSD: -				
	CLP: -				

SECTION 4: First aid measures

General information Not available.

4.1. Description of first aid measures

Inhalation Remove to fresh air. Check for clear airway, breathing, and presence of pulse. If breathing is difficult, provide oxygen. Loosen any tight clothing on neck or chest. Provide cardiopulmonary resuscitation for persons without pulse or respirations. Consult a physician.
Skin contact Wash off with warm water and soap. Get medical attention if irritation develops or persists.
Eye contact Rinse eyes with plenty of water or saline for at least 15 minutes. Get medical attention.
Ingestion If swallowed, dilute by drinking water. Recommend quantities up to 30 mL (~1 oz.) in children and 250 mL (~9 oz.) in adults. Never give anything by mouth to a victim who is unconscious or is having convulsions. Do NOT induce vomiting. Consult a physician.

4.2. Most important symptoms and effects, both acute and delayed Mild eye irritation. Mild skin irritation. Upper respiratory tract irritation.

Medical conditions aggravated by exposure Asthma, chronic lung disease and skin rashes.

4.3. Indication of any immediate medical attention and special treatment needed If breathing is difficult, give oxygen.

SECTION 5: Firefighting measures

General fire hazards Non-combustible.

5.1. Extinguishing media

Suitable extinguishing media Use fire fighting methods and materials that are appropriate for surrounding fire.
Unsuitable extinguishing media None known.

5.2. Special hazards arising from the substance or mixture Heating the material above 200°C will result in a sudden release of water vapor (steam).

Hazardous combustion products

No hazardous decomposition products are known.

5.3. Advice for firefighters**Special protective equipment for firefighters**

Firefighters should wear CE approved, positive pressure, self-contained breathing apparatus and full protective clothing when appropriate.

Special fire fighting procedures

No specific fire fighting procedure given. Use standard firefighting procedures and consider the hazards of other involved materials.

SECTION 6: Accidental release measures**6.1. Personal precautions, protective equipment and emergency procedures****For non-emergency personnel**

Avoid generating dust. Avoid contact with skin and eyes. Ensure adequate ventilation. Use personal protection recommended in Section 8 of the SDS.

For emergency responders

Avoid generating dust. Avoid contact with skin and eyes. Ensure adequate ventilation. Use personal protection recommended in Section 8 of the SDS.

6.2. Environmental precautions

No special environmental precautions required.

6.3. Methods and material for containment and cleaning up

Return to containers using shovels, buckets or brooms. Clean up in accordance with all applicable regulations.

6.4. Reference to other sections

For personal protection, see section 8. For waste disposal, see section 13.

SECTION 7: Handling and storage**7.1. Precautions for safe handling**

Avoid generating dust. Avoid contact with skin and eyes. Use with adequate ventilation. Use personal protection recommended in Section 8 of the SDS.

7.2. Conditions for safe storage, including any incompatibilities

Keep material dry.

7.3. Specific end use(s)

Not available.

SECTION 8: Exposure controls/personal protection**8.1. Control parameters****Occupational exposure limits**

Material	Type	Value	Form
HYDRATED ALUMINAS (GROUND AND UNGROUND)	TWA	3 mg/m3	Respirable fraction
		10 mg/m3	Inhalable fraction
Components	Type	Value	Form
ALUMINIUM HYDROXIDE (CAS 21645-51-2)	TWA	3 mg/m3	Respirable fraction
		10 mg/m3	Inhalable fraction
US ACGIH Threshold Limit Values: Time Weighted Average (TWA): mg/m3, non-standard units			
Material	Type	Value	Form
HYDRATED ALUMINAS (GROUND AND UNGROUND)	TWA	1 mg/m3	Respirable fraction.
Components	Type	Value	Form
ALUMINIUM HYDROXIDE (CAS 21645-51-2)	TWA	1 mg/m3	Respirable fraction.

Derived No Effect Level (DNEL)

Aluminium hydroxide (21645-51-2) Inhalation: 3,59 mg/m3

Predicted no effect concentrations (PNECs)

Aluminum hydroxide (21645-51-2) Water: 74,9-17800 ug/L

Recommended monitoring procedures

Follow standard monitoring procedures.

8.2. Exposure controls**Appropriate engineering controls**

Use with adequate ventilation to meet the limits listed in Section 8.

Individual protection measures, such as personal protective equipment**General information**

The need for personal protective equipment should be based upon a hazard assessment and recommendations from health / safety professionals.

Eye/face protection

Wear safety glasses with side shields. Use tight fitting goggles if excessive levels of dust are generated.

Skin protection	
- Hand protection	Wear appropriate gloves to avoid any skin injury.
- Other	The need for personal protective equipment should be based upon a hazard assessment and recommendations from health / safety professionals.
Respiratory protection	In case of insufficient ventilation, wear suitable respiratory equipment. Use CE-approved respiratory protection as specified by an Industrial Hygienist or other qualified professional. Suitable respiratory protective device recommended: P2.
Thermal hazards	Not applicable.
Hygiene measures	Handle in accordance with good industrial hygiene and safety practices. Wash hands before breaks and immediately after handling the product. When using, do not eat, drink or smoke.
Environmental exposure controls	Not available.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance

Physical state	Solid.
Form	Solid, powder, crystalline.
Colour	Off-white.
Odour	Odourless
Odour threshold	Not applicable
pH	8,5 - 10,2 (20% slurry in water)
Melting point/freezing point	300 °C (572 °F) / Not determined
Initial boiling point and boiling range	Not applicable
Flash point	Not applicable
Evaporation rate	Not applicable
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not applicable
Flammability limit - upper (%)	Not applicable
Vapour pressure	Not applicable < 0 kPa at 25 °C
Vapour density	Not applicable
Relative density	Not determined
Solubility(ies)	Insoluble
Partition coefficient (n-octanol/water)	Not applicable.
Auto-ignition temperature	Not applicable
Decomposition temperature	Not available.
Viscosity	Not applicable
Explosive properties	Not applicable.
Oxidizing properties	Not available.

9.2. Other information

	None known.
Bulk density	0,15 - 1,3
Density	2,42 g/cm ³
Molecular weight	77,99 g/mol
VOC (Weight %)	0 % Not applicable

SECTION 10: Stability and reactivity

10.1. Reactivity	None known.
10.2. Chemical stability	Stable under normal conditions of use, storage, and transportation.
10.3. Possibility of hazardous reactions	Hazardous polymerisation does not occur.

10.4. Conditions to avoid	Heating the material above 200°C will result in a sudden release of water vapor (steam). Precautions must be taken to dissipate the vapor and any pressure that may be generated. A sudden increase in pressure could cause damage or explosion in enclosed equipment.
10.5. Incompatible materials	None known.
10.6. Hazardous decomposition products	No hazardous decomposition products are known.

SECTION 11: Toxicological information

General information Not available.

Health effects associated with ingredients

Aluminium hydroxide: Low health risk by inhalation. Generally considered to be biologically inert.

Health effects associated with compounds formed during processing

No new/additional compounds are expected to be formed during processing.

Information on likely routes of exposure

Ingestion	Can cause mild irritation.
Inhalation	Can cause mild irritation of the upper respiratory tract.
Skin contact	Can cause mild irritation.
Eye contact	Can cause mild irritation.

Symptoms Mild eye irritation. Mild skin irritation. Upper respiratory tract irritation.

11.1. Information on toxicological effects

Acute toxicity Not classified. Based on available data, the classification criteria are not met.

Product	Species	Test results
HYDRATED ALUMINAS (GROUND AND UNGROUND)		
Acute		
Oral		
LD50	Rat	> 5000 mg/kg
Other		
LD50	Rat	1100 mg/kg
Components	Species	Test results
Aluminium hydroxide (CAS 21645-51-2)		
Acute		
Other		
LD50	Rat	1100 mg/kg
Skin corrosion/irritation	Not classified. Non-corrosive.	
Serious eye damage/eye irritation	Not classified. May cause minor irritation on eye contact.	
Respiratory sensitisation	Not classified. Based on available data, the classification criteria are not met.	
Routes of exposure	Eye contact. Inhalation. Ingestion. Skin contact.	
Skin sensitisation	Not classified. May cause minor irritation on skin contact.	
Germ cell mutagenicity	Not classified. Contains no ingredient listed as a mutagen.	
Carcinogenicity	Not classified. Contains no ingredient listed as a carcinogen	
ACGIH Carcinogens		
Aluminium hydroxide (CAS 21645-51-2)	A4 Not classifiable as a human carcinogen.	
Reproductive toxicity	Not classified. Contains no ingredient listed as toxic to reproduction.	
Specific target organ toxicity - single exposure	Not classified. Based on available data, the classification criteria are not met.	
Specific target organ toxicity - repeated exposure	Not classified. Based on available data, the classification criteria are not met.	
Symptoms	Mild skin irritation Mild eye irritation Upper respiratory tract irritation.	
Teratogenicity	Not classified. Based on available data, the classification criteria are not met.	
Aspiration hazard	Not applicable.	
Mixture versus substance information	Not applicable.	
Other information	None known.	

SECTION 12: Ecological information

12.1. Toxicity	This material is not expected to be harmful to aquatic life.
12.2. Persistence and degradability	The product contains inorganic compounds which are not biodegradable.
12.3. Bioaccumulative potential	The product is not bioaccumulating.
Partition coefficient n-octanol/water (log Kow)	Not applicable.
Bioconcentration factor (BCF)	Not available.
12.4. Mobility in soil	Not considered mobile.
Mobility in general	Not applicable.
12.5. Results of PBT and vPvB assessment	Not applicable. Not applicable. Not applicable.
12.6. Other adverse effects	None known.
12.7. Additional information	None known.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal methods/information	Reuse or recycle material whenever possible. If reuse or recycling is not possible, disposal must be made according to local or governmental regulations.
EU waste code	Waste codes should be assigned by the user based on the application for which the product was used. The Waste code should be assigned in discussion between the user, the producer and the waste disposal company. The following Waste Codes are only suggestions: 100322 - other particulates and dust (including ball-mill dust) other than those mentioned in 10 03 21 160304 - inorganic wastes other than those mentioned in 160303
Residual waste	Dispose of in accordance with local regulations.
Contaminated packaging	Dispose of in accordance with local regulations.

SECTION 14: Transport information

General Shipping Information

Basic shipping requirements:

UN number	-
Proper shipping name	Not regulated
Hazard class	-
Packing group	-

General Shipping Notes

- When "Not regulated", enter the proper freight classification, SDS Number and Product Name onto the shipping paperwork.

IMSBC

Basic shipping requirements:

UN number	-
Proper shipping name	Alumina Hydrate
Hazard class	-
Packing group	-

IMSBC Notes

- Classification applies to international vessel transport of Alumina Hydrate as bulk cargo (may not apply to domestic only shipments-check local regulations). The Bulk Cargo Shipping Name (BCSN) is provided above.
- Per the IMSBC code, Alumina Hydrate for bulk transport by vessel is classed as a MHB in Group A and B. Hazards indicated by the IMSBC code: This cargo may liquefy if shipped at moisture content in excess of its Transportable Moisture Limit (TML). Alumina Hydrate dust is very abrasive and penetrating. Irritating to eyes, skin and mucous membranes. This cargo is non-combustible or has low fire risks.
- Alumina Hydrate is NOT classified as Harmful to the Marine Environment (HME).

Disclaimer

This section provides basic classification information and, where relevant, information with respect to specific modal regulations, environmental hazards and special precautions. Otherwise, it is presumed that the information is not available/not relevant

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

EU regulations

Not applicable.

Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex I

Not listed.

Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex II

Not listed.

Regulation (EC) No. 850/2004 on persistent organic pollutants, Annex I

Not listed.

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 1

Not listed.

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 2

Not listed.

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 3

Not listed.

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex V

Not listed.

Regulation (EC) No. 166/2006 Annex II Pollutant Release and Transfer Registry

Not listed.

Regulation (EC) No. 1907/2006, REACH Article 59(1) Candidate List as currently published by ECHA

Not listed.

Authorisations

Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorization, as amended

Not listed.

Restrictions on use

Regulation (EC) No. 1907/2006 Annex XVII Substances subject to restriction on marketing and use

Not regulated.

Directive 2004/37/EC: on the protection of workers from the risks related to exposure to carcinogens and mutagens at work

Not listed.

Directive 92/85/EEC: on the safety and health of pregnant workers and workers who have recently given birth or are breastfeeding

Not listed.

Other EU regulations

Directive 96/82/EC (Seveso II) on the control of major-accident hazards involving dangerous substances

Not listed.

Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work

Not listed.

Directive 94/33/EC on the protection of young people at work

Not listed.

Other regulations

This Safety Data Sheet complies with the requirements of Regulation (EC) No 1907/2006. The product does not need to be labelled in accordance with EC directives or respective national laws.

National regulations

Not available.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes

Country(s) or region	Inventory name	On inventory (yes/no)*
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

15.2. Chemical safety assessment No Chemical Safety Assessment has been carried out.

SECTION 16: Other information

SDS Status April 2015

Revision date April 2015.

Disclaimer The information in the sheet was written based on the best knowledge and experience currently available.

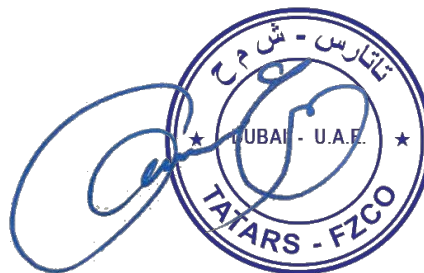
Other information

- Guide to Occupational Exposure Values 2014, Compiled by the American Conference of Governmental Industrial Hygienists (ACGIH).
- NIOSH Pocket Guide to Chemical Hazards, U.S. Department of Health and Human Services, September 2005.
- TOXNET, U.S. National Library of Medicine
- expub, Expert Publishing, LLC., www.expub.com,
- Ariel, 3E Company, www.3Ecompany.com

Key/Legend:

ACGIH	American Conference of Governmental Industrial Hygienists
AICS	Australian Inventory of Chemical Substances
CAS	Chemical Abstract Services
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CPR	Cardio-pulmonary Resuscitation
DOT	Department of Transportation
DSL	Domestic Substances List (Canada)
EC	Effective Concentration
ED	Effective Dose
EINECS	European Inventory of Existing Commercial Chemical Substances
ENCS	Japan - Existing and New Chemical Substances
EWC	European Waste Catalogue
EPA	Environmental Protective Agency
IARC	International Agency for Research on Cancer
LC	Lethal Concentration
LD	Lethal Dose
MAK	Maximum Workplace Concentration (Germany) "maximale Arbeitsplatz-Konzentration"
NDSL	Non-Domestic Substances List (Canada)
NIOSH	National Institute for Occupational Safety and Health
NTP	National Toxicology Program
OEL	Occupational Exposure Limit
OSHA	Occupational Safety and Health Administration
PIN	Product Identification Number
PMCC	Pensky Marten Closed Cup
RCRA	Resource Conservation and Recovery Act
SARA	Superfund Amendments and Reauthorization Act
SIMDUT	Système d'Information sur les Matières Dangereuses Utilisées au Travail
STEL	Short Term Exposure Limit
TCLP	Toxic Chemicals Leachate Program
TDG	Transportation of Dangerous Goods
TLV	Threshold Limit Value
TSCA	Toxic Substances Control Act
TWA	Time Weighted Average
WHMIS	Workplace Hazardous Materials Information System
m	metre, cm centimetre, mm millimetre, in inch,
g	gram, kg kilogram, lb pound, µg microgram,
ppm	parts per million, ft feet

*** End of SDS ***



HYDRATED ALUMINAS (GROUND AND UNGROUND)

Components: Aluminium hydroxide - 99.5%

None.

Precautionary statements

Prevention: Not applicable.

Response: Not applicable.

Storage: Keep dry.

Disposal: P501 - Dispose of contents/container in accordance with local/regional/national/international regulations.

Supplemental Information

Non-combustible. Heating the material above 200°C will result in a sudden release of water vapor (steam). Can cause mild irritation of the eyes, skin and upper respiratory tract.

Avoid contact with skin and eyes. Avoid dust formation. Keep material dry.

FIRE FIGHTING MEASURES: Use fire fighting methods and materials that are appropriate for surrounding fire.

IN CASE OF SPILL: Return to containers using shovels, buckets or brooms.