



Safety Data Sheet

FIRE RETARDANT ADDITIVES

Singapore Standard SS 586:2008
Globally Harmonized System (GHS)

Issue Date: 28/May/2020

Print Date: 28/May/2020

Revision Number: 1.3

SECTION 1: Product and company identification

Product Name: Hydral® 710, Hydral® PGA-SD, SpaceRite® S-3 and SpaceRite® S-11

Pure substance/mixture Substance

Aluminum Hydroxide

CAS NUMBER: 21645-51-2
SS 586:2008: Not classified
Weight-% 100

Product use Flame retardant

Company: J.M. Huber Corporation
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SECTION 2: Hazards identification

Classification EC 1272/2008: Not Classified
EC 1999/45: Not Classified

GHS Classification This product is not classified as hazardous according to the UN GHS guideline and labeling is not required

Hazards identification

Physical Hazard Not classified.

Health Hazards Not classified

Environmental Hazard Not classified.

2.2. Label elements

Symbols/Pictograms None

Signal Word None

Precautionary Statements

Prevention Employ good industrial hygiene practice
Do not handle until all safety precautions have been read and understood
Do not breathe dust
Wear protective gloves/protective clothing/eye protection/face protection

Response IF ON SKIN: Wash with plenty of soap and water

Storage Store away from incompatible materials.

Disposal Dispose of contents/containers in accordance with local regulations.

Additional Information: None.

2.3. Other hazards No information available.

SECTION 3: Composition/information on ingredients

Pure substance/mixture Substance

Chemical Name	CAS Number	TSCA: United States	REACH registration number	SS 586:2008:	Weight-%
Aluminum Hydroxide	21645-51-2	A	01-2119529246-39-00 16	Not classified	100

SECTION 4: First aid measures

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4.1. Description of first aid measures

General Advice	When in doubt or if symptoms are observed, get medical advice. Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.
Eye Contact	In case of eye contact, remove contact lens and rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
Skin Contact	Wash with plenty of soap and water.
Inhalation	If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.
Ingestion	Rinse mouth thoroughly with water.
Aspiration hazard	Not an expected route of exposure.
Notes to Physician	Treat symptomatically.

4.2. Most important symptoms and effects, both acute and delayed Signs and symptoms may include coughing, gasping, choking and difficulty breathing.

4.3. Indication of any immediate medical attention and special treatment needed Treatment should be symptomatic and supportive.

SECTION 5: Firefighting measures

5.1. Extinguishing media**Suitable Extinguishing Media**Water spray (fog). Foam. Dry chemical. Carbon dioxide (CO₂).**Unsuitable Extinguishing Media**

None known.

5.2. Special hazards arising from the substance or mixture

None known.

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

Wear a self-contained breathing apparatus and chemical protective clothing.

Fire-fighting measures

In case of fire and/or explosion do not breathe fumes.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation. Use personal protection recommended in Section 8. Avoid dust formation. Keep unauthorized personnel away.

For non-emergency personnel Keep unauthorized personnel away.

For emergency responders Keep unauthorized personnel away. Use personal protection recommended in Section 8.

6.2. Environmental precautions Avoid runoff to waterways and sewers.

6.3. Methods and material for containment and cleaning up Large Spill: Do not dry sweep dust. Wet dust with water before sweeping or use a vacuum to collect dust Small Spill: Vacuum or sweep material and place in a disposal container

6.4. Reference to other sections Section 8: Exposure controls and personal protection. See Section 13 for additional waste treatment information.

SECTION 7: Handling and storage

Handling: Avoid dust formation. Provide appropriate exhaust ventilation in places where dust is formed. In case of insufficient ventilation, wear suitable respiratory equipment.

Storage: Store in a dry area. Keep containers closed and protect from physical damage.

Other precautions: Refer to Section 10 for conditions to avoid.

SECTION 8. Exposure controls/personal precautions

Engineering Controls:	Use mechanical ventilation (dilution and local exhaust) to control exposure
Exposure Limit Values <u>Aluminum Hydroxide</u> ACGIH	TLV/TWA 8-hr: 1 mg/m ³ (respirable fraction)
Engineering Measures	Ensure adequate ventilation, especially in confined areas Provide a good standard of controlled ventilation (10 to 15 air changes per hour)
<u>Personal Protective Equipment</u>	
Eye Protection	Wear safety glasses with side shields (or goggles)
Skin and Body Protection	Use suitable protective clothing, gloves and footwear, selected with regard for use conditions and exposure.
Hand Protection	Impervious gloves: chemical resistant EN 420
Respiratory Protection:	In case of exposure to high levels of airborne dust, wear a respirator EN 149, P2 half masks.
Hygiene Measures	Handle in accordance with good industrial hygiene and safety practice Handle in accordance with good industrial hygiene and safety practice
Environmental Exposure	This product does not present any particular risk for the environment. Check the appropriate national and local regulations. Prevent entry into sewers and waterways.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance:

Physical State	Solid Powder
Odor	Odorless
Odor Threshold	No information available
pH:	8.4 - 10.2 5% Water suspension
Melting point / Freezing point	ca 300 °C / 572 °F (101.3 kPa)
Initial boiling point	5396 °F (2980 °C) 101.3 kPa
Flash Point:	Not applicable.
Evaporation Rate	Not applicable.
Flammability (solid, gas)	Not applicable
Upper flammability limit:	
Lower flammability limit:	
Vapor Pressure	Not applicable
Vapor Density	Not applicable
Relative Density	2.4 g/cm ³ , 20° C

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Water Solubility	Insoluble
Solubility in other solvents	No information available
Partition coefficient	No information available
Autoignition Temperature	Not applicable
Decomposition Temperature	392 °F (200 °C)
Viscosity	Not applicable.
Explosive Properties	None
Oxidizing Properties	Not applicable
VOC Content (%)	Not applicable

SECTION 10: Stability and reactivity

10.1. Reactivity	None
10.2. Chemical stability	Stable under normal conditions
10.3. Possibility of hazardous reactions	None under normal processing
10.4. Conditions to avoid	Incompatible materials
10.5. Incompatible materials	Strong acids
10.6. Hazardous decomposition products	None known

SECTION 11: Toxicological information

General Information	Users are advised to consider national Occupational Exposure Limits or other equivalent values.
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Information on Likely Routes of Exposure

Inhalation	Do not breathe dust Inhalation of dust in high concentration may cause irritation of respiratory system
Skin	Contact with dust can cause mechanical irritation or drying of the skin
Eyes	Dust contact with the eyes can lead to mechanical irritation
Ingestion	Ingestion is not a likely route of exposure
Aspiration hazard	Not an expected route of exposure.

11.1. Information on toxicological effects

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Oral LD50	> 2000 mg/kg Rat
Inhalation LC50	Rat > 2.3 mg/l (Al2O3) Aerosol Maximum attainable concentration
IARC	Not Listed

Acute Toxicity	Based on available data, the classification criteria are not met
Chronic Toxicity	Based on available data, the classification criteria are not met.
Chronic Effects	Based on available data, the classification criteria are not met.
Respiratory Sensitization	No information available
Serious eye damage/eye irritation	Non-irritant Rabbit
Skin Corrosion/Irritation	Non-irritant Rabbit
Skin Sensitization	Based on available data, the classification criteria are not met Not a skin sensitizer Guinea pig
Mutagenicity	in vitro Not genotoxic in bacteria and mammalian cell systems. in vivo Mutagenicity (micronucleus test) Rat Negative (weight of evidence approach)
Germ cell mutagenicity	No information available.
Reproductive Effects	Based on available data, the classification criteria are not met.
Reproductive Toxicity	Based on available data, the classification criteria are not met.
Carcinogenicity	Based on available data, the classification criteria are not met.
Specific target organ toxicity - Single exposure	Not classified.
Specific target organ toxicity - Repeated exposure	No information available.
Mixture versus substance information	No information available

SECTION 12: Ecological information

12.1. Ecotoxicity Not considered to be harmful to aquatic life.

Aluminum Hydroxide
WGK Classification (AwSV) 5220 WGK: nwg

12.2. Persistence and The methods for determining biodegradability are not applicable to inorganic

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degradability substances.

12.3. Bioaccumulative potential Not likely to bioaccumulate.

Partition coefficient No information available

Bioconcentration factor
(BCF) Not available.

12.4. Mobility in soil No information available.

12.5. Results of PBT and vPvB assessment This substance does not meet the criteria for classification as PBT or vPvB.

12.6. Other adverse effects No information available

SECTION 13. Disposal considerations

13.1. Waste treatment methods

Contaminated Packaging Empty containers should be taken to an approved waste handling site for recycling or disposal.

Waste codes Waste codes should be assigned by the user based on the application for which the product was used

Disposal Methods Disposal should be in accordance with applicable regional, national and local laws and regulations.

Aluminum Hydroxide - 21645-51-2

European Waste Catalog 060299

SECTION 14: Transport information

Mode of Transportation (Road, Water, Air, Rail)

TDG -Canada	Not regulated
DOT	Not regulated
ADR	Not regulated
RID	Not regulated
ADN	Not regulated
IATA	Not regulated
IMDG/IMO	Not regulated
ICAO	Not regulated

HUBER

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14.1. UN number None

14.2. UN proper shipping name None

14.3. Transport hazard class(es) None

14.4. Packing group None

14.5. Environmental hazards No

14.6. Special precautions for user Not applicable

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not applicable

SECTION 15: Regulatory information

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

Global Inventories

Pure substance/mixture Substance

Chemical Name	CAS Number	EC No	REACH registration number	Australia (AICS)	Canada (DSL)	China (IECSC)	Japan	S. Korea (KECL)	Mexico	New Zealand	Philippines (PICCS)	Taiwan	TSCA: United States
Aluminum Hydroxide	21645-51-2	244-492-7	01-211952 9246-39-0 016	Y	Y	Y	(1)-17 (ENCS); ISHL	KE-00980	Y	Y	Y	Y	A

Legend X / Y: Complies ; A: Active ; - / N: Exempt / Not Listed

Germany

Not considered to be harmful to aquatic life

Aluminum Hydroxide

WGK Classification (AwSV) 5220 WGK: nwg

15.2. Chemical safety assessment

A Chemical Safety Assessment has been carried out for this substance

SECTION 16: Other information

Prepared by	Huber Engineered Materials Global Regulatory Affairs email: regulatory.affairs@huber.com
Training Advice	Do not handle until all safety precautions have been read and understood.
Abbreviations and acronyms	International Agency for Research on Cancer (IARC) International Air Transport Association (IATA) International Maritime Dangerous Goods (IMDG) International Uniform Chemical Information Database (IUCLID) Workplace Hazardous Materials Information System (WHMIS) status and classification EPA SARA Title III Section 312 (40 CFR 370) Hazard Classification DOT (Department of Transportation) OSHA (Occupational Safety and Health Administration of the US Department of Labor) TWA - Time-Weighted Average Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA) The Classification, Labeling and Packaging of Substances and Mixtures (CLP) Regulation (EC 1272/2008) PPE - Personal Protection Equipment NIOSH - National Institute for Occupational Safety and Health TDG (Transport of Dangerous Goods) Canada CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act) Reportable Quantity (RQ) (RQ/% in mixture) STEL - Short Term Exposure Limit TLV® - Threshold Limit Value Derived No Effect Level (DNEL) SVHC: Substances of Very High Concern for Authorization: Land transport (ADR/RID) Biochemical oxygen demand (BOD) Chemical oxygen demand (COD) ICAO (air) (IMDG) International Maritime Dangerous Goods Positive Pressure Self-Contained Breathing Apparatus (SCBA) Predicted No Effect Concentration (PNEC) Globally Harmonized System (GHS)
Disclaimer	The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of Safety Data Sheet