



Safety Data Sheet

FIRE RETARDANT ADDITIVES

Malaysia CLASS Regulation, 2013
Globally Harmonized System (GHS)

Issue Date: 17/Dec/2019
Print Date: 20/May/2020

Revision Number: 1.2

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Product Name: Martoxid® MZS; Martoxid® MZS-1; Martoxid® MZS-3; Martoxid® MZS-12

Pure substance/mixture Substance

Aluminium oxide

CAS Number 1344-28-1

Weight-% >99

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

Recommended Use Abrasive , Adsorbent(s) , Catalyst , Ceramic , Chemical industry (raw material for the production of other aluminium compounds), etc.

1.3. Details of the supplier of the safety data sheet

Company: MARTINSWERK GmbH
Kölner Strasse 110
50127 Bergheim
Germany
Tel. : +49-2271-90.22.78
Fax. : +49-2271-90.27.17

Internet www.hubermaterials.com

E-mail hubermaterials@huber.com

1.4. Emergency telephone number CHEMTREC: +1 800 424 9300 or International +1 703 527 3887

2. HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

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

Issue Date: 17/Dec/2019

Print Date: 20/May/2020

Revision Number: 1.3

Page 2 of 10

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
Wash thoroughly after handling
Wear protective gloves/protective clothing/eye protection/face protection
Do not breathe dust

Response

IF ON SKIN: Wash with plenty of soap and water
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing
If swallowed, rinse mouth with water (only if the person is conscious)
Drink plenty of 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.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Pure substance/mixture Substance

Chemical Name	CAS Number	TSCA: United States	REACH registration number	Weight-%
Aluminium oxide	1344-28-1	A	01-2119529248-35-xxxx 01-2119529248-35-0017	>99

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

4. FIRST AID MEASURES

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

Issue Date: 17/Dec/2019

Print Date: 20/May/2020

Revision Number: 1.3

Page 3 of 10

	water, also under the eyelids, for at least 15 minutes.
Skin Contact	Wash with plenty of soap and water.
Ingestion	Rinse mouth thoroughly with water.
Inhalation	If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.
Aspiration hazard	Not an expected route of exposure.
Notes to Physician	Treat symptomatically.
4.2. Most important symptoms and effects, both acute and delayed	Inhalation of dust may cause irritation of the respiratory system. Eye irritation.
4.3. Indication of any immediate medical attention and special treatment needed	Treatment should be symptomatic and supportive.

5. FIRE-FIGHTING 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.

6. ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions,

Ensure adequate ventilation. Use personal protection recommended in Section 8.

Issue Date: 17/Dec/2019

Print Date: 20/May/2020

Revision Number: 1.3

Page 4 of 10

protective equipment and emergency procedures

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 upMethods for Containment : Prevent further leakage or spillage if safe to do so
Methods for Clean-up : Sweep up and shovel into suitable containers for disposal**6.4. Reference to other sections**

Section 8: Exposure controls and personal protection. See Section 13 for additional waste treatment information.

7. HANDLING AND STORAGE

7.1. Precautions for safe handlingMinimize dust generation and accumulation. Provide local exhaust ventilation.
Handle in accordance with good industrial hygiene and safety practice.**7.2. Conditions for safe storage, including any incompatibilities**

Store away from incompatible materials. Keep container tightly closed and dry.

7.3. Specific end use(s)

No information available.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters**Occupational exposure limits****Aluminium oxide**

Malaysia

TWA: 10 mg/m³

NIOSH

Not established

ACGIH

TWA: 10 mg/m³

OSHA

TWA: 15 mg/m³ total dustTWA: 5 mg/m³ respirable fraction(vacated) TWA: 10 mg/m³ total dust(vacated) TWA: 5 mg/m³ respirable fraction**Biological Limit Values:**

None

Recommended monitoring procedures

Refer also to national guidance documents for information on currently recommended monitoring procedures

8.2. Exposure controls**Engineering Measures**Do not handle until all safety precautions have been read and understood
Ensure adequate ventilation, especially in confined areas
Provide a good standard of controlled ventilation (10 to 15 air changes per hour)
Use exhaust ventilation to keep airborne concentrations below exposure limits
In case of insufficient ventilation, wear suitable respiratory equipment

Issue Date: 17/Dec/2019

Print Date: 20/May/2020

Revision Number: 1.3

Page 5 of 10

Personal protective equipment

Eye/Face Protection	Wear safety glasses with side shields (or goggles)
Skin and Body Protection	Wear suitable protective clothing.
Hand Protection	Wear suitable gloves.
Respiratory Protection	In case of inadequate ventilation wear respiratory protection.

Thermal hazards None known.

Hygiene Measures Follow general hygiene considerations recognized as common good workplace practices. The worker should wash daily at the end of each work shift, and prior to eating, drinking, smoking, etc.

Environmental Exposure Controls Dispose of in accordance with local regulations.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Appearance:

Physical State	Solid Powder
Color	White
Odor	Odorless
Odor Threshold	No information available
pH:	Not available
Melting point / Freezing point	2000 °C (3632 °F) (1013 hPa)
Initial boiling point and boiling range	2980 °C (5396 °F) (1013 hPa)
Flash Point:	Not applicable. Product/Substance is inorganic. Solid.
Evaporation Rate	Not applicable. Melting Point : > 300°C
Flammability (solid, gas)	No information available
Upper flammability limit:	
Lower flammability limit:	
Vapor Pressure	1 hPa (2158 °C)
Vapor Density	Not applicable Melting Point : > 300°C
Relative Density	4 g/cm ³ (20°C)
Water Solubility	Insoluble
Solubility in other solvents	No information available
Partition coefficient	Not applicable Product/Substance is inorganic
Autoignition Temperature	Aluminum oxide has no potential to explode.
Decomposition Temperature	~2000 °C (> 2050 °C)
Kinematic viscosity	Not applicable Solid
Dynamic viscosity	Not applicable Solid
Explosive Properties	None
Oxidizing Properties	None

10. STABILITY AND REACTIVITY

10.1. Reactivity	No data available
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 Decomposition Temperature ~ 2000 °C (> 2050°C) < / =0.3% : Al ₂ O ₃ , Water
10.5. Incompatible materials	Strong acids
10.6. Hazardous decomposition products	None known

11. TOXICOLOGICAL INFORMATION

General Information	Users are advised to consider national Occupational Exposure Limits or other equivalent values.
---------------------	---

Information on Likely Routes of Exposure

Inhalation	Do not breathe dust
Skin	Avoid prolonged or repeated contact with skin Contact with dust can cause mechanical irritation or drying of the skin
Eyes	Avoid contact with 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

Aluminium oxide

Serious eye damage/eye irritation	Non-irritant : Rabbit
Skin Corrosion/Irritation	Non-irritant : Rabbit
Mutagenicity	in vitro in vivo Based on available data, the classification criteria are not met
Reproductive Effects	No indication of effects on fertility. No indication of effects on developmental toxicity.
Target Organ Effects	Lungs
Specific target organ toxicity - Single exposure	No information available

Issue Date: 17/Dec/2019

Print Date: 20/May/2020

Revision Number: 1.3

Page 7 of 10

Specific target organ toxicity - Repeated exposure	Repeated dose toxicity Inhalation 28-d Rat NOAEL (No observed adverse effect level) 70 mg(Al)/m ³ Repeated dose toxicity 1- Year Rat NOAEL (No observed adverse effect level) ≥ 30 mg Al/kg bw
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	Based on available data, the classification criteria are not met
Serious eye damage/eye irritation	Based on available data, the classification criteria are not met
Skin Corrosion/Irritation	Based on available data, the classification criteria are not met
Skin Sensitization	Based on available data, the classification criteria are not met
Mutagenicity	Based on available data, the classification criteria are not met
Reproductive Effects	This product does not contain any known or suspected reproductive hazards.
Reproductive Toxicity	Based on available data, the classification criteria are not met.
Carcinogenicity	This product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC or NTP.
Specific target organ toxicity - Single exposure	Based on available data, the classification criteria are not met.
Specific target organ toxicity - Repeated exposure	Based on available data, the classification criteria are not met.

12. ECOLOGICAL INFORMATION

12.1. Ecotoxicity Very low solubility. Not considered to be harmful to aquatic life.

Aluminium oxide

WGK Classification (AwSV) 1346. WGK: nwg

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

12.3. Bioaccumulative potential Not likely to bioaccumulate.

Bioconcentration factor (BCF) No data available.

Issue Date: 17/Dec/2019

Print Date: 20/May/2020

Revision Number: 1.3

Page 8 of 10

12.4. Mobility in soil None.

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 None known

13. DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

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

Contaminated Packaging Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not reuse container.

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

Aluminium oxide

WGK Classification (AwSV) 1346. WGK: nwg

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

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

Issue Date: 17/Dec/2019

Print Date: 20/May/2020

Revision Number: 1.3

Page 9 of 10

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

15. REGULATORY INFORMATION

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

Global Inventories

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
Aluminium oxide	1344-28-1	215-691-6	01-211952924-8-35-xxxx 01-211952924-8-35-0017	Y	Y	Y	(1)-23 (ENCS)(IS HL)	KE-01012	Y	Y	Y	Y	A

Legend

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

16. OTHER INFORMATION

Prepared by Huber Engineered Materials Global Regulatory Affairs
email: regulatory.affairs@huber.com.

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

Physical Hazard Not classified

Health Hazards Not classified

Environmental Hazard Not classified

Labeling

Symbols/Pictograms None

Signal Word None

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

HUBER

Safety Data Sheet

Martoxid® MZS; Martoxid® MZS-1; Martoxid® MZS-3; Martoxid® MZS-12

Issue Date: 17/Dec/2019

Print Date: 20/May/2020

Revision Number: 1.3

Page 10 of 10

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