



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

This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006
COMMISSION REGULATION (EU) No. 2020/878

Issue Date 17/Jul/2024
Print Date 17/Jul/2024

Revision Number 1.3.1
Page 1 of 12

SECTION 1: Identification of the substance/mixture 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

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.
Industrial use --
Professional use --
Consumer use --
Uses advised against None known.

1.3. Details of the supplier of the safety data sheet

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

Internet www.huberadvancedmaterials.com

Contact E-Mail www.huberadvancedmaterials.com/contact

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

Poison control center phone number National Anti-Poison Center UK: +44 844 892 0111 (National Poisons Information Service)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Safety Data Sheet

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

Issue Date 17/Jul/2024

Print Date 17/Jul/2024

Revision Number 1.3.1

Page 2 of 12

(CLP) Regulation (EC 1272/2008) Not classified.

Hazards identification

Physical Hazard Not classified.

Health Hazards Not classified.

Environmental Hazard Not classified.

2.2. Label elements

Symbols/Pictograms None

Signal Word None

Hazard Statements This product is not classified as hazardous according to the UN GHS guideline and labeling is not required
This material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Precautionary Statements

Prevention Employ good industrial hygiene practice
Wash hands thoroughly after handling

Response IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
IF ON SKIN: Wash with plenty of soap and water
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 Keep in a dry place
Store away from incompatible materials

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

Additional Information: None.

2.3. Other hazards No information available.

SECTION 3: Composition/information on ingredients

3.1. Substance

Substance

Chemical Name	CAS Number	EC No	(CLP) Regulation (EC 1272/2008)	Weight-%
Aluminum oxide	1344-28-1	215-691-6	Not classified.	>99

Safety Data Sheet

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

Issue Date 17/Jul/2024

Print Date 17/Jul/2024

Revision Number 1.3.1

Page 3 of 12

SECTION 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 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

Dust contact with the eyes can lead to mechanical irritation. Contact with dust can cause mechanical irritation or drying of the skin.

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

Safety Data Sheet

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

Issue Date 17/Jul/2024

Print Date 17/Jul/2024

Revision Number 1.3.1

Page 4 of 12

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 Methods 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.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Minimize 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.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits

Aluminum oxide

ACGIH
OSHA

TWA: 10 mg/m³
TWA: 15 mg/m³ total dust
TWA: 5 mg/m³ respirable fraction
(vacated) TWA: 10 mg/m³ total dust

Safety Data Sheet

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

Issue Date 17/Jul/2024

Print Date 17/Jul/2024

Revision Number 1.3.1

Page 5 of 12

	(vacated) TWA: 5 mg/m ³ respirable fraction Not established
NIOSH	
Austria	TWA: 5 mg/m ³ respirable fraction, smoke
Austria	STEL: 10 mg/m ³ respirable fraction, smoke
Belgium	TWA: 1 mg/m ³
Bulgaria	TWA: 1.5MGM3;Respirable fraction. 10.0MGM3;Dust.
Croatia	TWA: 10 mg/m ³ total dust 4 mg/m ³ respirable dust
Czech Republic	TWA: 10.0 mg/m ³ dust
Denmark	TWA: 5 mg/m ³ total 2 mg/m ³ respirable
Estonia	TWA: 10 mg/m ³ total dust 4 mg/m ³ respirable dust
Finland	TWA: 2 mg/m ³ Al
France	VME/VLE: 10MGM3
Germany	DFG MAK: 8-hr TWA: 4 mg/m ³ : haltige Stäube (alveolengängige Fraktion)[4 mg/m ³ : inhalable dust fraction] 1.5 mg/m ³ haltige Stäube (einatembare Fraktion)[1.5MGM3 : respirable dust fraction] TRGS 900 limit : 3 mg/m ³ : respirable; 10MG/M3 inhalable
Greece	TWA: 10 mg/m ³ inhalable fraction 5 mg/m ³ respirable fraction
Hungary	TWA: 6 mg/m ³ respirable dust
Ireland	TWA: 10 mg/m ³ total inhalable dust 4 mg/m ³ respirable dust
Ireland	30 mg/m ³ total inhalable dust 12 mg/m ³ respirable dust
Italy	TWA: 1MGM3;Respirable.
Latvia	TWA: 6 mg/m ³ disintegration aerosol
Lithuania	TWA: 5 mg/m ³ Al inhalable fraction 2 mg/m ³ Al respirable fraction
Netherlands	MAC TWA: 10 mg/m ³
Norway	TWA: 10 mg/m ³
Norway	STEL: 10 mg/m ³
Poland	TWA: 2.5 mg/m ³ inhalable fraction 1.2 mg/m ³ respirable fraction
Portugal	TWA: 10 mg/m ³ particulate matter containing no Asbestos and <1% Crystalline silica
Romania	TWA: 2 mg/m ³ aerosol 3 mg/m ³ 1 mg/m ³
Romania	STEL: 5 mg/m ³ aerosol 10 mg/m ³ dust 3 mg/m ³ fume
Slovakia	TWA: 1.5 mg/m ³ fume 1.5 mg/m ³ 0.1 mg/m ³ respirable fraction 6 mg/m ³ total aerosol
Spain	TWA: 10 mg/m ³
Sweden	TWA: 5 mg/m ³ total dust 2 mg/m ³ respirable dust
Switzerland	TWA: 3 mg/m ³ respirable dust, smoke
Switzerland	STEL: 24 mg/m ³ respirable dust, smoke
United Kingdom	TWA: 10 mg/m ³ inhalable dust 4 mg/m ³ respirable dust

Recommended monitoring procedures

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

Safety Data Sheet

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

Issue Date 17/Jul/2024

Print Date 17/Jul/2024

Revision Number 1.3.1

Page 6 of 12

Biological Limit Values None

DNEL (Derived No Effect Level)

Aluminum oxide

Worker - inhalative, long-term - systemic	3 mg/m ³
Consumer - oral, long-term - systemic	1.32 mg/kg bw/d

PNEC (Predicted No Effect Concentration) No information available

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

Personal protective equipment

Eye/Face Protection

Wear safety glasses with side shields (or goggles).

Skin and Body Protection

Wear suitable protective clothing.

Hand protection

For operations where prolonged or repeated skin contact may occur, impervious gloves should be worn. Wear suitable gloves tested to EN 374.

When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

Recommended filter type:

(FFP2)

(FFP3)

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

SECTION 9: Physical and chemical properties

Safety Data Sheet

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

Issue Date 17/Jul/2024

Print Date 17/Jul/2024

Revision Number 1.3.1

Page 7 of 12

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)
Freezing Point	Not applicable
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
Density	No data available
Relative Density	4 g/cm ³ (20°C)
Water Solubility	Insoluble
Solubility in other solvents	No information available
Partition coefficient	No information available Not applicable Product/Substance is inorganic
Autoignition Temperature	Aluminum oxide has no potential to explode.
Decomposition Temperature	~2000 °C (> 2050 °C)
Viscosity	No information available.
Kinematic viscosity	Not applicable Solid
Dynamic viscosity	Not applicable Solid
Explosive Properties	None
Oxidizing Properties	None
Particle Size	No information available
VOC Content (%)	Not applicable

9.2. Other information

9.2.1. Information with regard to physical hazard classes

Not applicable

9.2.2. Other safety characteristics

Not applicable

SECTION 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

Safety Data Sheet

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

Issue Date 17/Jul/2024

Print Date 17/Jul/2024

Revision Number 1.3.1

Page 8 of 12

10.4. Conditions to avoid Incompatible materials
Decomposition Temperature ~ 2000 °C (> 2050°C)
< / =0.3% : Al₂O₃ , Water

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.

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Aluminum oxide

Serious eye damage/eye irritation

Non-irritant : Rabbit

Skin Corrosion/Irritation

Non-irritant : Rabbit

Mutagenicity

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.

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.

Safety Data Sheet

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

Issue Date 17/Jul/2024

Print Date 17/Jul/2024

Revision Number 1.3.1

Page 9 of 12

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.

Information on Likely Routes of Exposure

Inhalation	Do not breathe dust
Ingestion	Ingestion is not a likely route of exposure
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
Aspiration hazard	Not an expected route of exposure.

11.2. Information on other hazards

11.2.1. Endocrine disrupting properties This product does not contain any known or suspected endocrine disruptors

11.2.2. Other information Not applicable

SECTION 12: Ecological information

12.1. Toxicity Not considered to be harmful to aquatic life

Aluminum 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.

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.

Safety Data Sheet

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

Issue Date 17/Jul/2024

Print Date 17/Jul/2024

Revision Number 1.3.1

Page 10 of 12

12.6. Endocrine disrupting properties This product does not contain any known or suspected endocrine disruptors

SECTION 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

Aluminum oxide

WGK Classification (AwSV) 1346 WGK: nwg

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

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	Not applicable

Safety Data Sheet

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

Issue Date 17/Jul/2024

Print Date 17/Jul/2024

Revision Number 1.3.1

Page 11 of 12

user

14.7. Maritime transport in bulk according to IMO instruments

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	Australia (AIC)	Canada (DSL)	China (IECSC)	Japan	S. Korea (KECL)	Mexico	Thailand (TECI)	New Zealand	Philippines (PICCS)	Taiwan	TSCA: United States
Aluminum oxide	1344-28-1	215-691-6	Y	Y	Y	(1)-23 (ENCS)(IS HL)	KE-01012	Y	55-1-01518	Y	Y	Y	A

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

REACH No.

Aluminum oxide

EU REACH registration number 01-2119529248-35-xxxx

01-2119529248-35-0017

Turkish KKDIK pre-registration 05-0000192736-20-0000

Germany

Very low solubility Not considered to be harmful to aquatic life

Aluminum oxide

WGK Classification (AwSV) 1346 WGK: nwg

15.2. Chemical safety assessment

A Chemical Safety Assessment has been carried out for this substance

SECTION 16: Other information

Reason for Revision

This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006 & COMMISSION REGULATION (EU) No. 2020/878

Issue Date

17/Jul/2024

Print Date

17/Jul/2024

Revision Number

1.3.1

Prepared by

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

(CLP) Regulation (EC 1272/2008) Not classified.

Safety Data Sheet

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

Issue Date 17/Jul/2024

Print Date 17/Jul/2024

Revision Number 1.3.1

Page 12 of 12

Labeling

Symbols/Pictograms

None

Signal Word

None

Hazard Statements

This product is not classified as hazardous according to the UN GHS guideline and labeling is not required. This material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Training Advice

Do not handle until all safety precautions have been read and understood.

Abbreviations and acronyms

IARC (International Agency for Research on Cancer)
IUCLID (International Uniform Chemical Information Database)
WHMIS (Workplace Hazardous Materials Information System)
OSHA (Occupational Safety and Health Administration of the US Department of Labor)
TWA (Time-Weighted Average)
CLP (The Classification, Labeling and Packaging of Substances and Mixtures Regulation (EC 1272/2008))
PPE (Personal Protection Equipment)
NIOSH (National Institute for Occupational Safety and Health)
CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act)
RQ (Reportable Quantity) (RQ/% in mixture)
STEL (Short Term Exposure Limit)
TLV® (Threshold Limit Value)
DNEL (Derived No Effect Level)
SVHC (Substances of Very High Concern)
BOD (Biochemical oxygen demand)
COD (Chemical oxygen demand)
ICAO (International Civil Aviation Organization)
IMDG (International Maritime Dangerous Goods)
ADR (European Agreement Concerning the International Carriage of Dangerous Goods by Road)
RID (Agreement Concerning the International Carriage of Dangerous Goods by Rail)
IATA (International Air Transport Association)
IMDG (International Maritime Dangerous Goods)
DOT (Department of Transportation)
TDG (Transport of Dangerous Goods) Canada
PNEC (Predicted No Effect Concentration)
SCBA (Self-Contained Breathing Apparatus) Positive Pressure
GHS (Globally Harmonized System)
TSCA (Toxic Substances Control Act)

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