



Martoxid® TM-2090

**Japan-JIS Z 7253:2019
Occupational Safety and Health Act
GHS (Globally Harmonized System)**

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1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Martoxid® TM-2090

Chemical Name Al₂O₃ (surface modified)

Pure substance/mixture Mixture

Recommended Use Thermally conductive filler

Uses advised against None known

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

Internet www.huberadvancedmaterials.com

E-mail www.huberadvancedmaterials.com/contact

Emergency Telephone Number CHEMTREC: +1 800 424 9300 or International 1+703-527-3887
+81 03-3560-7316

2. HAZARD IDENTIFICATION

Japan GHS Classification

Physical Hazards Not classified.

Health Hazard Not classified.

Environmental Hazards Not classified.

GHS 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

Precautionary Statements

Prevention Do not handle until all safety precautions have been read and understood
Employ good industrial hygiene practice
Do not breathe dust

Response IF exposed or concerned: Get medical advice/attention

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Wash with plenty of soap and water

StorageStore away from incompatible materials.
Keep in a dry place**Disposal**

Dispose of contents/container to an approved waste disposal plant

Additional Information:

None

3. COMPOSITION/INFORMATION ON INGREDIENTS

Pure substance/mixture

Mixture

Chemical Name	CAS NUMBER:	Weight-%	Japan	Japan GHS Classification
Aluminum oxide	1344-28-1	>99	(1)-23 (ENCS)(ISHL)	Not classified.

Notes

The above values are not product specifications

4. FIRST AID MEASURES

If inhaled:Remove victim to fresh air and keep at rest in a position comfortable for breathing
If symptoms persist, call a physician**IF ON SKIN:**

Wash off with soap and water. Get medical attention if irritation develops and persists.

IF IN EYES:In case of eye contact, remove contact lens and rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes
Call a physician if irritation develops and persists**If swallowed:**Rinse mouth thoroughly with water
If swallowed, call a poison control center or physician immediately**Most Important Symptoms and Effects, Both Acute and Delayed**

Treat symptomatically

Self-Protection of the First Aider

Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves

Notes to Physician

Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing MediaWater spray (fog)
Foam
Dry chemical

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In case of fire and/or explosion do not breathe fumes
Water mist may be used to cool closed containers
Keep unauthorized personnel away**Special Protective Equipment for Firefighters** Wear self-contained breathing apparatus and protective suit

6. ACCIDENTAL RELEASE MEASURES

Protective Equipment and Precautions for Firefighters
Avoid dust formation
Ensure adequate ventilation
Use personal protection recommended in Section 8
Avoid contact with eyes and skin. Wear suitable personal protection equipment.
Keep unauthorized personnel away**Environmental Precautions**
Keep out of drains, sewers, ditches and waterways
Disposal considerations
See section 13 for more information**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 Minimize use of water during clean-up
Recommended filter type: High efficiency particulate air filter (HEPA filter)**Other Information** Not applicable

7. HANDLING AND STORAGE

Handling**Technical measures**
Provide adequate ventilation as well as local exhaustion at critical locations
Ensure adequate ventilation
Use personal protection equipment
See section 8 for more information**Advice on safe handling** Minimize dust generation and accumulation**Conditions for safe storage, including any incompatibilities** Keep containers tightly closed in a cool, well-ventilated place**Hygiene Measures** Wash hands thoroughly after handling**Storage****Packaging compatibilities** Keep/store only in original container

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8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Limits Provide adequate ventilation as well as local exhaust at critical locations

Aluminum oxide

Japan

TWA: 0.5 mg/m³ (respirable dust)
2 mg/m³ (total dust)

Engineering Measures Ensure adequate ventilation, especially in confined areas

Personal Protective Equipment

Respiratory Protection In case of inadequate ventilation wear respiratory protection

Hand protection For operations where prolonged or repeated skin contact may occur, impervious gloves should be worn

Eye Protection Wear safety glasses with side shields (or goggles)

Skin and Body Protection Wear suitable protective clothing.
Chemical resistant apron.

Hygiene Measures Handle in accordance with good industrial hygiene and safety practice
Wash thoroughly after handling
Avoid contact with eyes and skin
Do not breathe dust

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Solid, Powder
Color	White
Odor	Odorless
Odor Threshold	No information available
Melting Point / Melting Range	No data available
Boiling Point	No data available
Freezing Point	No information available
Autoignition Temperature	Aluminum oxide has no potential to explode.
Evaporation Rate	Not applicable
Flammability	No information available
Explosive Properties	None
Vapor Pressure	1 hPa (2158 °C)
Water Solubility	Insoluble
Partition coefficient	Not applicable Product/Substance is inorganic
Viscosity	No data available
Specific Gravity	No data available
Oxidizing Properties	None
Decomposition Temperature	~2000 °C (> 2050 °C)
Flash Point	Not applicable. Product/Substance is inorganic. Solid.
pH:	8.8 11% Water
Melting point / Freezing point	2000 °C (3632 °F) (1013 hPa)
Initial boiling point and boiling range	2980 °C (5396 °F) (1013 hPa) Melting Point : > 300°C
Relative Vapor Density	Not applicable Melting Point : > 300°C
Relative Density	3.98 g/cm ³
Solubility in other solvents	No information available

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Not applicable Solid

Dynamic viscosity

Not applicable Solid

10. STABILITY AND REACTIVITY

Reactivity	Stable under normal conditions
Chemical stability	Stable under normal conditions
Possibility of hazardous reactions	None known
Conditions to avoid	Dust formation. Incompatible materials.
Incompatible materials	Strong oxidizing agents
Hazardous decomposition products	None known

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
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.

Symptoms	Low hazard for usual industrial or commercial handling
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11.1. Information on toxicological effects

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.

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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.
Serious eye damage/eye irritation	Based on available data, the classification criteria are not met.
Respiratory Sensitization	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

Aluminum oxide

Aquatic toxicity	Not considered to be harmful to aquatic life
Ecotoxicity	Based on available data, the classification criteria are not met.
Persistence and degradability	No data available
Bioaccumulation	No data available.
Mobility in soil	No data available
Hazardous to the ozone layer	No data available

13. DISPOSAL CONSIDERATIONS

Disposal	Dispose of in accordance with federal, state and local regulations
Contaminated packaging	Empty containers should be taken to an approved waste handling site for recycling or disposal

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14. TRANSPORT INFORMATION

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

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 user Not applicable

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

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15. REGULATORY INFORMATION

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

Poisonous and Deleterious Substances Control Act

Not applicable

Industrial Safety and Health Act (ISHA)

Not applicable under the Ordinance on Prevention of Hazards due to Specified Chemical Substances

Not applicable under the Ordinance on Prevention of Organic Solvent Poisoning

Substances requiring name labeling or notification (Designated Hazardous Substances)

Not applicable.

PRTR and Promotion of Chemical Management Law:

Not applicable

Fire Services Act

Not applicable

Japan - Specified Chemical Substances

Class I specified chemical substances

Not regulated.

Class II specified chemical substances

Not regulated.

Monitoring chemical substances

Not regulated.

Priority Assessment Chemical Substances (PACs)

Not regulated.

Reporting Exempted Substances

Not regulated.

Global Inventories

Pure substance/mixture

Mixture

Chemical Name	CAS NUMBER:	EC No	EU REACH registrati on number	Australia (AIC)	Canada (DSL)	China (IECSC)	Japan	S. Korea (KECL)	Mexico	New Zealand	Philippine s (PICCS)	Taiwan	TSCA: United States
Aluminum oxide	1344-28-1	215-691-6	01-211952 9248-35-x xxx	Y	Y	Y	(1)-23 (ENCS)(ISH L)	KE-01012	Y	Y	Y	Y	A

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

Legend-Inventories

KECL - Korean Existing and Evaluated Chemical Substances

IECSC - China Inventory of Existing Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

AICS - Australian Inventory of Chemical Substances

TSCA (Toxic Substances Control Act)

DSL (Domestic Substance List)

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NDSL (Non-Domestic Substances List)
Japan - ISHL Notifiable Substances
ENCS - Japan Existing and New Chemical Substances

Occupational Safety and Health Act (Industrial Safety and Health Act): This product, labor hazardous material should be notified of the names and the monitoring chemicals.

PRTR and Promotion of Chemical Management Law (PRTR Law): This like the Safety and Health Act and harmful substances, the component corresponding to the dangerous goods and hazardous substances should be displayed the name, etc.,

It does not include the range (wt%).

Law Concerning the Examination and Regulation of Manufacture, etc. of Chemical Substances (CSCL): This product is a priority assessment substance of Chemical Substances Control Law, does not contain a specific chemical substance, the appropriate component in product is not a component corresponding to the first Class I Designated Chemical Substance and the second Class I Designated Chemical Substance PRTR law, within the target range (wt%) as a .

Poisonous and Deleterious Substances Control Act: This product, contains a component corresponding to the Poisonous and Deleterious Substances Control Law, but is does below the range (wt%) as a target.

Fire Service Act: This product does not contain substances at a level for restriction is not due to the Fire Defense Law.
Ship Safety Act: Not applicable.

Aviation Law: Not applicable.

16. OTHER INFORMATION

Prepared by	Huber Engineered Materials Global Regulatory Affairs (Email – HEM.HAMRegulatory@huber.com)
Reason for Revision	This SDS complies with the requirements of JIS Z 7252:2019 and JIS Z 7253:2019 (Japan)
Bibliography	NITE GHS Classified list Japan Society for occupational health (2015) recommendation of allowable concentrations, etc. ACGIH TLV: American Conference of Governmental Industrial Hygienists - Threshold Limit Value
Abbreviations and acronyms	IARC (International Agency for Research on Cancer) IATA (International Air Transport Association) IMDG (International Maritime Dangerous Goods) IUCLID (International Uniform Chemical Information Database) WHMIS (Workplace Hazardous Materials Information System) DOT (Department of Transportation) 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) TDG (Transport of Dangerous Goods) Canada 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)

HUBER

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ADR (European Agreement Concerning the International Carriage of Dangerous Goods by Road)

RID (Agreement Concerning the International Carriage of Dangerous Goods by Rail)

SCBA (Self-Contained Breathing Apparatus) Positive Pressure

PNEC (Predicted No Effect Concentration)

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