



FIRE RETARDANT ADDITIVES

# Safety Data Sheet

## Martoxid® TM-2090

Prepared in accordance with GB/T 16483-2008, GB/T 24774-2009, GB 13690 – 2009, GB/T 17519–2013  
GHS (Globally Harmonized System)

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### Section 1: PRODUCT AND COMPANY IDENTIFICATION

Product Name:	Martoxid® TM-2090
Chemical Name	Al <sub>2</sub> O <sub>3</sub> (surface modified)
Pure substance/mixture	Mixture
<u>Aluminum oxide</u>	
CAS Number	1344-28-1
Weight-%	>99
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
Emergency Telephone	CHEMTREC: 1 800 424 9300 or International +1 703 527 3887
E-mail	hubermaterials@huber.com
Internet	www.hubermaterials.com

### Section 2: HAZARDS IDENTIFICATION

GHS Classification	Not classified
Physical Hazard	Not classified
Health Hazard	Not classified
Environmental Hazard	Not classified
Label Elements	
Symbols/Pictograms	None

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**Signal Word** None

### Precautionary Statements

**Prevention** Do not handle until all safety precautions have been read and understood.  
Observe good industrial hygiene practices.  
Wear protective gloves/protective clothing/eye protection/face protection.  
Use mechanical ventilation (dilution and local exhaust) to control exposure  
Avoid breathing 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.

**Spills and Leaks** Collect spillage

**Storage** Store away from incompatible materials.

**Disposal** Dispose of in accordance with federal, state and local regulations

**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

**Additional Information:** None.

## Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

**Pure substance/mixture** Mixture

Chemical Name	CAS Number	China (IECSC)	China classification	TSCA: United States	REACH registration number	Weight-%
Aluminum oxide	1344-28-1	Y	Not classified	A	01-2119529248-35-xxxx 01-2119529248-35-0017	>99

## Section 4: 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

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	protect themselves
<b>Eye Contact</b>	Rinse cautiously with water for several minutes Remove contact lenses, if present and easy to do. Continue rinsing
<b>Skin Contact</b>	Wash skin with soap and water
<b>Inhalation</b>	IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing
<b>Ingestion</b>	If swallowed, rinse mouth with water (only if the person is conscious)
<b>Notes to Physician</b>	Treat symptomatically
<b>Personal Protective Equipment For First Aid Responders</b>	Wear suitable protective clothing IF exposed or concerned: Get medical advice/attention
<b>Expected acute symptoms and delayed symptoms</b>	None known

## Section 5: FIRE FIGHTING MEASURES

<b>Flammable Properties</b>	None known
<b>Suitable Extinguishing Media</b>	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
<b>Unsuitable extinguishing media:</b>	None known
<b>Specific Hazards Arising from the Chemical</b>	None known
<b>Unusual fire &amp; explosion hazards:</b>	None
<b>Protective measures:</b>	Use protective equipment that is appropriate for surrounding materials.
<b>Protective Equipment and Precautions for Firefighters</b>	Wear self-contained breathing apparatus and protective suit

## Section 6: SPILLAGE, ACCIDENTAL RELEASE MEASURES

<b>Personal Precautions</b>	Avoid dust formation. When exposed to high concentrations of airborne dust, wear a SCBA in accordance with national legislation
<b>Environmental Precautions</b>	This product does not present any particular risk to the environment. Refer to applicable national, state and local regulations prior to washing in drain.
<b>Methods for cleaning up</b>	Pick up mechanically and / or by rinsing with water. Avoid dry sweeping and use a sprinkler system or exhaust ventilation to prevent dust formation.

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## Section 7: HANDLING AND STORAGE

**Handling** Minimize dust generation and accumulation. Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice.**Storage** Store in a dry area. Keep containers closed and protect from physical damage.

## Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

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

China	TWA: 4 mg/m <sup>3</sup> total dust
China	STEL: 8 mg/m <sup>3</sup> total dust
ACGIH	TWA: 10 mg/m <sup>3</sup>
ACGIH TLV	TWA: 1 mg/m <sup>3</sup> respirable fraction
NIOSH	Not established
OSHA	TWA: 15 mg/m <sup>3</sup> total dust
	TWA: 5 mg/m <sup>3</sup> respirable fraction
	(vacated) TWA: 10 mg/m <sup>3</sup> total dust
	(vacated) TWA: 5 mg/m <sup>3</sup> respirable fraction

**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**

<b>Eye/Face Protection</b>	Wear safety glasses with side shields (or goggles)
<b>Skin and Body Protection</b>	Wear suitable protective clothing
<b>Hand Protection</b>	Impervious gloves
<b>Respiratory Protection</b>	When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.
<b>Hygiene Measures</b>	Handle in accordance with good industrial hygiene and safety practice Handle in accordance with good industrial hygiene and safety practice

**Environmental Exposure Controls** Dispose of in accordance with local regulations

## Section 9: PHYSICAL AND CHEMICAL PROPERTIES

**Information on basic physical and chemical properties****Appearance:**

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

## Section 10: STABILITY AND REACTIVITY

<b>Stability</b>	Stable under normal conditions
<b>Conditions to avoid:</b>	Incompatible materials Decomposition Temperature ~ 2000 °C (>2050 °C) <=0.3% : Al <sub>2</sub> O <sub>3</sub> , Water
<b>Incompatible materials</b>	Strong acids
<b>Hazardous decomposition products</b>	None under normal processing
<b>Hazardous Reactions</b>	None under normal processing
<b>Hazardous polymerization:</b>	None under normal processing

## Section 11: TOXICOLOGICAL INFORMATION

<b>General Information</b>	Users are advised to consider national Occupational Exposure Limits or other
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equivalent values.

**Product Information****Information on Likely Routes of Exposure**

<b>Eyes</b>	Avoid contact with eyes Dust contact with the eyes can lead to mechanical irritation
<b>Skin</b>	Avoid prolonged or repeated contact with skin Contact with dust can cause mechanical irritation or drying of the skin
<b>Inhalation</b>	Do not breathe dust
<b>Ingestion</b>	Ingestion is not a likely route of exposure
<b>Aspiration hazard</b>	Not an expected route of exposure.
<b>Symptoms</b>	Low hazard for usual industrial or commercial handling

**11.1. Information on toxicological effects****Aluminum oxide**

<b>Serious eye damage/eye irritation</b>	Non-irritant : Rabbit
<b>Skin Corrosion/Irritation</b>	Non-irritant : Rabbit
<b>Mutagenicity</b>	Based on available data, the classification criteria are not met
<b>Reproductive Effects</b>	No indication of effects on fertility. No indication of effects on developmental toxicity.
<b>Target Organ Effects</b>	Lungs
<b>Specific target organ toxicity - Single exposure</b>	May cause respiratory irritation
<b>Specific target organ toxicity - Repeated exposure</b>	May cause damage to organs through prolonged or repeated exposure if inhaled Lungs

<b>Acute Toxicity</b>	Based on available data, the classification criteria are not met
<b>Chronic Toxicity</b>	Based on available data, the classification criteria are not met.
<b>Chronic Effects</b>	Based on available data, the classification criteria are not met.
<b>Serious eye damage/eye irritation</b>	Based on available data, the classification criteria are not met
<b>Respiratory Sensitization</b>	Based on available data, the classification criteria are not met
<b>Skin Corrosion/Irritation</b>	Based on available data, the classification criteria are not met
<b>Skin Sensitization</b>	Based on available data, the classification criteria are not met
<b>Mutagenicity</b>	Based on available data, the classification criteria are not met.
<b>Reproductive Effects</b>	This product does not contain any known or suspected reproductive hazards.
<b>Reproductive Toxicity</b>	Based on available data, the classification criteria are not met.

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<b>Carcinogenicity</b>	This product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC or NTP.
<b>Specific target organ toxicity - Single exposure</b>	Based on available data, the classification criteria are not met.
<b>Specific target organ toxicity - Repeated exposure</b>	Based on available data, the classification criteria are not met.

## Section 12: ECOLOGICAL INFORMATION

<b>Ecotoxicity</b>	Very low solubility. Not considered to be harmful to aquatic life.
<b>Persistence/Degradability:</b>	The methods for determining biodegradability are not applicable to inorganic substances.
<b>Bioaccumulative Potential</b>	Not likely to bioaccumulate.
<b>Partition coefficient</b>	Not available
<b>Bioconcentration factor (BCF)</b>	No data available.
<b>Mobility in soil</b>	None.
<b>Results of PBT and vPvB assessment</b>	This substance does not meet the criteria for classification as PBT or vPvB.
<b>Other Adverse Effects</b>	None known

## Section 13: DISPOSAL CONSIDERATIONS

<b>Waste from Residues/Unused Products</b>	Dispose of in accordance with local regulations
<b>Contaminated Packaging:</b>	Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not reuse empty container

## Section 14: TRANSPORT INFORMATION

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

<b>DOT</b>	Not regulated
<b>ADR</b>	Not regulated
<b>RID</b>	Not regulated

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<b>ADN</b>	Not regulated
<b>IATA</b>	Not regulated
<b>IMDG/IMO</b>	Not regulated
<b>ICAO</b>	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**Section 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 (AIC)	Canada (DSL)	China (IECSC)	Japan	S. Korea (KECL)	Mexico	New Zealand	Philippines (PICCS)	Taiwan	TSCA: United States
Aluminum 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



**Section 16: OTHER INFORMATION**

<b>Prepared by</b>	Huber Engineered Materials Global Regulatory Affairs email: regulatory.affairs@huber.com
<b>Reason for Revision</b>	GB/T 16483-2008 GB/T 24774-2009 GB 13690 – 2009 GB/T 17519–2013
<b>GHS Classification</b>	Not classified
<b>Physical Hazard</b>	Not classified
<b>Health Hazard</b>	Not classified
<b>Environmental Hazard</b>	Not classified
<b>Label Elements</b>	
<b>Symbols/Pictograms</b>	None
<b>Signal Word</b>	None
<b>Abbreviations and acronyms</b>	IARC (International Agency for Research on Cancer) IATA (International Air Transport Association) IMDG (International Maritime Dangerous Goods) IUCIID (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) SCBA (Self-Contained Breathing Apparatus) Positive Pressure GHS (Globally Harmonized System) ADR (European Agreement Concerning the International Carriage of Dangerous Goods by Road) RID (Agreement Concerning the International Carriage of Dangerous Goods by Rail) SARA (Superfund Amendments and Reauthorization Act of 1986) TSCA (Toxic Substances Control Act)

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**End of Safety Data Sheet**