

**Martoxid® KMS-99**

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

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Section 1: PRODUCT AND COMPANY IDENTIFICATION

| | |
|-----------------------------|---|
| Product Name: | Martoxid® KMS-99 |
| Chemical Name | Preparation : Al ₂ O ₃ |
| Aluminum oxide | |
| CAS Number | 1344-28-1 |
| Weight-% | >96 |
| Recommended Use | Industrial |
| Uses advised against | None known |
| Company: | J.M. Huber Corporation 3100 Cumberland Boulevard, Suite 600 Atlanta, GA 30339 USA Tel: +1 678 247-7300 |
| 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 |
| Signal Word | None |
| Precautionary Statements | |
| Prevention | Avoid release to the environment Observe good industrial hygiene practices. |

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Avoid breathing dust.
Use mechanical ventilation (dilution and local exhaust) to control exposure

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

Spills and Leaks Collect spillage

Storage Store in a dry place

Disposal Dispose in accordance with local, state and national regulations

Additional Information: None.

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

| Chemical Name | CAS Number | China (IECSC) | China classification | TSCA: United States | REACH registration number | Weight-% |
|----------------|------------|---------------|----------------------|---------------------|--|----------|
| Aluminum oxide | 1344-28-1 | Y | Not classified | Y | 01-2119529248-35 -xxxx 01-2119529248-35 -0017 | >96 |

Section 4: FIRST AID MEASURES

General Advice In case of doubt or when symptoms persist, seek medical attention.

Eye Contact Hold eyelids apart and flush eyes with a steady, gentle stream of water for several minutes.

Skin Contact Wash skin with soap and water

Inhalation IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing

Ingestion Rinse mouth with water. Do not induce vomiting.

Notes to Physician Treat symptomatically

Personal Protective Equipment For First Aid Responders Wear suitable protective clothing
IF exposed or concerned: Get medical advice/attention

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delayed symptoms None known**Section 5: FIRE FIGHTING MEASURES**

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

Section 6: SPILLAGE, ACCIDENTAL RELEASE MEASURES

| | |
|----------------------------------|---|
| Personal Precautions | Avoid dust formation Ensure adequate ventilation Use personal protection recommended in Section 8 Keep unauthorized personnel away |
| Environmental Precautions | Avoid runoff to waterways and sewers |
| Methods for cleaning up | Pick up mechanically and / or by rinsing with water. Avoid dry sweeping and use a sprinkler system or exhaust ventilation to prevent dust formation. |
| Other Information: | None known |

Section 7: HANDLING AND STORAGE

| | |
|-----------------|---|
| Handling | In case of exposure to environments exceeding the occupational exposure limit, wear a respirator in compliance with national legislation. |
| Storage | Keep containers tightly closed in a cool, well-ventilated place |

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

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

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

| | |
|---------------------------------|--|
| Eye/Face Protection | Wear safety goggles with side protection |
| Skin and Body Protection | Wear suitable protective clothing |
| Hand Protection | Impervious gloves |
| Respiratory Protection | When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. |

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice Wash hands and face before breaks and immediately after handling the product.

Environmental Exposure Controls

Dispose of in accordance with local regulations

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance:

| | |
|--|--|
| Physical State | Solid Powder |
| Color | White (Al ₂ O ₃) |
| Odor | Odorless |
| Odor Threshold | No information available |
| pH: | +/- 9 (10 % / H ₂ O) |
| 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) |

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| | |
|-------------------------------------|---|
| Vapor Density | Not applicable |
| Relative Density | Melting Point : > 300°C |
| Water Solubility | +/- 3.7 - 3.9 |
| Solubility in other solvents | Insoluble |
| Partition coefficient | No information available |
| Autoignition Temperature | Not applicable : Product/Substance is inorganic |
| Decomposition Temperature | No information available |
| Dynamic viscosity | No information available |
| Explosive Properties | Not applicable Solid |
| Oxidizing Properties | None |
| | None |

Section 10: STABILITY AND REACTIVITY

| | |
|---|--------------------------------|
| Stability | Stable under normal conditions |
| Conditions to avoid: | None known |
| Incompatible materials | Strong acids |
| Hazardous decomposition products | None under normal processing |
| Hazardous Reactions | None under normal processing |
| Hazardous polymerization: | None under normal processing |

Section 11: TOXICOLOGICAL INFORMATION

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

Product Information

Information on Likely Routes of Exposure

| | |
|--------------------------|--|
| Eyes | Avoid contact with eyes Dust contact with the eyes can lead to mechanical irritation |
| Skin | Avoid prolonged or repeated contact with skin Contact with dust can cause mechanical irritation or drying of the skin |
| Inhalation | Do not breathe dust |
| 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

11.1. Information on toxicological effects

Aluminum 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 |
| 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 | Mixture Al ₂ O ₃ Repeated dose toxicity Inhalation 28-d Rat NOAEL (No observed adverse effect level) 70 mg(Al)/m ³ . Target Organs Lungs Respiratory system Repeated dose toxicity 1- Year Oral Rat NOAEL (No observed adverse effect level) >=30 mg Al/kg bw |
|-----------------------|---|

| | |
|--|-----------------------|
| Serious eye damage/eye irritation | Non-irritant : Rabbit |
|--|-----------------------|

| | |
|----------------------------------|--|
| Respiratory Sensitization | Based on available data, the classification criteria are not met |
|----------------------------------|--|

| | |
|----------------------------------|-----------------------|
| Skin Corrosion/Irritation | Non-irritant : Rabbit |
|----------------------------------|-----------------------|

| | |
|---------------------|---|
| Mutagenicity | Based on available data, the classification criteria are not met. |
|---------------------|---|

| | |
|-----------------------------|---|
| 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 | This product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC or NTP. |
|------------------------|--|

| | |
|-----------------------------|--------|
| Target Organ Effects | Lungs. |
|-----------------------------|--------|

| | |
|---|---------------------------|
| Specific target organ toxicity - Single exposure | No information available. |
|---|---------------------------|

| | |
|---|---------------------------|
| Specific target organ toxicity - Repeated exposure | No information available. |
|---|---------------------------|

Section 12: ECOLOGICAL INFORMATION

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

Section 13: DISPOSAL CONSIDERATIONS

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|--|--|
| Waste from Residues/Unused Products | Dispose of in accordance with local regulations |
| Contaminated Packaging: | Empty containers should be taken to an approved waste handling site for recycling or disposal. |

Section 14: TRANSPORT INFORMATION**Mode of Transportation (Road, Water, Air, Rail)**

| | |
|-----------------|---------------|
| DOT | Not regulated |
| ADR | 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 |

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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 (AICS) | Canada (DSL) | China (IECSC) | Japan (1)-23 (ENCS)(IS HL) | 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 | | KE-01012 | Y | Y | Y | Y | Y |

Legend

X / Y: Complies - / N: Not Listed Exempt

Section 16: OTHER INFORMATION

| | |
|-----------------------------------|--|
| Prepared by | Huber Engineered Materials Global Regulatory Affairs email: regulatory.affairs@huber.com |
| Reason for Revision | GB/T 16483-2008 GB/T 24774-2009 GB 13690 – 2009 GB/T 17519–2013 |
| GHS Classification | Not classified |
| Physical Hazard | Not classified |
| Health Hazard | Not classified |
| Environmental Hazard | Not classified |
| Label Elements | |
| Symbols/Pictograms | None |
| Signal Word | None |
| Abbreviations and acronyms | <p>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)</p> |

HUBER

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End of Safety Data Sheet