



Issue Date 01/Jan/2024
Print Date 14/Dec/2023

Revision Number 1.3.1

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

1.1. Product identifier

Product Name: Kemgard® HPSS

Pure substance/mixture Mixture

Magnesium Hydroxide

CAS Number 1309-42-8

Weight-% >25

Zinc Oxide

CAS Number 1314-13-2

Weight-% 10-30

Zinc Molybdenum Oxide

CAS Number 22914-58-5

61583-60-6

Weight-% >5

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

Recommended Use Flame retardant Smoke suppressant

Uses advised against None known.

1.3. Details of the supplier of the safety data sheet

Company: J.M. Huber Corporation
3100 Cumberland Boulevard, Suite 600
Atlanta, GA 30339 USA
Tel: +1 678 247-7300

Internet www.huberadvancedmaterials.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

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Not classified

Health Hazards

Specific target organ toxicity (STOT) - repeated exposure, category 2

Environmental Hazard

Acute Aquatic Toxicity: Category 1

Chronic Aquatic Toxicity: Category 1

2.2. Label elements**Symbols/Pictograms****Signal Word**

Warning

Hazard Statements

H373 - May cause damage to organs through prolonged or repeated exposure

H400 - Very toxic to aquatic life

H410 - Very toxic to aquatic life with long lasting effects

Precautionary Statements**Prevention**

P202 - Do not handle until all safety precautions have been read and understood

P260 - Do not breathe dust

P273 - Avoid release to the environment

Response

P314 - Get medical advice/attention if you feel unwell

P391 - Collect spillage

P303 + P361 + P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water [or shower]

P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

Storage

Store away from incompatible materials.

Disposal

P501 - Dispose of contents/containers in accordance with local regulations.

2.3. Other hazards

No information available.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Pure substance/mixture

Mixture

Chemical Name	CAS Number	TSCA: United States	EU REACH registration number	Weight-%
Magnesium Hydroxide	1309-42-8	A	01-2119488756-18-0040	>25
Zinc Oxide	1314-13-2	A	01-2119463881-32	10-30

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Zinc Molybdenum Oxide	22914-58-5 61583-60-6	A	01-2120800481-68-0000	>5
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4. FIRST AID MEASURES

4.1. Description of first aid measures

General Advice	Do not handle until all safety precautions have been read and understood. Employ good industrial hygiene practice. Wear suitable protective clothing, gloves and eye/face protection. Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves. When in doubt or if symptoms are observed, get medical advice.
Eye Contact	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Skin Contact	Wash with plenty of soap and water.
Ingestion	Rinse mouth thoroughly with water.
Inhalation	Do not breathe dust. If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.
Aspiration hazard	Based on available data, the classification criteria are not met.
Notes to Physician	Treat symptomatically.
4.2. Most important symptoms and effects, both acute and delayed	May cause irritation to mucous membranes and respiratory tract. 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. Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.

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.

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5.2. Special hazards arising from the substance or mixture

Non-combustible.

5.3. Advice for firefighters

Special protective equipment for firefighters

Wear a self-contained breathing apparatus and chemical protective clothing.

Fire-fighting measures

Water mist may be used to cool closed containers. No special fire protection measures are necessary. Standard procedure for chemical fires.

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 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

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 handling

Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Minimize dust generation and accumulation. Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Use personal protective equipment as required.

7.2. Conditions for safe storage, including any incompatibilities Keep container tightly closed and dry. Store away from incompatible materials.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

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8.1. Control parameters

Occupational exposure limits

Magnesium Hydroxide

NIOSH

ACGIH

OSHA

TWA: 15 mg/m³ (total dust)
TLV-TWA: 8-hr : 10 mg/m³ (total dust)
3 mg/m³ (respirable fraction)
TWA: 15 mg/m³ total dust
5 mg/m³ respirable

Zinc Oxide

Malaysia**NIOSH**

ACGIH

OSHA

TWA 3 mg/m³ Fume and respirable dust
Ceiling: 15 mg/m³ (total dust)
STEL: 10 mg/m³ (fume)
TWA: 5 mg/m³ (total dust)
STEL: 10 mg/m³ (respirable)
TWA: 2 mg/m³ (respirable)
PEL: 15 mg/m³ (total dust)
5 mg/m³ (respirable fraction)

Zinc Molybdenum Oxide

Malaysia**NIOSH**

ACGIH

OSHA

TWA: 5 mg/m³
TWA 8-hr: 10 mg/m³
TWA: 10 mg/m³ dust
0.5 mg/m³ Respirable fraction
TWA: 5 mg/m³ (respirable); 10 mg/m³ (dust)
PEL: 5 mg/m³ (respirable)

Biological Limit Values

No information available

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

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

Wear suitable protective clothing.

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.

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Environmental Exposure Controls

Dispose of in accordance with local regulations. Do not empty into drains or water courses.

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:	8.9
Melting Point / Melting Range	No information available
Initial boiling point	No information available
Freezing Point	No information available
Boiling Point	No information available
Evaporation Rate	Not applicable.
Flammability (solid, gas)	No information available
Upper flammability limit:	
Lower flammability limit:	
Vapor Pressure	No data available
Vapor Density	Not applicable
Relative Density	3.5
Water Solubility	Slightly soluble
Solubility in other solvents	No information available
Partition coefficient	No data available
Autoignition Temperature	No data available
Decomposition Temperature	No information available
Viscosity	No information available.
VOC Content (%)	Not applicable

10. STABILITY AND REACTIVITY

10.1. Reactivity	Stable under normal conditions
10.2. Chemical stability	Stable under normal conditions
10.3. Possibility of hazardous reactions	None under normal processing
10.4. Conditions to avoid	Dust formation Incompatible materials
10.5. Incompatible materials	Strong oxidizing agents
10.6. Hazardous decomposition	None known

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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	May cause respiratory tract irritation
Skin	No known hazard in contact with skin
Eyes	Dust contact with the eyes can lead to mechanical irritation
Ingestion	Ingestion is not a likely route of exposure
Symptoms related to the physical, chemical and toxicological characteristics	Dust may cause mechanical irritation to eyes.

11.1. Information on toxicological effects

Magnesium Hydroxide

Oral LD50 8500 mg/kg Rat

Zinc Oxide

Oral LD50 7950 mg/kg Rat

Zinc Molybdenum Oxide

Oral LD50 >10000 mg/kg Rat

IARC Not Listed

Target Organ Effects Kidney (based on tubular degeneration/regeneration of male Han Wistar rats at 125 mg/kg/day)

Acute Toxicity

Low hazard for usual industrial or commercial handling

Respiratory Sensitization

Does not cause sensitization

Serious eye damage/eye irritation

Dust may cause mechanical irritation to eyes

Skin Corrosion/Irritation

Contact with dust can cause mechanical irritation or drying of the skin

Skin Sensitization

Not a skin sensitizer

Germ cell mutagenicity

No data available.

Reproductive Effects

This product does not contain any known or suspected reproductive hazards.

Carcinogenicity

This product does not contain any carcinogens or potential carcinogens as listed

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by OSHA, IARC or NTP.

Target Organ Effects

Skin. Eyes. Respiratory system.

**Specific target organ toxicity -
Single exposure**

No data available.

**Specific target organ toxicity -
Repeated exposure**May cause damage to organs through prolonged or repeated exposure if inhaled.
Kidney.

12. ECOLOGICAL INFORMATION

12.1. Ecotoxicity

Very toxic to aquatic life with long lasting effects.

Magnesium Hydroxide**WGK Classification (AwSV)** 5209 WGK: nwg**Zinc Oxide****WGK Classification (AwSV)** 2187 WGK: 2**12.2. Persistence and
degradability**

No data available.

12.3. Bioaccumulative potential

No data available.

Partition coefficient

No data available

**Bioconcentration factor
(BCF)**

No data available.

12.4. Mobility in soil

No data available.

**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**

Dispose of waste product or used containers according to local regulations. Do not allow to enter into surface water or drains.

Contaminated Packaging

Empty containers should be taken to an approved waste handling site for recycling

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or disposal.

Waste codes

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

Magnesium Hydroxide**European Waste Catalog** 060299**WGK Classification (AwSV)** 5209 WGK: nwg**Zinc Oxide****WGK Classification (AwSV)** 2187 WGK: 2

14. TRANSPORT INFORMATION

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

TDG -Canada	UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc Oxide, Zinc Molybdate)
DOT	UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc Oxide, Zinc Molybdate) Not regulated in non-bulk packages (<119 gal)
ADR	UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc Oxide, Zinc Molybdate)
RID	UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc Oxide, Zinc Molybdate)
ADN	UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc Oxide, Zinc Molybdate)
IATA	UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc Oxide, Zinc Molybdate)
IMDG/IMO	UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc Oxide, Zinc Molybdate)
ICAO	UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S (Zinc oxide)

14.1. UN number UN3077**14.2. UN proper shipping name** UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc Oxide, Zinc Molybdate)**14.3. Transport hazard class(es)** 9**14.4. Packing group** III**14.5. Environmental hazards** Yes Marine Pollutant**EmS:** F-A, S-F**14.6. Special precautions for** Do not handle until all safety precautions have been read and understood.

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user

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable



Marine Pollutant



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	EU REACH registration number	Australia (AIC)	Canada (DSL)	China (IECSC)	Japan	S. Korea (KECL)	Mexico	New Zealand	Philippines (PICCS)	Taiwan	TSCA: United States
Magnesium Hydroxide	1309-42-8	215-170-3	01-211948875 6-18-0040	Y	Y	Y	(1)-386 (ENCS) (ISHL)	KE-22716	Y	Y	Y	Y	A
Zinc Oxide	1314-13-2	215-222-5	01-211946388 1-32	Y	Y	Y	ENCS: (1)-561 ISHL: (1)-561	KE-35565	Y	Y	Y	Y	A
Zinc Molybdenum Oxide	22914-58-5 61583-60-6	245-322-4	01-212080048 1-68-0000	N	Y: DSL-229 14-58 -5 NDSL: 61583-60 -6	Y	(1)-781 (ENCS)(ISHL)	KE-11910	Y: (MO-generics)	Y	Y	Y	A

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16. OTHER INFORMATION

Prepared byHuber Engineered Materials Global Regulatory Affairs
email: regulatory.affairs@huber.com.**GHS Classification****Physical Hazard**

Not classified

Health Hazards

Specific target organ toxicity (STOT) - repeated exposure, category 2

Environmental HazardAcute Aquatic Toxicity: Category 1
Chronic Aquatic Toxicity: Category 1**Labeling****Symbols/Pictograms****Signal Word**

Warning

Hazard StatementsH373 - May cause damage to organs through prolonged or repeated exposure
H400 - Very toxic to aquatic life
H410 - Very toxic to aquatic life with long lasting effects**Training Advice**

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

Abbreviations and acronymsIARC (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)

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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)
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