Safety Data Sheet

Kemgard® HPSS

GHS (Globally Harmonized System)
Measures on the Management of Toxic Chemical Substances Labelling and Safety Data Sheets. December 11, 2014.

Section 1: Identification: Product identifier and chemical identity

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

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Pure substance/mixture Mixture

GHS Classification

Hazards identification

Physical Hazard 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.

SECTION 3: Composition/information on ingredients

3.2. Mixture Mixture

Chemical Name	CAS Number	Taiwan	Taiwan - GHS	EU REACH registration number	Weight-%
Magnesium Hydroxide	1309-42-8	Y	Not classified	01-2119488756-18-0040	>25
Zinc Oxide	1314-13-2	Y	Aquatic Acute 1 Aquatic Chronic 1	01-2119463881-32	10-30
Zinc Molybdenum Oxide	22914-58-5 61583-60-6	Y	STOT RE Cat. 2; (H373).Aquatic Acute Category 1;H400. Aquatic Chronic Cat.2; H411.	01-2120800481-68-0000	>5

SECTION 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.

Inhalation Do not breathe dust. 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 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.

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
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.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures	Avoid dust formation. Ensure adequate ventilation. Use personal protection recommended in Section 8. 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.

SECTION 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

SECTION 8: Exposure controls/personal protection

Engineering Controls:

Exposure Limit Values

Magnesium Hydroxide

Taiwan	OEL: Not established
ACGIH	TLV-TWA: 8-hr : 10 mg/m³ (total dust) 3 mg/m³ (respirable fraction)
OSHA	TWA: 15 mg/m³ total dust 5 mg/m³ respirable

Zinc Oxide

Taiwan	TWA: 5 mg/m³ (fume)
ACGIH	STEL: 10 mg/m³ (respirable) TWA: 2 mg/m³ (respirable)
OSHA	PEL: 15 mg/m³ (total dust) 5 mg/m³ (respirable fraction)

Zinc Molybdenum Oxide

Taiwan	OEL: 5 mg/m³
ACGIH	TWA: 10 mg/m³ dust 0.5 mg/m³ Respirable fraction
OSHA	TWA: 5 mg/m³ (respirable); 10 mg/m³ (dust) PEL: 5 mg/m³ (respirable)

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 Protection

Avoid contact with eyes Wear safety glasses with side shields (or goggles)

Skin and Body Protection

Use suitable protective clothing, gloves and footwear, selected with regard for use conditions and exposure.

Hand Protection

Impervious gloves: chemical resistant EN 420

Respiratory Protection:

Avoid breathing dust. Use NIOSH/MSHA approved respiratory protection equipment when airborne exposures exceeds established guidelines. In case of exposure to high levels of airborne mist, wear a respirator in compliance with

	national legislation. EN 149, P2 Half-mask In case of exposure to high levels of airborne mist, wear a respirator in compliance with national legislation. EN 149, P2 Half-mask
Hygiene Measures	Handle in accordance with good industrial hygiene and safety practice
Environmental Exposure	Toxic to aquatic life with long lasting effects

SECTION 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
Melting point / Freezing point	Not applicable
Initial boiling point	No information available
Boiling Point	No information available
Freezing Point	No information available
Flash Point	Not determined
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
Vapor Density	Not applicable
Density	No data available
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.
Kinematic viscosity	Not applicable
Oxidizing Properties	Not applicable
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	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 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

Magnesium Hydroxide

Oral LD50	8500 mg/kg Rat

Zinc Oxide

LD50s and LC50s	5000 mg/kg Oral LD50 Rat
Oral LD50	7950 mg/kg Rat

Zinc Molybdenum Oxide

Oral LD50	>10000 mg/kg Rat
IARC	Not Listed
Specific target organ toxicity - Repeated exposure	Kidney (based on tubular degeneration/regeneration of male Han Wistar rats at 125 mg/kg/day). NOAEL – 60 mg/kg Rat; Oral; 90-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 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.

Information on Likely Routes of Exposure

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

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 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. 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	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 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

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

14.7. Maritime transport in bulk according to IMO instruments
Not applicable

Marine Pollutant

SECTION 15: Regulatory information

Global Inventories

Chemical Name	CAS Number	EC No	EU REACH registration number	Australia (AIIC)	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	01-2119488756-18-0040	Y	Y	Y	(1)-386 (ENCS) (ISHL)	KE-22716	Y	Y	Y	Y	A
Zinc Oxide	1314-13-2	215-222-5	01-2119463881-32	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	01-2120800481-68-0000	N	Y	Y	(1)-781 (ENCS)(ISHL)	KE-11910	N	N	N	Y	A

SECTION 16: Other information

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GHS Classification

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

Hazards identification

Physical Hazard 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

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)
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
GHS (Globally Harmonized System)
SARA (Superfund Amendments and Reauthorization Act of 1986)
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