SAFETY DATA SHEET

Kemgard® 605

MoEL's Public Notice No. 2016-19 Standards for Classification and Labeling of Chemical Substances and Safety Data Sheet (SDS)

Section 1: PRODUCT AND COMPANY IDENTIFICATION

A. Product name Kemgard® 605

Pure substance/mixture Mixture

Aluminum Hydroxide
CAS Number 21645-51-2
Weight-% > 75

Zinc Molybdenum Oxide
CAS Number 22914-58-5
61583-60-6
Weight-% < 25

B. Recommended use and Limitations on use

Recommended Use Smoke suppressant

Uses advised against None known

C. Supplier information

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Atlanta, GA 30339 USA
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Section 2: HAZARDS IDENTIFICATION

A. Hazard category/Classification

Physical Hazards Not classified

Health Hazards Not classified

Environmental Hazards Chronic Aquatic Toxicity Category 3

B. Warning label items including precautionary statement

Label Elements

Symbols/Pictograms None

Signal Words None

Hazard Statements Harmful to aquatic life with long lasting effects

Precautionary statement

Prevention
Avoid release to the environment
Employ good industrial hygiene practice
Wash hands thoroughly after handling
Do not handle until all safety precautions have been read and understood
Take precautionary measures against static discharges

Response Wash skin with soap and water

Storage
Keep in a dry place
Store away from incompatible materials
Collect spillage

Disposal Disposal should be in accordance with applicable regional, national and local laws and regulations

C. Other hazards not included in the hazard category criteria (e.g. dust explosion hazard)
None known

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

Pure substance/mixture Mixture

Chemical Name	CAS Number	S. Korea (KECL)	Korean GHS Classification	Weight-%
Aluminum Hydroxide	21645-51-2	KE-00980	Not classified	> 75
Zinc Molybdenum Oxide	22914-58-5 61583-60-6	KE-11910	Acute Tox. 4, H332 STOT RE 2, H373 Aquatic Acute 1, H400 Aquatic Chronic 2, H411	< 25

Section 4: FIRST AID MEASURES

A. In case of eye contact Rinse with water. Get medical attention if irritation develops and persists.

B. In case of skin contact Wash off with soap and water. Get medical attention if irritation develops and persists.

C. In case of inhalation Move to fresh air. Call a physician if symptoms develop or persist.

D. In case of swallowing Rinse mouth. Get medical attention if symptoms occur.

E. Note to physician Treat symptomatically.

Section 5: FIRE FIGHTING MEASURES

A. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).
Unsuitable extinguishing media None known

B. Specific hazards arising from the chemical (example: hazardous combustion products)

Explosion hazard: None known

C. Specific methods of fire-fighting
Self-contained breathing apparatus and full protective clothing must be worn in case of fire. In the event of fire and/or explosion do not breathe fumes. Move container from fire area if it can be done without risk.

Section 6: SPILLAGE, ACCIDENTAL RELEASE MEASURES

A. Personal precautions, protective equipment and emergency measures Ensure adequate ventilation. Avoid dust formation. See section 8 for more information.

B. Environmental precautions Not considered to be harmful to aquatic life. Avoid discharge into drains, water courses or onto the ground.

C. Methods and materials for containment and cleaning up Vacuum or sweep material and place in a disposal container.

Section 7: HANDLING AND STORAGE

A. Precautions for safe handling
In case of exposure to environments exceeding the occupational exposure limit, wear a respirator in compliance with national legislation.

B. Conditions for safe storage (including any incompatibilities)
Keep container tightly closed in a dry and well-ventilated place

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

A. Exposure limit values, biological limit values, etc

Aluminum Hydroxide

ACGIH	TLV/TWA 8-hr: 1 mg/m³ (respirable fraction)
OSHA	TWA: 15 mg/m³ (Total Dust) 5 mg/m³ (Respirable Dust)

Zinc Molybdenum Oxide

Korea	TWA: 8-hour 0.5 mg/m³
Korea	STEL: Not established
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)

B. Engineering 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

C. Personal protective equipment

- **Eye protection** — If contact is likely, safety glasses with side shields are recommended.
- **Hand protection** — For prolonged or repeated skin contact use suitable protective gloves.
- **Body protection** — Wear suitable protective clothing.

Hygiene Measures

Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Solid Powder
Color	White to off-white
Odor	Odorless
Odor Threshold	No information available
pH:	8.4 (5% water suspension)
Melting Point / Melting Range	Not applicable
Freezing Point	Not applicable
Boiling Point	Not applicable
Flash Point	Non-combustible
Evaporation Rate	Not applicable
Flammability (solid, gas)	Not applicable
Upper flammability limit:	No data available
Lower flammability limit:	No data available
Vapor Pressure	Not applicable
Vapor Density	Not applicable
Relative Density	2.6 g/cm3, 20º C
Density	2.5 – 2.7 g/cm3, 20ºC

Water Solubility	11.7 mg/l , 25° C
Solubility in other solvents	No data available
Partition coefficient	Not applicable
Autoignition Temperature	Not applicable
Decomposition Temperature	No data available
Viscosity	Not applicable
Kinematic viscosity	No data available.

Section 10: STABILITY AND REACTIVITY

A. Stability and hazardous reaction potential

Stability	Stable under normal conditions
Hazardous reaction potential	None known

B. Conditions to avoid (e.g. static discharge, shock or Vibration, etc) Avoid creating dust. Incompatible materials.

C. Incompatible materials Strong oxidizing agents

D. Hazardous decomposition products No hazardous decomposition products are known.

Section 11: TOXICOLOGICAL INFORMATION

A. Information on likely routes of exposure

• **Mouth**	Not an expected route of exposure
• **Eyes**	Dust contact with the eyes can lead to mechanical irritation
• **Skin**	Prolonged skin contact may cause temporary irritation.

B. Information on health hazards

Aluminum Hydroxide

Oral LD50	> 2000 mg/kg Rat
Inhalation LC50	Rat > 2.3 mg/l (Al_2O_3) Aerosol Maximum attainable concentration

Zinc Molybdenum Oxide

Oral LD50	>10000 mg/kg Rat

Aluminum Hydroxide

IARC	Not Listed

Zinc Molybdenum Oxide

IARC	Not Listed
Target Organ Effects	Kidney (based on tubular degeneration/regeneration of male Han Wistar rats at

125 mg/kg/day)

Acute Toxicity	No data available
Respiratory Sensitization	Inhalation of dust in high concentration may cause irritation of respiratory system.
Serious eye damage/eye irritation	Dust may cause mechanical irritation to eyes
Skin Corrosion/Irritation	Prolonged or repeated contact may dry skin and cause irritation
Skin Sensitization	Not a skin sensitizer
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.
Mixture versus substance information	Mixture.

Section 12: ECOLOGICAL INFORMATION

A. Ecotoxicity

Hazardous to the aquatic environment, acute hazard	Not classified Avoid runoff to waterways and sewers
Hazardous to the aquatic environment, long-term hazard	Harmful to aquatic life with long lasting effects

B. Persistence/degradability No data available

C. Bioaccumulative potential No data available

D. Mobility in soil No data available

E. Other adverse effects No data available

Section 13: DISPOSAL CONSIDERATIONS

A. Method of disposal
Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose in accordance with all applicable regulations.

B. Disposal considerations (including disposal of contaminated containers or packaging) Disposal should be in accordance with applicable regional, national and local laws and regulations

Section 14: TRANSPORT INFORMATION

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

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
Subsidiary Risk	-
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

A. Method of disposal
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B. Disposal considerations (including disposal of contaminated containers or packaging) Disposal should be in accordance with applicable regional, national and local laws and regulations

Section 15: REGULATORY INFORMATION

National Regulations

Aluminum Hydroxide

CAS Number	21645-51-2
Weight-%	> 75
Korean GHS Classification	Not classified

Zinc Molybdenum Oxide

CAS Number	22914-58-5 61583-60-6
Weight-%	< 25
Korean GHS Classification	Acute Tox. 4, H332 STOT RE 2, H373 Aquatic Acute 1, H400 Aquatic Chronic 2, H411

Other domestic and foreign regulations

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
Aluminum Hydroxide	21645-51-2	244-492-7	01-2119529246-39	Y	Y	Y	(1)-17 (ENCS); ISHL	KE-00980	Y	Y	Y	Y	A
Zinc Molybdenum Oxide	22914-58-5 61583-60-6	245-322-4	01-2120800481-68-0000	N	Y: DSL-22914-58-5 NDSL: 61583-60-6	Y	(1)-781 (ENCS)(ISHL)	KE-11910	Y: (MO-generics)	Y	Y	Y	A

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

Section 16: OTHER INFORMATION

A. Source of Information

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
PNEC (Predicted No Effect Concentration)
TSCA (Toxic Substances Control Act)
GHS (Globally Harmonized System)

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C. Number of revisions and Date of most recent revision 1.2.1

D. Other

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End of Safety Data Sheet