CLEAN METHANE SYSTEMS LLC

Address:
19125 SW 125th CT.
Tualatin, OR 97062

Phone: 503-374-9709
Fax: 503-946-3226
Email: info@methanesys.com

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EMERGENCY CONTACT: The safety coordinator can be reached at (503) 374-9709 during business hours M-F (8:30 a.m. to 5:00 p.m. Pacific Time). Outside of normal business hours call and leave message. For medical emergencies contact local medical emergency providers.

SECTION I - SUBSTANCE IDENTIFICATION

Product Names: HOX™ Types MDHX, DMHX, DDHX, EEHX, EFHX
Synonyms: Modified Silica Gel, Amorphous Silica, gel form
CAS No.: 63231-67-4
Molecular Weight: Not applicable.
Chemical Formula: SiO_2 and $Al_2SiO_3 \cdot xH_2O$
Revision No.: 002 / Revision Type: Contact Information Update only / Revision Date: 10/14/2008

SECTION II – COMPOSITION/INGREDIENTS

Ingredient	CAS No	Percent	Hazardous
Silica Gel, Amorphous	63231-67-4	45% to 99%	No
Aluminum Silicate, Amorphous	l327-36-2	45% to 99%	No
Water	NA	1% to 2%	No

SECTION III - HAZARDS IDENTIFICATION

Emergency Overview
Dust may cause irritation to skin, eyes, and respiratory tract.
Lab Protective Equip: GOGGLES; LAB COAT; VENT HOOD; PROPER GLOVES
Storage Color Code: Orange (General Storage)

Potential Health Effects
This product contains synthetic amorphous silica. It does not contain nor should be confused with crystalline silica products such as quartz, or with diatomaceous earth or other naturally occurring forms of amorphous silica that frequently contain crystalline forms.

Inhalation (Dust):
May cause dryness and irritation to mucous membranes, nose, and throat. Symptoms may include coughing, sore throat, and wheezing.

Ingestion:
No adverse effects expected.

Skin Contact:
May cause irritation with dryness and abrasion.

Eye Contact:
May cause irritation, redness and pain.

Chronic Exposure:
Repeated exposure may cause symptoms similar to those listed for acute effects. Synthetic amorphous silica does not produce silicosis. Prolonged exposure to cobalt has been shown to cause cancer in laboratory animals.

Aggravation of Pre-existing Conditions:
No information found.

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SECTION IV – FIRST AID MEASURES

Inhalation:
Remove to fresh air. Get medical attention for any breathing difficulty.

Ingestion:
Give several glasses of water to drink to dilute. If large amounts were swallowed, get medical advice.

Skin Contact:
Immediately flush skin with plenty of soap and water for at least 15 minutes. Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention if irritation develops.

Eye Contact:
Immediately flush eyes with plenty of water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get medical attention if irritation persists.

SECTION V – FIRE FIGHTING MEASURES

Fire:
Not considered to be a fire hazard.

Explosion:
Not considered to be an explosion hazard.

Fire Extinguishing Media:
Use any means suitable for extinguishing surrounding fire.

Special Information:
Use protective clothing and breathing equipment appropriate for the surrounding fire.

SECTION VI – ACCIDENTAL RELEASE MEASURES

Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8.
Spills: Sweep up and containerize for reclamation or disposal. Vacuuming or wet sweeping may be used to avoid dust dispersal. US Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities. The toll free number for the US Coast Guard National Response Center is (800) 424-8802.

SECTION VII – HANDLING AND STORAGE

Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage.
When pouring into a container of flammable liquid, ground both containers electrically to prevent a static electric spark. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product.

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SECTION VIII – EXPOSURE CONTROLS / PERSONAL PROTECTION

Airborne Exposure Limits:
Silica (synthetic, amorphous):
- OSHA Permissible Exposure Limit (PEL) -80/(%SiO_2) mg/m3 (TWA) for amorphous silica, including natural diatomaceous earth.
- ACGIH Threshold Limit Value (TLV) -10 mg/m_3 (TWA) for amorphous precipitated silica and amorphous silica gel.

Ventilation System:
A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.

Personal Respirators (NIOSH Approved):
If the exposure limit is exceeded and engineering controls are not feasible, a half face piece particulate respirator (NIOSH type N95 or better filters) may be worn for up to ten times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest.. A full-face piece particulate respirator (NIOSH type N100 filters) may be worn up to 50 times the exposure limit, or the maximum use concentration specified by the appropriate regulatory agency, or respirator supplier, whichever is lowest. If oil particles (e.g. lubricants, cutting fluids, glycerine, etc.) are present, use a NIOSH type R or P filter. For emergencies or instances where the exposure levels are not known, use a full-face piece positive-pressure, air-supplied respirator. WARNING: Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.

Skin Protection:
Wear protective gloves and clean body-covering clothing.

Eye Protection:
Use chemical safety goggles. Maintain eye wash fountain and quick-drench facilities in work area.

SECTION IX – PHYSICAL AND CHEMICAL PROPERTIES

Appearance:
Clear, Milky White, White or Gray hard spheres.
Odor:
Odorless.
Solubility:
Silica gel base is insoluble in water.
Specific Gravity:
1.8 to 2.1
pH:
6.5-7.5 (in 5% slurry)
% Volatiles by volume @ 21C (70F): 0
Boiling Point: N/A
Melting Point: N/A
Vapor Density (Air=1): N/A
Vapor Pressure (mm Hg): N/A
Evaporation Rate (BuAc=1): N/A

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SECTION X – STABILITY AND REACTIVITY

Stability:
Stable under ordinary conditions of use and storage.

Hazardous Decomposition Products:
Oxides of carbon and silicon may be formed when heated to decomposition.

Hazardous Polymerization:
Will not occur.

Incompatibilities:
Reacts with hydrogen fluoride, fluorine, oxygen difluoride, chlorine trifluoride, strong acids, strong bases, and oxidizers.

Conditions to Avoid:
Moisture, extreme heat, and incompatibles.

SECTION XI – TOXICOLOGY INFORMATION

Toxicological Data:
No LD50/LC50 information found relating to normal routes of occupational exposure.
Carcinogenicity:
None of the ingredients in this product have been shown to cause cancer in laboratory animals.

Cancer Lists:

Ingredient	Known	NTP Carcinogen Anticipated	IARC Category
Silica Gel (63231-67-4)	No	No	None
Aluminum Silicate (I327-36-2)	No	No	None

SECTION XII – ECOLOGICAL INFORMATION

Environmental Fate:
For Silica Gel (synthetic amorphous): When released into the soil, this material is not expected to biodegrade. When released into water, this material is not expected to biodegrade.

Environmental Toxicity:
For Silica Gel (synthetic amorphous): This material is not expected to be toxic to aquatic life.

SECTION XIII – DISPOSAL CONSIDERATIONS

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

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SECTION XIV – TRANSPORT INFORMATION

Not regulated.

SECTION XV – REGULATORY INFORMATION

--------\Chemical Inventory Status - Part 1\----------

Ingredient	TSCA	EC	Japan	Australia
Silica Gel (63231-67-4)	Yes	No	No	Yes
Aluminum Silicate, Amorphous (l327-36-2)	---	---	---	---

--------\Chemical Inventory Status - Part 2\----------

--Canada--

Ingredient	Korea	DSL	NDSL	Phil.
Silica Gel (63231-67-4)	Yes	Yes	No	Yes
Aluminum Silicate, Amorphous (l327-36-2)	---	---	---	---

--------\Federal, State & International Regulations - Part 1\----------

	---SARA 302---		-----SARA 313------	
Ingredient	RQ	TPQ	List	Chem. Catg.
Silica Gel (63231-67-4)	No	No	No	No
Aluminum Silicate, Amorphous (l327-36-2)	---	---	---	---

--------\Federal, State & International Regulations - Part 2\----------

Ingredient	-CERCLA-	-RCRA-261.33	-TSCA 8(d)
Silica Gel (63231-67-4)	No	No	No
Aluminum Silicate, Amorphous (l327-36-2)	---	---	---

Chemical Weapons Convention: No TSCA 12(b): No CDTA: No
SARA 311/312: Acute: Yes Chronic: Yes Fire: No Pressure: No
Reactivity: No (Mixture / Solid)

Australian Hazchem Code: None allocated.

Poison Schedule: None allocated.

WHMIS:
This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

SECTION XVI – OTHER INFORMATION

NFPA Ratings: Health: **1** Flammability: **0** Reactivity: **0**

Label Hazard Warning:
CAUTION! MAY CAUSE IRRITATION TO SKIN, EYES, AND RESPIRATORY TRACT.

Label Precautions:
Avoid contact with eyes, skin and clothing.
Avoid breathing dust.
Keep container closed.
Use with adequate ventilation.
Wash thoroughly after handling.

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Label First Aid:
If inhaled, remove to fresh air. Get medical attention for any breathing difficulty. In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes. Get medical attention if irritation develops or persists.

Product Use:
Gas Treatment.

Revision Information:
No Changes.

Disclaimer:
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