MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

MATHESON TRI-GAS, INC.
150 Allen Road Suite 302
Basking Ridge, New Jersey 07920
Emergency Contact:
CHEMTREC 1-800-424-9300
Information: 1-800-416-2505

SUBSTANCE: NANOCHER(R) OMX (ORGANOMETAL RESIN)

TRADE NAMES/SYNONYMS:
MATNE514

PRODUCT USE: For Use with Gases: Inert (nitrogen, argon, helium, neon, xenon, krypton); Hydrocarbons (methane); Halogenated Gases (fluoroethane); hydrogen; and gas mixtures of the above constituent gases. As a service to our customers, Matheson Gas Products has identified this Material Safety Data Sheet with the intended gas for which the accompanying purifier will be used. The data herein is reflective of the purification media, as shipped under an argon pressure of 5-15 psig. Once the purifier is installed and exposed to the intended process gas, the MSDS for the process gas must also be consulted in conjunction with this MSDS to determine the appropriate hazards.

CREATION DATE: Mar 27 1998
REVISION DATE: Dec 11 2008

2. COMPOSITION, INFORMATION ON INGREDIENTS

COMPONENT: PROPRIETARY ORGANOLITHIUM POLYMER
CAS NUMBER: Not assigned.
PERCENTAGE: 98-99

COMPONENT: LITHIUM HYDRIDE
CAS NUMBER: 7580-67-8
PERCENTAGE: 1-2

3. HAZARDS IDENTIFICATION

NFPA RATINGS (SCALE 0-4): HEALTH=3  FIRE=2  REACTIVITY=2

EMERGENCY OVERVIEW:
PHYSICAL FORM: Small black beads encased in a stainless steel cylinder under 5-15 psig
inert gas pressure.

**ODOR:** odorless

**MAJOR HEALTH HAZARDS:** There are no expected signs or symptoms of overexposure in the workplace. The Nanochem (R) OMX purification system is sold as a sealed unit and no occupational exposure to the media is expected. In case of an accidental spill of the contents, the signs and symptoms below may be seen.

**POTENTIAL HEALTH EFFECTS:**

**INHALATION:**
**SHORT TERM EXPOSURE:** burns
**LONG TERM EXPOSURE:** same as effects reported in short term exposure

**SKIN CONTACT:**
**SHORT TERM EXPOSURE:** burns
**LONG TERM EXPOSURE:** same as effects reported in short term exposure

**EYE CONTACT:**
**SHORT TERM EXPOSURE:** burns
**LONG TERM EXPOSURE:** same as effects reported in short term exposure

**INGESTION:**
**SHORT TERM EXPOSURE:** burns
**LONG TERM EXPOSURE:** same as effects reported in short term exposure

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**4. FIRST AID MEASURES**

**INHALATION:** It is unlikely that emergency treatment will be required. However, in case of contact with media remove to fresh air. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen. Maintain airway, blood pressure, and respiration. Keep warm and at rest. Get medical attention immediately.

**SKIN CONTACT:** It is unlikely that emergency treatment will be required. However, in case of contact with media promptly wash with soap and running water. Remove contaminated clothing. Wash clothing before reuse. Cover affected area securely with sterile, loose-fitting dressing. Treat symptomatically and supportively. Get medical attention immediately.

**EYE CONTACT:** It is unlikely that emergency treatment will be required. However, in case of contact with media, immediately flush with plenty of low pressure water for at least 20 minutes. Remove any contact lenses to ensure thorough flushing. Get immediate medical attention.

**INGESTION:** The system is sold as a sealed unit and exposure to the compound via ingestion of media is not expected. If ingestion does occur, call a physician. Avoid gastric lavage or emesis. Give large amounts of water or milk. Repeat if vomiting occurs. Never make an unconscious person vomit or drink fluids. If vomiting occurs, keep head lower than hips to help prevent aspiration. Maintain airway and respiration. Treat symptomatically and supportively. Get medical attention immediately.
5. FIRE FIGHTING MEASURES

FIRE AND EXPLOSION HAZARDS: Negligible fire hazard as long as the container is not punctured or a wrong gas such as pure oxygen is not accidentally piped to the canister.

EXTINGUISHING MEDIA: regular dry chemical, dry sand, lime, soda ash

Use extinguishers rated for Class D fires, such as Ansul Met-L-Kyl (TM).

FIRE FIGHTING: Do not use water. Do not use foam. Move container from fire area if it can be done without risk. Avoid inhalation of container content or their combustion by-products. Contents will react with moisture and carbon dioxide or oxygen in air to release flammable hydrogen gas and a temperature rise sufficient to char and possibly ignite oxygen and combustible materials.

6. ACCIDENTAL RELEASE MEASURES

OCCUPATIONAL RELEASE:
Avoid heat, flames, sparks and other sources of ignition. Do not touch spilled caustic contents. Stop leak if possible without personal risk. Do not get water directly on container contents. Small spills: Collect material into suitable, loosely covered container for disposal. Keep unnecessary people away, isolate hazard area and deny entry. Stay upwind and keep out of low areas.

7. HANDLING AND STORAGE

STORAGE: Store and handle in accordance with all current regulations and standards. See original container for storage recommendations. Keep separated from incompatible substances. Do not store or operate at temperatures above 70 C (158 F).

HANDLING: No special handling precautions during normal use. Do not open the system to the atmosphere. Do not puncture container.

8. EXPOSURE CONTROLS, PERSONAL PROTECTION

EXPOSURE LIMITS:
NANOCHEM(R) OMX (ORGANOMETAL RESIN):
No occupational exposure limits established.

VENTILATION: Not required during normal system use. In the event of system rupture, media removal from the system, or exposure to the media: Provide local exhaust ventilation system. Ensure compliance with applicable exposure limits.
EYE PROTECTION: Not required during normal system use. In the event of system rupture, media removal from the system, or exposure to the media: Wear splash resistant safety goggles with a faceshield. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

CLOTHING: Not required during normal system use. In the event of system rupture, media removal from the system, or exposure to the media: Wear appropriate chemical resistant clothing.

GLOVES: Not required during normal system use. In the event of system rupture, media removal from the system, or exposure to the media: Wear appropriate chemical resistant gloves.

RESPIRATOR: Not required during normal system use. In the event of system rupture, media removal from the system, or exposure to the media:
The following respirators and maximum use concentrations are drawn from NIOSH and/or OSHA.

0.25 mg/m³
Any air-purifying respirator equipped with an N100, R100, or P100 filter (including N100, R100, and P100 filtering facepieces) except quarter-mask respirators.
Any supplied-air respirator.

0.5 mg/m³
Any supplied-air respirator operated in a continuous-flow mode.
Any air-purifying, full-facepiece respirator equipped with an N100, R100, or P100 filter.
Any powered, air-purifying respirator with a high-efficiency particulate filter.
Any self-contained breathing apparatus with a full facepiece.
Any supplied-air respirator with a full facepiece.
Emergency or planned entry into unknown concentrations or IDLH conditions -
Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode.
Any supplied-air respirator with a full facepiece that is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained breathing apparatus operated in pressure-demand or other positive-pressure mode.

Escape -
Any air-purifying, full-facepiece respirator equipped with an N100, R100, or P100 filter.
Any appropriate escape-type, self-contained breathing apparatus.

For Unknown Concentrations or Immediately Dangerous to Life or Health -
Any supplied-air respirator with a full facepiece that is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained breathing apparatus operated in pressure-demand or other positive-pressure mode.
Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: solid
PHYSICAL FORM: Small black beads encased in a stainless steel cylinder under 5-15 psig inert gas pressure.
ODOR: odorless
BOILING POINT: Not applicable
10. STABILITY AND REACTIVITY

REACTIVITY: None during normal use. Contents may react with moisture, oxygen, and carbon dioxide in air to release flammable hydrogen gas and a temperature rise sufficient to char and possibly ignite combustible materials.

CONDITIONS TO AVOID: None during normal use. Avoid contact with air. Keep dry. Keep out of water supplies and sewers.

INCOMPATIBILITIES: None during normal use; contents are incompatible with acids, oxidizing materials, water, carbon dioxide, oxygen, hydrocarbons.

HAZARDOUS DECOMPOSITION:
Thermal decomposition products or contact with water or moisture: hydrogen, oxygen, hydrocarbons, lithium compounds

POLYMERIZATION: Contents will not polymerize.

11. TOXICOLOGICAL INFORMATION

LITHIUM HYDRIDE:
TOXICITY DATA: 77500 ug/kg oral-rat LD50
LOCAL EFFECTS:
Corrosive: inhalation, skin, eye, ingestion
ACUTE TOXICITY LEVEL:
Toxic: ingestion
MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: eye disorders, respiratory disorders, skin disorders and allergies

12. ECOLOGICAL INFORMATION

Not available
13. DISPOSAL CONSIDERATIONS

Dispose in accordance with all applicable regulations. If the purification system is ever exposed to toxic gases or gases containing toxic elements, the media may contain these toxic materials, or reaction products thereof, and exhibit the characteristic of toxicity as defined in the hazardous waste regulations 40 CFR 261 Subpart C or D. System Recharge: The customer may consult Matheson for the disposal and recharge of the system. Systems used to purify reactive or flammable gases must be thoroughly purged with an inert gas prior to disposal.

14. TRANSPORT INFORMATION

U.S. DOT 49 CFR 172.101:
PROPER SHIPPING NAME: Lithium hydride mixture
ID NUMBER: UN1414
HAZARD CLASS OR DIVISION: 4.3
PACKING GROUP: I
LABELING REQUIREMENTS: 4.3
QUANTITY LIMITATIONS:
PASSenger AIRCRAFT OR RAILCAR: Forbidden
CARGO AIRCRAFT ONLY: 15 kg

CANADIAN TRANSPORTATION OF DANGEROUS GOODS:
SHIPPING NAME: Lithium hydride mixture
UN NUMBER: UN1414
CLASS: 4.3
PACKING GROUP/CATEGORY: I

15. REGULATORY INFORMATION

U.S. REGULATIONS:
CERCLA SECTIONS 102a/103 HAZARDOUS SUBSTANCES (40 CFR 302.4): Not regulated.

SARA TITLE III SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355 Subpart B):
LITHIUM HYDRIDE: 100 LBS TPQ

SARA TITLE III SECTION 304 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355 Subpart C):
LITHIUM HYDRIDE: 100 LBS RQ

SARA TITLE III SARA SECTIONS 311/312 HAZARDOUS CATEGORIES (40 CFR 370 Subparts B and C):
ACUTE: Yes
CHRONIC: No
FIRE: Yes
REACTIVE: Yes
SUDDEN RELEASE: No


STATE REGULATIONS:
California Proposition 65: Not regulated.

CANADIAN REGULATIONS:
WHMIS CLASSIFICATION: Not determined.

NATIONAL INVENTORY STATUS:
U.S. INVENTORY (TSCA): Not listed on inventory.

TSCA 12(b) EXPORT NOTIFICATION: Not listed.

CANADA INVENTORY (DSL/NDSL): Not determined.

16. OTHER INFORMATION

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