

MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

MATHESON TRI-GAS, INC.
959 ROUTE 46 EAST
PARSIPPANY, NEW JERSEY 07054-0624

EMERGENCY CONTACT:
CHEMTREC 1-800-424-9300
INFORMATION CONTACT:
973-257-1100

SUBSTANCE: NANOCHEM(R) OMA

TRADE NAMES/SYNONYMS:
MATNE516

PRODUCT USE: For Use with Gas: Ammonia (NH₃)., 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., Since the purifier is factory pre-conditioned with the intended gas prior to shipment to the customer location, the MSDS for the intended gas must also be consulted in conjunction with this MSDS to determine the appropriate hazards.

CREATION DATE: Mar 27 1998
REVISION DATE: Mar 18 2004

2. COMPOSITION, INFORMATION ON INGREDIENTS

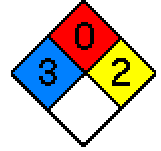
COMPONENT: ORGANOLITHIUM POLYMER
CAS NUMBER: Not assigned.
PERCENTAGE: 94-97

COMPONENT: LITHIUM AMIDE
CAS NUMBER: 7782-89-0
PERCENTAGE: 3-6

COMPONENT: AMMONIA, ANHYDROUS
CAS NUMBER: 7664-41-7
PERCENTAGE: <0.1

3. HAZARDS IDENTIFICATION

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



EMERGENCY OVERVIEW:

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

ODOR: pungent odor

MAJOR HEALTH HAZARDS: There are no expected signs or symptoms of overexposure in the workplace. The purification system is sold as a sealed unit and no worker exposure to the media is expected. In case of an accidental spill, 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

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. If burns occur from exposure to hydrogen chloride, proceed with the following: 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 compound, immediately flush with plenty of low pressure water for at least 20 minutes. Remove any contact lenses to ensure thorough flushing. Call a physician.

INGESTION: The system is sold as a sealed unit and exposure to the compound via ingestion 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.

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

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 material or combustion by-products. Reacts with moisture and carbon dioxide in air to release flammable hydrogen gas and a temperature rise sufficient to char and possibly ignite combustible materials.

6. ACCIDENTAL RELEASE MEASURES

OCCUPATIONAL RELEASE:

Avoid heat, flames, sparks and other sources of ignition. Do not touch spilled material. Stop leak if possible without personal risk. Do not get water directly on material. 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. Notify Local Emergency Planning Committee and State Emergency Response Commission for release greater than or equal to RQ (U.S. SARA Section 304). If release occurs in the U.S. and is reportable under CERCLA Section 103, notify the National Response Center at (800)424-8802 (USA) or (202)426-2675 (USA).

7. HANDLING AND STORAGE

STORAGE: Store and handle in accordance with all current regulations and standards. Store and handle in accordance with all current regulations and standards. SARA Section 303 requires facilities storing a material with a TPQ to participate in local emergency response planning (U.S. EPA 40 CFR 355.30). See original container for storage recommendations. Keep separated from incompatible substances. Do not store or operate at temperatures above 70 C (158 F).

HANDLING: Subject to handling regulations: U.S. OSHA 29 CFR 1910.119. Use methods to minimize dust.

8. EXPOSURE CONTROLS, PERSONAL PROTECTION

EXPOSURE LIMITS:

NANOCHEM(R) OMA:

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: The following respirators and maximum use concentrations are drawn from NIOSH and/or OSHA.

250 ppm

Any chemical cartridge respirator with cartridge(s) providing protection against this substance.
Any supplied-air respirator.

300 ppm

Any supplied-air respirator operated in a continuous-flow mode.
Any powered, air-purifying respirator with cartridge(s) providing protection against this substance.
Any chemical cartridge respirator with a full facepiece and cartridge(s) providing protection against this substance.
Any air-purifying respirator with a full facepiece and a canister providing protection against this substance.
Any self-contained breathing apparatus with a full facepiece.
Any supplied-air respirator with a full facepiece.

Escape -

Any air-purifying respirator with a full facepiece and a canister providing protection against this substance.
Any appropriate escape-type, self-contained breathing apparatus.

For Unknown Concentrations or Immediately Dangerous to Life or Health -

Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply.
Any self-contained breathing apparatus with a full facepiece.

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: pungent odor

BOILING POINT: Not applicable

MELTING POINT: Not available

VAPOR PRESSURE: negligible

VAPOR DENSITY: Not applicable

SPECIFIC GRAVITY (water=1): 0.36 (resin)

WATER SOLUBILITY: reacts

PH: basic in solution

VOLATILITY: negligible

ODOR THRESHOLD: 1-5 ppm (AMMONIA, ANHYDROUS)
EVAPORATION RATE: Not applicable
COEFFICIENT OF WATER/OIL DISTRIBUTION: Not available

10. STABILITY AND REACTIVITY

REACTIVITY: Reacts with moisture 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: Avoid contact with air. Keep dry. Keep out of water supplies and sewers.

INCOMPATIBILITIES: acids, oxidizing materials

HAZARDOUS DECOMPOSITION:

Thermal decomposition products or contact with water or moisture: ammonia

POLYMERIZATION: Will not polymerize.

11. TOXICOLOGICAL INFORMATION

LITHIUM AMIDE:

LOCAL EFFECTS:

Corrosive: inhalation, skin, eye, ingestion

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: heart or cardiovascular disorders, kidney disorders, metabolic disorders

ADDITIONAL DATA: May impair performance of tasks requiring alertness.

AMMONIA, ANHYDROUS:

TOXICITY DATA:

2000 ppm/4 hour(s) inhalation-rat LC50

LOCAL EFFECTS:

Corrosive: inhalation, skin, eye, ingestion

ACUTE TOXICITY LEVEL:

Toxic: inhalation

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: eye disorders, respiratory disorders, skin disorders and allergies

TUMORIGENIC DATA: Available.

MUTAGENIC DATA: Available.

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 PBU 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: Corrosive solids, water-reactive, n.o.s. (LITHIUM AMIDE, AMMONIA, ANHYDROUS)

ID NUMBER: UN3096

HAZARD CLASS OR DIVISION: 8

PACKING GROUP: II

LABELING REQUIREMENTS: 8; 4.3



CANADIAN TRANSPORTATION OF DANGEROUS GOODS:

SHIPPING NAME: Corrosive solid, water-reactive, n.o.s. (LITHIUM AMIDE, AMMONIA, ANHYDROUS)

UN NUMBER: UN3096

CLASS: 8; 4.3

PACKING GROUP/RISK GROUP: II

15. REGULATORY INFORMATION

U.S. REGULATIONS:

CERCLA SECTIONS 102a/103 HAZARDOUS SUBSTANCES (40 CFR 302.4):

AMMONIA, ANHYDROUS: 100 LBS RQ

SARA TITLE III SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355.30): Not regulated.

SARA TITLE III SECTION 304 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355.40): Not regulated.

SARA TITLE III SARA SECTIONS 311/312 HAZARDOUS CATEGORIES (40 CFR 370.21):

ACUTE: Yes

CHRONIC: No

FIRE: No

REACTIVE: Yes

SUDDEN RELEASE: No

SARA TITLE III SECTION 313 (40 CFR 372.65): Not regulated.

OSHA PROCESS SAFETY (29CFR1910.119):
AMMONIA, ANHYDROUS: 10000 LBS TQ

STATE REGULATIONS:

California Proposition 65: Not regulated.

CANADIAN REGULATIONS:

WHMIS CLASSIFICATION: Not determined.

NATIONAL INVENTORY STATUS:

U.S. INVENTORY (TSCA): Listed on inventory.

TSCA 12(b) EXPORT NOTIFICATION: Not listed.

CANADA INVENTORY (DSL/NDSL): Not determined.

16. OTHER INFORMATION

MSDS SUMMARY OF CHANGES

14. TRANSPORT INFORMATION

15. REGULATORY INFORMATION

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