

## Safety Data Sheet

Material Name: NANOCHEM® OMA

SDS ID: MATNE516

### Section 1 - PRODUCT AND COMPANY IDENTIFICATION

**Material Name**

NANOCHEM® OMA

**Product Description**

For Use with Gas: Ammonia (NH<sub>3</sub>). As a service to our customers, Matheson Gas Products has identified this 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 SDS for the intended gas must also be consulted in conjunction with this SDS to determine the appropriate hazards.

**Product Use**

Industrial and Specialty Gas Applications.

**Restrictions on Use**

None known.

**Details of the supplier of the safety data sheet**

MATHESON TRI-GAS, INC.

909 Lake Carolyn Parkway

Suite 1300

Irving, TX 75039

General Information: 1-800-416-2505

Emergency #: 1-800-424-9300 (CHEMTREC)

Outside the US: 703-527-3887 (Call collect)

### Section 2 - HAZARDS IDENTIFICATION

**Classification in accordance with paragraph (d) of 29 CFR 1910.1200.**

Skin Corrosion/Irritation - Category 2

Serious Eye Damage/Eye Irritation - Category 1

Respiratory Sensitization - Category 1A

**GHS Label Elements**

**Symbol(s)**



**Signal Word**

Danger

**Hazard Statement(s)**

Causes skin irritation.

Causes serious eye damage.

May cause allergy or asthma symptoms or breathing difficulties if inhaled.

**Precautionary Statement(s)**

**Prevention**

Wear protective gloves/protective clothing/eye protection/face protection.

Avoid breathing dust/fume/gas/mist/vapors/spray.

Wear respiratory protection.

Wash thoroughly after handling.

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**Response**

IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing and wash before reuse.

Immediately call a POISON CENTER or doctor.

Specific treatment (see label).

**Storage**

None needed according to classification criteria.

**Disposal**

Dispose in accordance with all applicable regulations.

**Other 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.

**Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS**

CAS	Component Name	Percent
Not Available	ORGANOLITHIUM POLYMER	94 - 97
7782-89-0	LITHIUM AMIDE	3 - 6
7664-41-7	AMMONIA, ANHYDROUS	<0.1

**Section 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**

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.

**Eyes**

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.

**Most Important Symptoms/Effects**

**Acute**

no information on significant adverse effects.

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**Delayed**

no information on significant adverse effects.

**Indication of any immediate medical attention and special treatment needed**

Treat symptomatically and supportively.

### **Section 5 - FIRE FIGHTING MEASURES**

**Extinguishing Media**

**Suitable Extinguishing Media**

regular dry chemical, dry sand, Lime, soda ash

**Unsuitable Extinguishing Media**

Do not use water or foam.

**Special Hazards Arising from the Chemical**

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.

**Fire Fighting Measures**

Do not use water or foam. Move container from fire area if it can be done without risk. Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Do not get water inside container. Cool containers with water spray until well after the fire is out. Withdraw immediately in case of rising sound from venting safety device or any discoloration of tanks due to fire. 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.

**Special Protective Equipment and Precautions for Firefighters**

Wear full protective fire fighting gear including self contained breathing apparatus (SCBA) for protection against possible exposure.

### **Section 6 - ACCIDENTAL RELEASE MEASURES**

**Personal Precautions, Protective Equipment and Emergency Procedures**

Wear personal protective clothing and equipment, see Section 8.

**Methods and Materials for Containment and Cleaning Up**

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. Do not get water inside container. 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).

**Environmental Precautions**

Avoid release to the environment.

### **Section 7 - HANDLING AND STORAGE**

**Precautions for Safe Handling**

No special handling precautions during normal use. Do not open the system to the atmosphere. Do not puncture container. Subject to handling regulations: U.S. OSHA 29 CFR 1910.119.

**Conditions for Safe Storage, Including any Incompatibilities**

None needed according to classification criteria.

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

**Incompatible Materials**

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

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION
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**Component Exposure Limits**

<b>AMMONIA, ANHYDROUS</b>	<b>7664-41-7</b>
ACGIH:	25 ppm TWA
	35 ppm STEL
NIOSH:	25 ppm TWA ; 18 mg/m3 TWA
	35 ppm STEL ; 27 mg/m3 STEL
	300 ppm IDLH
Europe:	20 ppm TWA ; 14 mg/m3 TWA
	50 ppm STEL ; 36 mg/m3 STEL
OSHA (US):	50 ppm TWA ; 35 mg/m3 TWA
Mexico:	25 ppm TWA [VLE-PPT ]
	35 ppm STEL [PPT-CT ]

**ACGIH - Threshold Limit Values - Biological Exposure Indices (BEI)**

There are no biological limit values for any of this product's components.

**Engineering Controls**

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.

**Individual Protection Measures, such as Personal Protective Equipment**

**Eye/face 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.

**Skin Protection**

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.

**Respiratory Protection**

ammonia: 250 ppm. Any air-purifying half-mask respirator equipped with cartridge(s) providing protection against the compound of concern. 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 air-purifying full-facepiece respirator equipped with cartridge(s) providing protection against the compound of concern. Any air-purifying full-facepiece respirator (gas mask) with a chin-style, front-mounted or back-mounted canister providing protection against the compound of concern. 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

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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 (gas mask) with a chin-style, front-mounted or back-mounted canister providing protection against the compound of concern. Any appropriate escape-type, self-contained breathing apparatus. 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. The following respirators and maximum use concentrations are drawn from NIOSH and/or OSHA.

**Glove Recommendations**

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.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES			
<b>Appearance</b>	Small black beads encased in a stainless steel cylinder under 5-15 psig inert gas pressure	<b>Physical State</b>	solid
<b>Odor</b>	pungent odor	<b>Color</b>	black
<b>Odor Threshold</b>	1 - 5 ppm (Ammonia )	<b>pH</b>	(Basic in solution )
<b>Melting Point</b>	Not available	<b>Boiling Point</b>	Not available
<b>Boiling Point Range</b>	Not available	<b>Freezing point</b>	Not available
<b>Evaporation Rate</b>	Not available	<b>Flammability (solid, gas)</b>	Not flammable
<b>Autoignition Temperature</b>	Not available	<b>Flash Point</b>	(Not flammable )
<b>Lower Explosive Limit</b>	Not available	<b>Decomposition temperature</b>	Not available
<b>Upper Explosive Limit</b>	Not available	<b>Vapor Pressure</b>	(Negligible )
<b>Vapor Density (air=1)</b>	Not available	<b>Specific Gravity (water=1)</b>	0.36 (Resin )
<b>Water Solubility</b>	(Reacts )	<b>Partition coefficient: n-octanol/water</b>	Not available
<b>Viscosity</b>	Not available	<b>Kinematic viscosity</b>	Not available
<b>Solubility (Other)</b>	Not available	<b>Density</b>	Not available

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<b>Physical Form</b>	black solid	<b>Volatility</b>	(Negligible )
<b>Molecular Weight</b>	Not available		

### Section 10 - STABILITY AND REACTIVITY

**Chemical Stability**

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.

**Possibility of Hazardous Reactions**

Will not polymerize.

**Conditions to Avoid**

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

**Incompatible Materials**

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

**Hazardous decomposition products**

**Water or Moisture**

ammonia

### Section 11 - TOXICOLOGICAL INFORMATION

**Information on Likely Routes of Exposure**

**Inhalation**

This product is considered to be nonhazardous, however the following effects may occur as a result of damage to the product:: burns

**Skin Contact**

This product is considered to be nonhazardous, however the following effects may occur as a result of damage to the product:: burns

**Eye Contact**

This product is considered to be nonhazardous, however the following effects may occur as a result of damage to the product:: burns

**Ingestion**

This product is considered to be nonhazardous, however the following effects may occur as a result of damage to the product:: burns

**Acute and Chronic Toxicity**

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.

**Component Analysis - LD50/LC50**

The components of this material have been reviewed in various sources and the following selected endpoints are published:

**AMMONIA, ANHYDROUS (7664-41-7)**

Oral LD50 Rat 350 mg/kg (test substance administered in an aqueous solution )

Inhalation LC50 Rat 9850 mg/m3 1 h (males )

**Product Toxicity Data**

**Acute Toxicity Estimate**

Inhalation - Dust and Mist	> 5 mg/L
Oral	> 2000 mg/kg

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**Immediate Effects**

no information on significant adverse effects.

**Delayed Effects**

no information on significant adverse effects.

**Irritation/Corrosivity Data**

No data available.

**Respiratory Sensitization**

No data available.

**Dermal Sensitization**

No data available.

**Component Carcinogenicity**

None of this product's components are listed by ACGIH, IARC, NTP, DFG or OSHA.

**Germ Cell Mutagenicity**

No data available for the mixture.

**Tumorigenic Data**

No data available

**Reproductive Toxicity**

No data available for the mixture.

**Specific Target Organ Toxicity - Single Exposure**

No target organs identified.

**Specific Target Organ Toxicity - Repeated Exposure**

No target organs identified.

**Aspiration hazard**

No data available.

**Medical Conditions Aggravated by Exposure**

eye disorders, heart or cardiovascular disorders, respiratory disorders, kidney disorders, skin disorders and allergies, metabolic disorders

**Additional Data**

May impair performance of tasks requiring alertness.

**Section 12 - ECOLOGICAL INFORMATION**

**Component Analysis - Aquatic Toxicity**

<b>AMMONIA, ANHYDROUS</b>	<b>7664-41-7</b>
Fish:	LC50 96 h Cyprinus carpio 0.44 mg/L; LC50 96 h Lepomis macrochirus 0.26 - 4.6 mg/L; LC50 96 h Lepomis macrochirus 1.17 mg/L [flow-through ]; LC50 96 h Pimephales promelas 0.73 - 2.35 mg/L; LC50 96 h Pimephales promelas 5.9 mg/L [static ]; LC50 96 h Poecilia reticulata >1.5 mg/L; LC50 96 h Poecilia reticulata 1.19 mg/L [static ]
Invertebrate:	LC50 48 h Daphnia magna 25.4 mg/L IUCLID

**Persistence and Degradability**

No data available.

**Bioaccumulative Potential**

No data available.

**Mobility**

No data available.

**Other Toxicity**

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No additional information is available.

### Section 13 - DISPOSAL CONSIDERATIONS

**Disposal Methods**

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.

**Component Waste Numbers**

The U.S. EPA has not published waste numbers for this product's components.

### Section 14 - TRANSPORT INFORMATION

**US DOT Information:**

**Shipping Name:** ALKALI METAL AMIDES

**Hazard Class:** 4.3

**UN/NA #:** UN1390

**Packing Group:** II

**Required Label(s):** 4.3

Marine pollutant

**IMDG Information:**

**Shipping Name:** ALKALI METAL AMIDE

**Hazard Class:** 4.3

**UN#:** UN1390

**Packing Group:** II

**Required Label(s):** 4.3

Marine pollutant

**International Bulk Chemical Code**

This material does not contain any chemicals required by the IBC Code to be identified as dangerous chemicals in bulk.

### Section 15 - REGULATORY INFORMATION

**U.S. Federal Regulations**

This material contains one or more of the following chemicals required to be identified under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65), CERCLA (40 CFR 302.4), TSCA 12(b), and/or require an OSHA process safety plan.

<b>AMMONIA, ANHYDROUS</b>	<b>7664-41-7</b>
SARA 302:	500 lb TPQ
SARA 313:	1 % de minimis concentration (includes anhydrous Ammonia and aqueous Ammonia from water dissociable Ammonium salts and other sources, 10% of total aqueous Ammonia is reportable under this listing )
CERCLA:	100 lb final RQ ; 45.4 kg final RQ
OSHA (safety):	10000 lb TQ (anhydrous ); 15000 lb TQ (solution ,>44% Ammonia by weight )



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SARA 304:	100 lb EPCRA RQ
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**SARA Section 311/312 (40 CFR 370 Subparts B and C) reporting categories**

Skin Corrosion/Irritation; Respiratory/Skin Sensitization; Serious Eye Damage/Eye Irritation

**U.S. State Regulations**

The following components appear on one or more of the following state hazardous substances lists:

Component	CAS	CA	MA	MN	NJ	PA
<b>LITHIUM AMIDE</b>	<b>7782-89-0</b>	No	No	No	Yes	No
<b>AMMONIA, ANHYDROUS</b>	<b>7664-41-7</b>	Yes	Yes	Yes	Yes	Yes

**California Safe Drinking Water and Toxic Enforcement Act (Proposition 65)**

Not listed under California Proposition 65.

**Component Analysis - Inventory**

**LITHIUM AMIDE (7782-89-0)**

US	CA	AU	CN	EU	JP - ENCS	JP - ISHL	KR KECI - Annex 1	KR KECI - Annex 2
Yes	DSL	Yes	Yes	EIN	Yes	Yes	Yes	No

KR - REACH CCA	MX	NZ	PH	TH-TECI	TW, CN	VN (Draft)
No	Yes	Yes	Yes	Yes	Yes	Yes

**AMMONIA, ANHYDROUS (7664-41-7)**

US	CA	AU	CN	EU	JP - ENCS	JP - ISHL	KR KECI - Annex 1	KR KECI - Annex 2
Yes	DSL	Yes	Yes	EIN	Yes	Yes	Yes	No

KR - REACH CCA	MX	NZ	PH	TH-TECI	TW, CN	VN (Draft)
Yes	Yes	Yes	Yes	Yes	Yes	Yes

**Section 16 - OTHER INFORMATION**

**NFPA Ratings**

Health: 1 Fire: 0 Instability: 2 Other:

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

**Summary of Changes**

Updated: 05/01/2015

**Key / Legend**

ACGIH - American Conference of Governmental Industrial Hygienists; ADR - European Road Transport; AU - Australia; BOD - Biochemical Oxygen Demand; C - Celsius; CA - Canada; CA/MA/MN/NJ/PA - California/Massachusetts/Minnesota/New Jersey/Pennsylvania\*; CAS - Chemical Abstracts Service; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CFR - Code of Federal Regulations (US); CLP - Classification, Labelling, and Packaging; CN - China; CPR - Controlled Products Regulations; DFG -

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Deutsche Forschungsgemeinschaft; DOT - Department of Transportation; DSD - Dangerous Substance Directive; DSL - Domestic Substances List; EC – European Commission; EEC - European Economic Community; EIN - European Inventory of (Existing Commercial Chemical Substances); EINECS - European Inventory of Existing Commercial Chemical Substances; ENCS - Japan Existing and New Chemical Substance Inventory; EPA - Environmental Protection Agency; EU - European Union; F - Fahrenheit; F - Background (for Venezuela Biological Exposure Indices); IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; ICAO - International Civil Aviation Organization; IDL - Ingredient Disclosure List; IDLH - Immediately Dangerous to Life and Health; IMDG - International Maritime Dangerous Goods; ISHL - Japan Industrial Safety and Health Law; IUCLID - International Uniform Chemical Information Database; JP - Japan; Kow - Octanol/water partition coefficient; KR KECI Annex 1 - Korea Existing Chemicals Inventory (KECI) / Korea Existing Chemicals List (KECL); KR KECI Annex 2 - Korea Existing Chemicals Inventory (KECI) / Korea Existing Chemicals List (KECL) , KR - Korea; LD50/LC50 - Lethal Dose/ Lethal Concentration; KR REACH CCA - Korea Registration and Evaluation of Chemical Substances Chemical Control Act; LEL - Lower Explosive Limit; LLV - Level Limit Value; LOLI - List Of Lists™ - ChemADVISOR's Regulatory Database; MAK - Maximum Concentration Value in the Workplace; MEL - Maximum Exposure Limits; MX – Mexico; Ne- Non-specific; NFPA - National Fire Protection Agency; NIOSH - National Institute for Occupational Safety and Health; NJTSR - New Jersey Trade Secret Registry; Nq - Non-quantitative; NSL – Non-Domestic Substance List (Canada); NTP - National Toxicology Program; NZ - New Zealand; OSHA - Occupational Safety and Health Administration; PEL- Permissible Exposure Limit; PH - Philippines; RCRA - Resource Conservation and Recovery Act; REACH- Registration, Evaluation, Authorisation, and restriction of Chemicals; RID - European Rail Transport; SARA - Superfund Amendments and Reauthorization Act; Sc - Semi-quantitative; STEL - Short-term Exposure Limit; TCCA – Korea Toxic Chemicals Control Act; TDG - Transportation of Dangerous Goods; TH-TECI - Thailand - FDA Existing Chemicals Inventory (TECI); TLV - Threshold Limit Value; TSCA - Toxic Substances Control Act; TW – Taiwan; TWA - Time Weighted Average; UEL - Upper Explosive Limit; UN/NA - United Nations /North American; US - United States; VLE - Exposure Limit Value (Mexico); VN (Draft) - Vietnam (Draft); WHMIS - Workplace Hazardous Materials Information System (Canada).

### **Other Information**

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