

## Safety Data Sheet

Material Name: NANOCHEM® MTX

SDS ID: 00226076

### Section 1 - PRODUCT AND COMPANY IDENTIFICATION

**Material Name**

NANOCHEM® MTX

**Synonyms**

NANOCHEM MTX; CORROSIVE GAS PURIFIER

**Product Description**

For use with inert, reactive, and corrosive gases, except reactive fluoride gases, such as F<sub>2</sub>, HF, or BF<sub>3</sub>. Suitable for use with halocarbons. Operating pressure: 0-150 psig or 0-650 psig depending upon purifier hardware design. The data herein are representative for the purification medium as shipped under an inert gas 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.

**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.**

None needed according to classification criteria.

**GHS Label Elements**

**Symbol(s)**

None needed according to classification criteria.

**Signal Word**

None needed according to classification criteria

**Hazard Statement(s)**

None needed according to classification criteria.

**Precautionary Statement(s)**

**Prevention**

None needed according to classification criteria.

**Response**

None needed according to classification criteria.

**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. In case of an accidental spill, the signs and symptoms below may be seen.

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### Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

CAS	Component Name	Percent
Proprietary	METAL OXIDES, TRADE SECRET	100

#### Component Related Regulatory Information

The chemical identity and/or percentage of composition is being withheld as a trade secret.

### Section 4 - FIRST AID MEASURES

#### Inhalation

If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. Get immediate medical attention.

#### Skin

Wash skin with soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention, if needed. Thoroughly clean and dry contaminated clothing and shoes before reuse.

#### Eyes

Flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention.

#### Ingestion

If swallowed, get medical attention.

#### Most Important Symptoms/Effects

##### Acute

no information on significant adverse effects.

##### Delayed

no information on significant adverse effects.

#### Note to Physicians

Treat symptomatically and supportively.

### Section 5 - FIRE FIGHTING MEASURES

#### Extinguishing Media

##### Suitable Extinguishing Media

Use extinguishing agents appropriate for surrounding fire.

##### Unsuitable Extinguishing Media

None known.

#### Special Hazards Arising from the Chemical

Negligible fire hazard.

#### Hazardous Combustion Products

miscellaneous decomposition products

#### Fire Fighting Measures

Move container from fire area if it can be done without risk. Cool containers with water spray until well after the fire is out. Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas.

#### 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

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Collect spilled material in appropriate container for disposal. If purifier has been exposed to process gas prior to release, refer to hazards associated with process gas before attempting to clean up spilled medium.

**Environmental Precautions**

Avoid release to the environment.

**Section 7 - HANDLING AND STORAGE**

**Precautions for Safe Handling**

No special handling precautions during normal use. Wash hands thoroughly after handling. Use methods to minimize dust.

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

None needed according to classification criteria.

Store and handle in accordance with all current regulations and standards. See original container for storage recommendations. Store at ambient temperatures with contents under dry inert gas pressure at 5 - 15 psig.

**Incompatible Materials**

Reactive fluoride gases, such as F<sub>2</sub>, HF, or BF<sub>3</sub>, will decompose the purifier medium and produce volatile metal fluorides, such as SiF<sub>4</sub>.

**Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION**

**Component Exposure Limits**

The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit. At this time, the other constituents have no known exposure limits.

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

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

**Engineering Controls**

Provide local exhaust ventilation system. Ensure compliance with applicable exposure limits.

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

**Eye/face protection**

Wear splash resistant safety goggles. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

**Skin Protection**

Wear appropriate chemical resistant clothing.

**Respiratory Protection**

Under conditions of frequent use or heavy exposure, respiratory protection may be needed. Respiratory protection is ranked in order from minimum to maximum. Consider warning properties before use. Any particulate respirator equipped with an N95, R95, or P95 filter (including N95, R95, and P95 filtering facepieces) except quarter-mask respirators. The following filters may also be used: N99, R99, P99, N100, R100 or P100. Any air-purifying full-facepiece respirator equipped with an N95, R95, or P95 filter. The following filters may also be used: N99, R99, P99, N100, R100 or P100. Any powered, air-purifying respirator with a high-efficiency particulate filter. Any powered, air-purifying respirator with a tight-fitting facepiece and a high-efficiency particulate filter. Any supplied-air respirator with a full facepiece that 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. Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode.

**Glove Recommendations**

Wear appropriate chemical resistant gloves.

**Section 9 - PHYSICAL AND CHEMICAL PROPERTIES**

<b>Appearance</b>	White pellets (compound) encased in a stainless	<b>Physical State</b>	solid
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	steel cylinder (canister) pressurized with an inert gas		
<b>Odor</b>	Not available	<b>Color</b>	white
<b>Odor Threshold</b>	Not available	<b>pH</b>	Not available
<b>pH Solution</b>	8 - 11 (Aqueous slurry )	<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>	(None )	<b>Lower Explosive Limit</b>	Not available
<b>Decomposition temperature</b>	Not available	<b>Upper Explosive Limit</b>	Not available
<b>Vapor Pressure</b>	Not available	<b>Vapor Density (air=1)</b>	Not available
<b>Specific Gravity (water=1)</b>	0.73	<b>Water Solubility</b>	Not available
<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	<b>Physical Form</b>	white solid
<b>Molecular Weight</b>	Not available		

**Solvent Solubility**

**Soluble**

Hydrogen fluoride

**Insoluble**

solvents

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### Section 10 - STABILITY AND REACTIVITY

**Reactivity**

No reactivity hazard is expected.

**Chemical Stability**

Stable at normal temperatures and pressure.

**Possibility of Hazardous Reactions**

Will not polymerize.

**Conditions to Avoid**

None reported.

**Incompatible Materials**

Reactive fluoride gases, such as F<sub>2</sub>, HF, or BF<sub>3</sub>, will decompose the purifier medium and produce volatile metal fluorides, such as SiF<sub>4</sub>.

**Hazardous decomposition products**

miscellaneous decomposition products

### Section 11 - TOXICOLOGICAL INFORMATION

**Information on Likely Routes of Exposure**

**Inhalation**

None from sealed unit. Inhaling dust from medium may cause mechanical irritation of nose and throat, coughing and chest discomfort. Inhalation of large quantities of dust may cause lung damage.

**Skin Contact**

None from sealed unit. None expected from medium

**Eye Contact**

None from sealed unit. Exposure to dust from medium may cause mechanical irritation including slight discomfort, blinking and excess tear formation. Can cause eye redness, swelling of conjunctiva and minor corneal injury.

**Ingestion**

None from sealed unit. None expected from medium

**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 no selected endpoints have been identified.

**Product Toxicity Data**

**Acute Toxicity Estimate**

No data available.

**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.

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**Germ Cell Mutagenicity**

No data available.

**Tumorigenic Data**

No data available

**Reproductive Toxicity**

No data available.

**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**

respiratory disorders

**Section 12 - ECOLOGICAL INFORMATION**

**Component Analysis - Aquatic Toxicity**

No LOLI ecotoxicity data are available for this product's components.

**Other Toxicity**

None known.

**Section 13 - DISPOSAL CONSIDERATIONS**

**Disposal Methods**

Dispose in accordance with all applicable regulations.

**Component Waste Numbers**

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

**Section 14 - TRANSPORT INFORMATION**

**US DOT Information:**

No Classification assigned.

**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**

None of this product's components are listed under SARA Sections 302/304 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65), CERCLA (40 CFR 302.4), TSCA 12(b), or require an OSHA process safety plan.

**SARA Section 311/312 (40 CFR 370 Subparts B and C) reporting categories**

No hazard categories applicable.

**U.S. State Regulations**

None of this product's components are listed on the state lists from CA, MA, MN, NJ or PA.

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

Not listed under California Proposition 65.

**Component Analysis - Inventory**

**METAL OXIDES, TRADE SECRET (Proprietary)**

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

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

### Section 16 - OTHER INFORMATION

**NFPA Ratings**

Health: 1 Fire: 0 Instability: 0

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 - 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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