



Safety Data Sheet

Matrix Shield™

SECTION 1. IDENTIFICATION

Product Identifier	Matrix Shield™
Product Family	Amine
Recommended Use	Oil Field Additive.
Supplier Identifier	Matrix Drilling Fluids Ltd., Suite 1240, 540 - 5th Avenue S.W. , Calgary, Alberta, T2P 0M2, 403-265-7660
Emergency Phone No.	CANUTEC, 613-996-6666 or *666 on a cellular phone (Canada Only), 24 Hours / Day

SECTION 2. HAZARD IDENTIFICATION

Classified according to Canada's Hazardous Products Regulations (WHMIS 2015).

Classification

Skin corrosion - Category 1; Serious eye damage - Category 1; Specific target organ toxicity (single exposure) - Category 3

Label Elements



Signal Word:

Danger

Hazard Statement(s):

H314 Causes severe skin burns and eye damage.

H335 May cause respiratory irritation.

Precautionary Statement(s):

Prevention:

P260 Do not breathe dusts or mists.

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

P264 Wash hands and skin thoroughly after handling.

P271 Use only outdoors or in a well-ventilated area.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

Response:

P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.

P363 Wash contaminated clothing before reuse.

P312 Call a POISON CENTRE or doctor if you feel unwell.

P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P310 Immediately call a POISON CENTRE or doctor.

Storage:

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

P405 Store locked up.

Disposal:

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SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No.	%	Other Identifiers
Hexamethylenediamine	124-09-4	30 - 60	

Notes

Concentrations are expressed in % weight/weight.

SECTION 4. FIRST-AID MEASURES

First-aid Measures

Inhalation

Move to fresh air. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, trained personnel should administer emergency oxygen if advised to do so by Poison Centre or doctor. Seek immediate medical attention.

Skin Contact

Avoid direct contact. Wear chemical protective clothing if necessary. Take off immediately contaminated clothing, shoes and leather goods (e.g. watchbands, belts). Immediately rinse skin with lukewarm, gently flowing water for at least 30 minutes. Seek medical attention.

Eye Contact

Immediately rinse the contaminated eye(s) with lukewarm, gently flowing water for at least 30 minutes, while holding the eyelid(s) open. If a contact lens is present, DO NOT delay flushing or attempt to remove the lens.

Ingestion

Rinse mouth with water. Loosen tight clothing such as a collar, tie, belt or waist band. Never give anything by mouth if person is rapidly losing consciousness, or is unconscious or convulsing. Do not induce vomiting. If vomiting occurs naturally, lie on your side in the recovery position. Rinse mouth with water again. Immediately call a Poison Centre or doctor.

Most Important Symptoms and Effects, Acute and Delayed

If inhaled:

Can cause severe irritation of the nose and throat. Symptoms may include coughing, shortness of breath, difficult breathing and tightness in the chest.

If on skin:

May burn the skin. Permanent scarring may result.

If in eyes:

May cause serious eye damage. May irritate or burn the eyes. Permanent damage including blindness may result.

SECTION 5. FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media

Foam
Dry chemical
Carbon Dioxide
Water Spray.

Unsuitable Extinguishing Media

None known.

Specific Hazards Arising from the Product

Does not burn.

Special Protective Equipment and Precautions for Fire-fighters

Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment, and Emergency Procedures

Evacuate the area immediately. Isolate the hazard area. Keep out unnecessary and unprotected personnel. Evacuate downwind locations. Do not touch damaged containers or spilled product unless wearing appropriate protective equipment. Remove or isolate incompatible materials as well as other hazardous materials.

Environmental Precautions

If the spill is inside a building, prevent product from entering drains, ventilation systems and confined areas. Do not allow into any sewer, on the ground or into any waterway.

Methods and Materials for Containment and Cleaning Up

Contain and soak up spill with absorbent that does not react with spilled product. Contaminated absorbent poses the same hazard as the spilled product. Place used absorbent into suitable, covered, labelled containers for disposal. After cleaning, flush away traces with water. Collect washing for disposal.

SECTION 7. HANDLING AND STORAGE

Precautions for Safe Handling

Avoid generating vapours or mists. Only use where there is adequate ventilation. Wear personal protective equipment to avoid direct contact with this chemical. Keep containers tightly closed when not in use or empty.

Conditions for Safe Storage

Store in a dry place. Do not store in unlabeled containers. Store in tightly closed containers.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

Chemical Name	ACGIH TLV®		OSHA PEL		AIHA WEEL	
	TWA	STEL	TWA	Ceiling	8-hr TWA	TWA
Hexamethylenediamine	0.5 ppm	Not established	Not established	Not established	1 ppm	Not established

Appropriate Engineering Controls

General ventilation is usually adequate. Use local exhaust ventilation and enclosure, if necessary, to control amount in the air. Provide eyewash and safety shower if contact or splash hazard exists.

Individual Protection Measures

Eye/Face Protection

Wear chemical safety goggles.

Skin Protection

Chemically resistant gloves should be used. Consideration must be given both to durability as well as permeation resistance.

Respiratory Protection

Do not breathe in this product. NIOSH/MSHA Approved respirator recommended when TLV's are exceeded.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Basic Physical and Chemical Properties

Appearance	Colourless liquid.
Odour	Not available
Odour Threshold	Not available
pH	Not available
Melting Point/Freezing Point	Not available (melting); Not available (freezing)
Initial Boiling Point/Range	> 100 °C (212 °F)
Flash Point	Not available

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Evaporation Rate	Not available
Upper/Lower Flammability or Explosive Limit	Not available (upper); Not available (lower)
Vapour Pressure	Not available
Vapour Density (air = 1)	Not available
Relative Density (water = 1)	0.963
Solubility	Not available in water
Partition Coefficient, n-Octanol/Water (Log Kow)	Not available
Auto-ignition Temperature	Not available
Decomposition Temperature	Not available
Viscosity	Not available (kinematic)
Other Information	
Physical State	Liquid

SECTION 10. STABILITY AND REACTIVITY

Chemical Stability

Normally stable.

Possibility of Hazardous Reactions

Not applicable.

Conditions to Avoid

None known.

Incompatible Materials

Strong oxidizing agents (e.g. perchloric acid).
Ketones (e.g. acetone).
Phenols (e.g. carbolic acid).
Strong acids (e.g. hydrochloric acid).
Halogenated compounds (e.g. trichloroethylene).
Copper alloys (e.g. brass and/or bronze).

Hazardous Decomposition Products

Oxides of Carbon
Oxides of Nitrogen
Ammonia
Amines
Hydrogen Cyanide.

SECTION 11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Chemical Name	LC50	LD50 (oral)	LD50 (dermal)
Hexamethylenediamine	Not available	980 mg/kg (rat)	2000-3160 mg/kg (rabbit)

Skin Corrosion/Irritation

CORROSIVE. May burn the skin. Permanent scarring may result.

Serious Eye Damage/Irritation

CORROSIVE. May cause serious eye damage. May irritate or burn the eyes. Permanent damage including blindness may result.

STOT (Specific Target Organ Toxicity) - Single Exposure

Inhalation

Can cause severe irritation of the nose and throat. Symptoms may include coughing, shortness of breath, difficult

breathing and tightness in the chest.

Carcinogenicity

Chemical Name	IARC	ACGIH®	NTP	OSHA
Hexamethylenediamine	Not Listed	Not designated	Not Listed	Not Listed

Reproductive Toxicity

Development of Offspring

No information was located.

Sexual Function and Fertility

No information was located.

Effects on or via Lactation

No information was located.

Germ Cell Mutagenicity

No information was located.

SECTION 12. ECOLOGICAL INFORMATION

Environmental information was not located.

Ecotoxicity

Studies were not located.

Persistence and Degradability

Biodegrades.

Bioaccumulative Potential

No information was located.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal Methods

Contact local environmental authorities for approved disposal or recycling methods in your jurisdiction.

SECTION 14. TRANSPORT INFORMATION

Regulation	UN No.	Proper Shipping Name	Transport Hazard Class(es)	Packing Group
Canadian TDG	UN1783	HEXAMETHYLENEDIAMINE SOLUTION	8	II
US DOT	UN1783	HEXAMETHYLENEDIAMINE SOLUTION	8	II

Special Precautions Not applicable

Transport in Bulk According to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

SECTION 15. REGULATORY INFORMATION

Safety, Health and Environmental Regulations

Canada

Domestic Substances List (DSL) / Non-Domestic Substances List (NDSL)

All ingredients are listed on the DSL/NDSL.

USA

Toxic Substances Control Act (TSCA) Section 8(b)

All ingredients are listed on the TSCA Inventory.

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SECTION 16. OTHER INFORMATION

SDS Prepared By Product Safety Committee

Phone No. 403-279-8545

Date of Preparation August 10, 2016

Disclaimer To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

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