

SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of: US OSHA Hazard Communication Standard (29 CFR 1910.1200)

Revision date 28-Aug-2023 Revision Number 1

1. Identification

Product identifier

Product Name MAE 11 (7:2:2)

Other means of identification

Product Code(s) 3157

UN number or ID number UN2922

Synonyms No information available

Recommended use of the chemical and restrictions on use

Recommended use Industrial use

Laboratory use

Industrial Manufacturing (all)

Restrictions on use No information available

Details of the supplier of the safety data sheet

Supplier Address

Columbus Chemical Industries, Inc. N4335 Temkin Rd. Columbus, WI 53925 USA Phone: (920) 623-2140

Fax: (920) 623-2577 www.columbuschemical.com

Emergency telephone number

24 Hour Emergency Phone Number CHEMTREC: 1-800-424-9300 for US / 703-527-3887 outside US

Emergency Telephone 911

2. Hazard(s) identification

Classification

Acute toxicity - Oral	Category 2
Acute toxicity - Dermal	Category 1
Acute toxicity - Inhalation (Gases)	Category 3
Acute toxicity - Inhalation (Dusts/Mists)	Category 1
Skin corrosion/irritation	Category 1
Serious eye damage/eye irritation	Category 1
Corrosive to metals	Category 1

Hazards not otherwise classified (HNOC)

Not applicable

Label elements

Danger

Hazard statements

H300 - Fatal if swallowed

H310 - Fatal in contact with skin

H314 - Causes severe skin burns and eye damage

H330 - Fatal if inhaled

H331 - Toxic if inhaled

H290 - May be corrosive to metals.



Precautionary Statements - Prevention

P264 - Wash face, hands and any exposed skin thoroughly after handling

P270 - Do not eat, drink or smoke when using this product

P262 - Do not get in eyes, on skin, or on clothing

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

P260 - Do not breathe dust/fume/gas/mist/vapors/spray

P284 - Wear respiratory protection

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

P234 - Keep only in original packaging

Precautionary Statements - Response

P321 - Specific treatment (see First-Aid Measures on SDS)

P320 - Specific treatment is urgent (see First-Aid Measures on SDS)

P310 - Immediately call a POISON CENTER or doctor

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 CENTER or doctor

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

P363 - Wash contaminated clothing before reuse

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

P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor

P330 - Rinse mouth

P331 - Do NOT induce vomiting

P390 - Absorb spillage to prevent material damage

Precautionary Statements - Storage

P405 - Store locked up

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

P406 - Store in corrosion resistant container with a resistant inner liner

Precautionary Statements - Disposal

P501 - Dispose of contents/ container to an approved waste disposal plant

Unknown acute toxicity

49 % of the mixture consists of ingredient(s) of unknown acute oral toxicity

49 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity

64.2 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)

Other information

Very toxic to aquatic life.

3. Composition/information on ingredients

Substance

Not applicable.

Mixture

Chemical name	CAS No	Weight-%	Formula	Molecular Weight
Nitric acid	7697-37-2	48.0-49.0	HNO₃	63.01 g/mol
Water	7732-18-5	Balance	H ₂ O	18.00 g/mol
Acetic acid	64-19-7	14.2-15.2	CH₃COOH	60.05 g/mol
Hydrogen fluoride	7664-39-3	7.4-8.4	HF	20.01 g/mol

4. First-aid measures

Description of first aid measures

General advice Show this safety data sheet to the doctor in attendance. Immediate medical attention is

required.

Inhalation Remove to fresh air. Do not use mouth-to-mouth method if victim ingested or inhaled the

substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If breathing is difficult, (trained personnel should) give oxygen. If breathing has stopped, give artificial respiration. Get medical attention immediately. Delayed pulmonary edema may occur. Get immediate medical

attention. Immediate medical attention is required.

Eye contactRinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.

Remove contact lenses, if present and easy to do. Continue rinsing. Keep eye wide open

while rinsing. Do not rub affected area. Get immediate medical attention.

Skin contactGet immediate medical attention. Wash off immediately with soap and plenty of water while

removing all contaminated clothes and shoes.

Ingestion Rinse mouth. Never give anything by mouth to an unconscious person. Do NOT induce

vomiting. Get immediate medical attention.

Self-protection of the first aider Avoid contact with skin, eyes or clothing. Ensure that medical personnel are aware of the

material(s) involved, take precautions to protect themselves and prevent spread of contamination. Do not breathe vapor or mist. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Use personal

protective equipment as required. See section 8 for more information.

Most important symptoms and effects, both acute and delayed

Symptoms Coughing and/ or wheezing. Difficulty in breathing. Burning sensation.

Indication of any immediate medical attention and special treatment needed

Note to physicians Product is a corrosive material. Use of gastric lavage or emesis is contraindicated.

Possible perforation of stomach or esophagus should be investigated. Do not give chemical antidotes. Asphyxia from glottal edema may occur. Marked decrease in blood

pressure may occur with moist rales, frothy sputum, and high pulse pressure.

5. Fire-fighting measures

surrounding environment.

Large Fire CAUTION: Use of water spray when fighting fire may be inefficient.

Unsuitable extinguishing mediaDo not scatter spilled material with high pressure water streams.

Specific hazards arising from the

chemical

The product causes burns of eyes, skin and mucous membranes. Thermal decomposition

can lead to release of irritating gases and vapors.

Explosion data

Sensitivity to mechanical impact None.

Sensitivity to static discharge None.

Special protective equipment and precautions for fire-fighters

Firefighters should wear self-contained breathing apparatus and full firefighting turnout

gear. Use personal protection equipment.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal

protective equipment as required. Evacuate personnel to safe areas. Do not breathe vapor or mist. Keep people away from and upwind of spill/leak. Attention! Corrosive material.

Other information Refer to protective measures listed in Sections 7 and 8.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Pick up and transfer to properly labeled containers.

7. Handling and storage

Precautions for safe handling

Advice on safe handling Handle in accordance with good industrial hygiene and safety practice. Do not breathe

dust/fume/gas/mist/vapors/spray. Avoid contact with skin, eyes or clothing. Take off contaminated clothing and wash before reuse. In case of insufficient ventilation, wear suitable respiratory equipment. Handle product only in closed system or provide appropriate

exhaust ventilation. Do not eat, drink or smoke when using this product.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place. Protect from

moisture. Store locked up. Keep out of the reach of children. Store away from other

materials.

8. Exposure controls/personal protection

Control parameters

Exposure Limits

Chemical name	ACGIH TLV	OSHA PEL	NIOSH
Nitric acid	STEL: 4 ppm TWA: 2 ppm	TWA: 2 ppm TWA: 5 mg/m³ (vacated) TWA: 2 ppm (vacated) TWA: 5 mg/m³ (vacated) STEL: 4 ppm (vacated) STEL: 10 mg/m³	IDLH: 25 ppm TWA: 2 ppm TWA: 5 mg/m ³ STEL: 4 ppm STEL: 10 mg/m ³
Acetic acid	STEL: 15 ppm TWA: 10 ppm	TWA: 10 ppm TWA: 25 mg/m³ (vacated) TWA: 10 ppm (vacated) TWA: 25 mg/m³	IDLH: 50 ppm TWA: 10 ppm TWA: 25 mg/m ³ STEL: 15 ppm STEL: 37 mg/m ³
Hydrogen fluoride	TWA: 0.5 ppm FS*Ceiling: 2 ppm F	TWA: 3 ppm F TWA: 2.5 mg/m³ F (vacated) TWA: 3 ppm F (vacated) TWA: 2.5 mg/m³ (vacated) STEL: 6 ppm F	IDLH: 30 ppm IDLH: 250 mg/m³ F Ceiling: 6 ppm 15 min Ceiling: 5 mg/m³ 15 min TWA: 3 ppm TWA: 2.5 mg/m³

Biological occupational exposure limits

Chemical name	ACGIH
Hydrogen fluoride	3 mg/g creatinine - urine (Fluoride) - prior to shift 10 mg/g
	creatinine - urine (Fluoride) - end of shift

Appropriate engineering controls

Engineering controls Showers

Eyewash stations Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/face protection Tight sealing safety goggles. Face protection shield.

Hand protection Wear suitable gloves. Impervious gloves.

Skin and body protection Wear suitable protective clothing. Long sleeved clothing. Impervious clothing. Chemical

resistant apron.

Respiratory protection When workers are facing concentrations above the exposure limit they must use

appropriate certified respirators.

General hygiene considerations Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this

product. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product. Avoid contact with skin, eyes or clothing. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Do not breathe vapor or mist. Contaminated work clothing should not be

allowed out of the workplace.

9. Physical and chemical properties

Information on basic physical and chemical properties

Physical stateLiquidAppearanceClearColorColorless

OdorNo information availableOdor thresholdNo information available

 Property
 Values
 Remarks
 • Method

 pH
 < 1</td>
 No data available

 pH (as aqueous solution)
 No data available
 No data available

 Melting point / freezing point
 No data available

Melting point / freezing pointNo data availableNo data availableInitial boiling point and boilingNo data availableNo data available

range

Flash pointNo data availableNo data availableEvaporation rateNo data availableNo data availableFlammabilityNo data availableNo data available

Flammability Limit in Air

Upper flammability or explosive No data available No data available

limits

Lower flammability or explosive No data available No data available

limits

Vapor pressureNo data availableNo data availableRelative vapor densityNo data availableNo data available

Relative density 1.27 - 1.30

Water solubilityNo data availableNo data availableSolubility(ies)No data availableNo data availablePartition coefficientNo data availableNo data availableAutoignition temperatureNo data availableNo data available

Decomposition temperature

Kinematic viscosityNo data availableNo data availableDynamic viscosityNo data availableNo data available

Other information

Explosive properties

Oxidizing properties

No information available
No information available
No information available

Molecular weight

VOC content

Liquid Density

Bulk density

No information available
No information available
No information available

10. Stability and reactivity

Reactivity No information available.

Chemical stability Stable under normal conditions.

Possibility of hazardous reactions
None under normal processing.

Conditions to avoid Exposure to air or moisture over prolonged periods. Excessive heat.

Incompatible materials Oxidizing agent. Acids. Bases.

Hazardous decomposition products None known based on information supplied.

11. Toxicological information

Information on likely routes of exposure

Product Information

Inhalation Specific test data for the substance or mixture is not available. Fatal if inhaled. (based on

components). Corrosive by inhalation. Inhalation of corrosive fumes/gases may cause coughing, choking, headache, dizziness, and weakness for several hours. Pulmonary edema may occur with tightness in the chest, shortness of breath, bluish skin, decreased blood pressure, and increased heart rate. Inhaled corrosive substances can lead to a toxic

edema of the lungs. Pulmonary edema can be fatal.

Eye contact Specific test data for the substance or mixture is not available. Causes serious eye

damage. (based on components). Corrosive to the eyes and may cause severe damage

including blindness. May cause irreversible damage to eyes.

Skin contact Specific test data for the substance or mixture is not available. Fatal in contact with skin.

(based on components). Corrosive. Causes burns.

Ingestion Specific test data for the substance or mixture is not available. Causes burns. (based on

components). Ingestion causes burns of the upper digestive and respiratory tracts. May cause severe burning pain in the mouth and stomach with vomiting and diarrhea of dark blood. Blood pressure may decrease. Brownish or yellowish stains may be seen around the mouth. Swelling of the throat may cause shortness of breath and choking. May cause lung

damage if swallowed. Fatal if swallowed.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms Coughing and/ or wheezing. Difficulty in breathing. Redness. Burning. May cause

blindness.

Acute toxicity

Numerical measures of toxicity

The following values are calculated based on chapter 3.1 of the GHS document

 ATEmix (oral)
 30.33 mg/kg

 ATEmix (dermal)
 30.10 mg/kg

 ATEmix (inhalation-gas)
 2,058.0205 ppm

 ATEmix (inhalation-vapor)
 99,999.00 mg/l

 ATEmix (inhalation-dust/mist)
 0.0100 mg/l

Unknown acute toxicity

49 % of the mixture consists of ingredient(s) of unknown acute oral toxicity

49 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity

64.2 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Nitric acid	•	-	= 2500 ppm (Rat) 1 h
Water	>90 mL/kg (Rat)	-	-
Acetic acid	= 3310 mg/kg (Rat)	= 1060 mg/kg (Rabbit)	= 11.4 mg/L (Rat)4 h
Hydrogen fluoride	-	-	= 0.79 mg/L (Rat)1 h

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation Classification based on data available for ingredients. Causes severe skin burns and eye

damage.

Serious eye damage/eye irritation Classification based on data available for ingredients. Causes serious eye damage. Causes

burns

Respiratory or skin sensitization No information available.

Germ cell mutagenicity No information available.

Carcinogenicity No information available.

The table below indicates whether each agency has listed any ingredient as a carcinogen.

	3 3	, ,	3	
Chemical name	ACGIH	IARC	NTP	OSHA
Nitric acid	-	-	-	X

Legend

OSHA (Occupational Safety and Health Administration of the US Department of Labor)

X - Present

Reproductive toxicity No information available.

STOT - single exposure No information available.

STOT - repeated exposureNo information available.

Target organ effects Respiratory system, Eyes, Skin, Teeth.

Aspiration hazard No information available.

Other adverse effects No information available.

Interactive effects No information available.

12. Ecological information

Ecotoxicity Very toxic to aquatic life.

Chemical name	Algae/aquatic plants	Fish	Toxicity to	Crustacea
			microorganisms	
Nitric acid	-	96h LC50: = 72 mg/L	-	-
		(Gambusia affinis)		
Acetic acid	-	LC50: =79mg/L (96h, Pimephales promelas) LC50: =75mg/L (96h, Lepomis macrochirus)	-	EC50: =65mg/L (48h, Daphnia magna)
Hydrogen fluoride	-	-	-	48h EC50: = 270 mg/L(Daphnia species)

Persistence and degradability No information available.

Bioaccumulation

Component Information

Chemical name	Partition coefficient
Nitric acid	-2.3
Acetic acid	-0.17
Hydrogen fluoride	-1.4

Other adverse effects No information available.

13. Disposal considerations

Disposal methods

Waste from residues/unused

products

Dispose of in accordance with local regulations. Dispose of waste in accordance with

environmental legislation.

Contaminated packaging Do not reuse empty containers. Dispose of contents/containers in accordance with local

regulations.

California Hazardous Waste Status This product contains one or more substances that are listed with the State of California as

a hazardous waste.

14. Transport information

DOT Regulated
UN number or ID number UN2922

Proper shipping nameCorrosive liquids, toxic, n.o.s., (nitric acid and hydrofluoric acid)

Transport hazard class(es) 8
Subsidiary hazard class 6.1
Packing group II
DOT Marine Pollutant No

TDG Regulated
UN number or ID number UN2922

UN proper shipping name Corrosive liquids, toxic, n.o.s., (nitric acid and hydrofluoric acid)

Transport hazard class(es) 8
Subsidiary hazard class 6.1
Packing group II

ICAO (air)RegulatedUN number or ID numberUN2922

UN proper shipping name Corrosive liquids, toxic, n.o.s., (nitric acid and hydrofluoric acid)

Transport hazard class(es) 8
Subsidiary hazard class 6.1
Packing group II

IATA Regulated
UN number or ID number UN2922

UN proper shipping name Corrosive liquids, toxic, n.o.s. (nitric acid and hydrofluoric acid)

Transport hazard class(es) 8
Subsidiary hazard class 6.1
Packing group II

IMDG Regulated
UN number or ID number UN2922

UN proper shipping name

Corrosive liquids, toxic, n.o.s. (nitric acid and hydrofluoric acid)

Transport hazard class(es) 8

Subsidiary hazard class 6.1 Packing group

15. Regulatory information

International Inventories

TSCA Complies. DSL/NDSL Complies.

EINECS/ELINCS
Contact supplier for inventory compliance status.

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

ENCS - Japan Existing and New Chemical Substances

IECSC - China Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

AICS - Australian Inventory of Chemical Substances

NZIoC - New Zealand Inventory of Chemicals

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

Chemical name	SARA 313 - Threshold Values %
Nitric acid 7697-37-2	1.0
Hydrogen fluoride 7664-39-3	1.0

SARA 311/312 Hazard Categories

Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

CWA (Clean Water Act)

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

Chemical name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Nitric acid	1000 lb	-	-	X
Acetic acid	5000 lb	-	-	Χ
Hydrogen fluoride	100 lb	-	-	Х

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302).

Chemical name Hazardous Substances F	ls Extremely Hazardous	Reportable Quantity (RQ)
	Substances RQs	

Nitric acid	1000 lb	1000 lb	RQ 1000 lb final RQ RQ 454 kg final RQ
Acetic acid	5000 lb	-	RQ 5000 lb final RQ RQ 2270 kg final RQ
Hydrogen fluoride	100 lb	100 lb	RQ 100 lb final RQ RQ 45.4 kg final RQ

US State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

Chemical name	New Jersey	Massachusetts	Pennsylvania
Nitric acid	X	X	X
Water	-	-	X
Acetic acid	X	X	X
Hydrogen fluoride	X	X	X

U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

16. Other information

NFPA Health hazards 4 Flammability 0 Instability 0 Special hazards - HMIS Health hazards 4 Flammability 0 Physical hazards 0 Personal protection X

Chronic Hazard Star Legend * = Chronic Health Hazard

Key or legend to abbreviations and acronyms used in the safety data sheet

Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA TWA (time-weighted average) STEL STEL (Short Term Exposure Limit)

Ceiling Maximum limit value * Skin designation

Key literature references and sources for data used to compile the SDS

Agency for Toxic Substances and Disease Registry (ATSDR)

U.S. Environmental Protection Agency ChemView Database

European Food Safety Authority (EFSA)

EPA (Environmental Protection Agency)

Acute Exposure Guideline Level(s) (AEGL(s))

U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act

U.S. Environmental Protection Agency High Production Volume Chemicals

Food Research Journal

Hazardous Substance Database

International Uniform Chemical Information Database (IUCLID)

National Institute of Technology and Evaluation (NITE)

Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS)

NIOSH (National Institute for Occupational Safety and Health)

National Library of Medicine's ChemID Plus (NLM CIP)

National Library of Medicine's PubMed database (NLM PUBMED)

National Toxicology Program (NTP)

New Zealand's Chemical Classification and Information Database (CCID)

Organization for Economic Co-operation and Development Environment, Health, and Safety Publications

Organization for Economic Co-operation and Development High Production Volume Chemicals Program

Organization for Economic Co-operation and Development Screening Information Data Set

World Health Organization

Revision date 28-Aug-2023

Revision Note No information available.

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet

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