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Material Safety Data Sheet

Amino tri(methylenephosphonic acid)

Section 1: Chemical Product and Company Identification

Molecular formula: C₃H₁₂N₃O₉P₃

CAS Nr: 6419-19-8

Molecular weight: 299.05

Synonyms: Amino Trimethylene Phosphonic Acid;ATMP

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Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	%By Weight
Amino Trimethylene Phosphonic Acid	6419-19-8	48~52

Section 3: Hazards Identification

Emergency overview

Form: aqueous, liquid
Colour: clear
Odour: perceptible odour, aromatic

Caution

May cause eye irritation.
May cause skin irritation.
Corrosive to mild steel.

Human health effects

Irritating to eyes and skin.

Environmental effects

On the basis of available information, this material is not expected to produce any significant adverse environmental effects when recommended use instructions are followed.

Section 4: First Aid Measures

General

Grossly contaminated clothing.
Take off immediately all contaminated clothing.
Wash before re-use.

Eye contact

Rinse immediately with plenty of water.
Continue for at least 15 minutes.
Obtain medical advice.

Skin contact

Wash immediately with plenty of water.
Continue for at least 15 minutes.
Obtain medical advice if there are persistent symptoms. Remove contaminated clothing.

Inhalation

Remove patient to fresh air.
Obtain medical advice if there are persistent symptoms.

Ingestion

Give water to drink.
Obtain medical advice.

Section 5: Fire and Explosion Data

Flash point

Non flammable.

Hazardous products of combustion

Carbon monoxide (CO); carbon dioxide; nitrogen oxides (NOx); phosphorus oxides (PxOy); phosphines.

Extinguishing media

Water spray, foam, dry chemical, or carbon dioxide.

Unusual fire and explosion hazards

Decomposes in a fire giving off irritant fumes.

Fire fighting equipment

Firefighters, and others exposed, wear self-contained breathing apparatus. Equipment should be thoroughly decontaminated after use.

Section 6: Accidental Release Measures

Personal precautions

Use personal protection recommended in section 8.

Environmental precautions

Keep out of drains and water courses.

Methods for cleaning up

Cover spilled substance with earth or sand.

Shovel up into covered containers for disposal.

Do not use metal containers for spilled material.

Flush residual spill area with water.

Refer to section 13 for disposal of spilled material.

Wash away small spills with plenty of water.

Section 7: Handling and Storage

Handling

Avoid contact with skin, eyes and mucous membranes.

Wash hands immediately after handling.

Minimize spray mists/dust.

Do not breathe gas/fumes/vapour/spray.

Engineering measures

Provide natural or mechanical ventilation to minimize exposure.

If practical, use local mechanical exhaust ventilation at sources of air contamination such as processing equipment.

Storage

Keep in a cool, dry, well ventilated place.

Stable under normal conditions of handling and storage.

Temperature > -10 C

Use these materials for equipment glass lining, PVC,polypropylene,glass reinforced plastic,polyethylene.

Unsuitable materials of construction mild steel,carbon steel,aluminum,other metals.

Section 8: Exposure Controls/Personal Protection

Occupational exposure limit

No specific occupational exposure limit has been established.

Respiratory protection

Avoid breathing vapour or mist.

Use approved respiratory protection equipment when airborne exposure is excessive.

If used, full facepiece replaces the need for face shield and/or chemical goggles.

Consult the respirator manufacturer to determine the appropriate type of equipment for a given application.
The respirator use limitations specified by the manufacturer must be observed.

Hand protection

Wear chemical resistant gloves. Suitable materials : PVC, nitrile (rubber).

Eye protection

Wear chemical goggles. Have eye flushing equipment available.

Skin protection

Wear suitable protective clothing.

Wear full protective clothing if exposed to splashes.

Wash contaminated skin promptly.

Laundry contaminated clothing and clean protective equipment before reuse.

Wash thoroughly after handling.

Section 9: Physical and Chemical Properties

Specific gravity: 1.330 min @ 20 oC
pH: <=2.0 Conditions 10 g/l @ 25 oC
Boiling point: > 105 oC Crystallising point: -12 oC
Water solubility: Completely miscible.

Note:

These physical data are typical values based on material tested but may vary from sample to sample.

Typical values should not be construed as a guaranteed analysis of any specific lot or as specifications for the product.

Section 10: Stability and Reactivity Data

Conditions to avoid

None known

Materials to avoid

Corrosive to aluminum and mild steel.

Contact with strong oxidizing agents.

Hazardous reactions

Hazardous polymerization does not occur.

Hazardous decomposition products

Decomposition products: carbon monoxide (CO), carbon dioxide, nitrogen oxides (NOx), phosphorus oxides (PxOy).

Section 11: Toxicological Information

Acute animal toxicity data

Oral

LD50 ,rat, 2.910 mg/kg

Dermal

LD50 , rabbit, > 6.310 mg/kg

Eye irritation

rabbit, Irritating to eyes. 24 h

Skin irritation

rabbit, Irritating to skin. 24 h

Repeat dose toxicity:

rat, subcutaneous, repeat dose.

Slight effects on bone mineralization were noted following subcutaneous injection.

Repeat dose toxicity:

rat, diet, chronic,

Produced effects on body weight, serum enzymes and/or organ weights in repeat dose studies.

Target organs affected

liver, spleen, kidneys.

Developmental toxicity

rat, gavage, No birth defects were noted in rats given the active ingredient orally during pregnancy.

mouse, gavage, No birth defects were noted in rats given the active ingredient orally during pregnancy.

Reproductive toxicity

rat, diet, 3 generation This material had no effect on reproduction or fertility.

Carcinogenicity

rat, diet, 24 months Chronic exposure to animals produced no increase in tumour incidence.

Mutagenicity

The weight of the evidence indicates that this material is not mutagenic in- vitro assays.

Section 12: Ecological Information

This product has not been tested for environmental toxicity, but data obtained on similar products are summarized below:

Environmental Toxicity

Invertebrates: 48 h, EC50 Water flea (*Daphnia magna*) 297 mg/l

Fish: 96 h, LC50 Rainbow trout (*Oncorhynchus mykiss*) > 330 mg/l

Algae: 96 h, EC50 Algae (*Selenastrum capricornutum*) 20 mg/l

Algal growth inhibition is due to ability of this product to complex materials not to toxicity per se.

Environmental fate

COD (Chemical oxygen demand) 230 mg/g

ThOD (Theoretical oxygen demand) 240 mg/g

Biodegradation Closed Bottle 13,5 % 30 d

Zahn-Wellens Dissolved Organic Carbon removed 23 % 28 d

Modified SCAS(OECD 302A) Dissolved Organic Carbon removed 90 %

Modified OECD Screening(OECD 301E) theoretical CO2 evolution 20 %
Partitioning coefficient (octanol/water) 0,000316
Bioconcentration factor (BCF) not expected to bioaccumulate.

Section 13: Disposal Considerations

Disposal considerations
Incineration
All local and national regulations should be followed.
Small quantities : Adjust pH between 6 and 9 and flush away with plenty of water.
Large quantities :
Send to special chemical waste disposal facility.

Section 14: Transport Information

The data provided in this section is for information only. Please apply the appropriate regulations to properly classify your shipment for transportation.
Hazard Class 8
Hazard Identification number UN3265
Packing Group Packing Group III

Section 15: Other Regulatory Information

EC label
EU Dangerous Preparations Directive 1999/45/EC.
Xi - Irritant
R36/38 - Irritating to eyes and skin.
S24/25 - Avoid contact with skin and eyes.
S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Contains
amino tris(methylenephosphonic acid)
Other regulation
Germany - WGK (Wassergefährdungsklasse) : 1

Section 16: Other Information

References: Not available.
Other Special Considerations: Not available.
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