SHANDONG AONA CHEMICAL CO., LTD

Material Safety Data Sheet

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY/UNDERTAKING

Identification

Product name: Amino Trimethylene Phosphonic Acid

Type of product Preparation

Use of the substance or preparation

Cleaning/washing agents and disinfectants, Complexing agents, Scale inhibition

Company/Undertaking Identification

SHANDONG AONA CHEMICAL CO., LTD

2. COMPOSITION/INFORMATION ON INGREDIENTS

Composition

Substance	CAS No.	EC No.	EC Classification	% w/w
amino tris(methylenephosphonic acid)	6419-19-8	229-146-5	Xi, R36/38	>=48,0 - <=52,0 %
phosphonic acid	13598-36-2	237-066-7	C, Xn, R22, R35	<=4,0 %
water	7732-18-5	231-791-2		%

May contain: formaldehyde < 50 ppm
Phosphonate component expressed as active acid.
See Section 16 for full text of R-phrases

3. HAZARDS IDENTIFICATION

Classification of the substance/preparation

EU Dangerous Preparations Directive 1999/45/EC.

Xi; R36/38

Index Number (Annex I):

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.

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.

5. FIRE FIGHTING MEASURES

Extinguishing media

Extinguish with waterspray, alcohol-resistant foam, CO2, dry chemical.

Unsuitable extinguishing media
Do not use water jet on a leak of the tank.

Exposure hazards

Decomposes in a fire giving off irritant fumes.

Combustion products:
carbon monoxide (CO), carbon dioxide, nitrogen oxides (NOx), phosphorus oxides (PxOy), phosphines

Protective equipment

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

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.

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 plastic,	glass lining, PVC, polypropylene, glass reinforced polyethylene
Unsuitable materials of construction	mild steel, carbon steel, aluminum, other metals

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.
Launder contaminated clothing and clean protective equipment before reuse.
Wash thoroughly after handling.

9. PHYSICAL AND CHEMICAL PROPERTIES

General information

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

Important health, safety and environmental information

pH:	<2,0 10 g/l @ 25 C	
Boiling point :	> 105 C	
Flash point:		Non flammable aqueous solution
Specific gravity:	1,33 @ 20 C	
Water solubility:	completely miscible	
Partition coefficient n-octanol/water (log Pow) :	-3,5 @ 20 C	
Kinematic viscosity:	11,1 mm2/s @ 20 C 6,1 mm2/s 40 C 3,9 mm2/s 60 C	

Other information

Molecular weight :	299
Crystallising point :	-12 C

10. STABILITY AND REACTIVITY

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)

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	diet, 3 generation This material had no effect on reproduction or rat, 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 in-vitro assays.

12. ECOLOGICAL INFORMATION

Data is for parent acid.

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.

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.

14. TRANSPORT INFORMATION

ROAD/RAIL

Proper shipping name	UN 3265 CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. *phosphonic acid*		
ADR/RID Class	8		
Packing Group	III		
Hazchemcode	2X	**Kemler**	80

SEA

UN Class	8	**UN No.**	3265

Packing Group III

Emergency Schedule, EmS No. F-A, S-B

AIR

ICAO/IATA Class 8

15. 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

16. OTHER INFORMATION

Data sheets prepared or revised since August 2002 have been completed in accordance with the European Communities Directive 2001/58.

R-phrases

R36/38 - Irritating to eyes and skin.
R22 - Harmful if swallowed.
R35 - Causes severe burns.

Number format: "," used as decimal separator.