



NEWAY SINOPHC TECH. LIMITED

ADD:RM. 204, BUILDING 3, NO. 188, AONA RD., CHINA (SHANGHAI) PILOT FREE TRADE ZONE.
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Safety Data Sheet (MSDS)

(According to GB/T 16483 and GB/T 17519; Adapts to GHS, IMDG, IATA Standards)

Amino Trimethylene Phosphonic Acid (ATMP) Aqueous Solution

SECTION 1: Identification

1.1 Product Identifiers - Product Name: Amino Trimethylene Phosphonic Acid (ATMP) Aqueous Solution - Product Number: ATMP-CAS6419198-202802 - Brand: SIGALD - CAS-No.: 6419-19-8 - Synonyms: ATMP; Aminotris(methylenephosphonic acid); Phosphonic acid, [[[phosphonomethyl)amino]methyl] - Chemical Family: Organophosphonic Acid

1.2 Details of the supplier of the safety data sheet

- Company : NEWAY SINOPHC TECH. LIMITED
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1.3 Emergency telephone

Emergency Phone # : +86-021-50350029
(CHEMTREC)

1.4 Uses & Restrictions - Identified Uses: Scale and corrosion inhibitor for cooling water systems, boiler feed water systems, and oilfield water injection systems; chelating agent for metal ions; water treatment agent for reverse osmosis (RO) pretreatment; detergent additive. - Uses Advised Against: Direct food contact; medical application; use in strong oxidizing environments beyond product limits; mixing with strong alkalis without dilution.

SECTION 2: Hazards Identification

2.1 GHS Classification: Skin corrosion/irritation (Category 1B); Eye damage/irritation (Category 1); Aquatic hazard (Category 1)

2.2 GHS Label Elements - Hazard Pictogram: (Corrosive) + (Aquatic hazard) - Signal Word: DANGER - Hazard Statements: H314 (Causes severe skin burns and eye damage); H410 (Very toxic to aquatic life with long-lasting effects) - Precautionary Statements: P260, P264, P270, P273, P280, P301+P330+P331, P303+P361+P353, P304+P340+P310, P305+P351+P338+P310, P310, P321, P363, P391, P501

2.3 Physical/Chemical Hazards: Non-flammable; non-explosive; strongly acidic; incompatible with strong bases, strong oxidizers (e.g., chlorine, hydrogen peroxide), and heavy metal salts; decomposes at temperatures >200°C to release toxic fumes (phosphorus oxides, ammonia).

2.4 Health Hazards: Severe skin burns and irritation (redness, blistering, corrosion); severe eye damage (corrosion, permanent damage if not treated promptly); inhalation of mist may cause severe respiratory tract irritation (coughing, burns, difficulty breathing); ingestion may cause severe gastrointestinal burns (nausea, vomiting, bleeding).

2.5 Environmental Hazards: Very toxic to aquatic organisms; persistent in water bodies; may cause eutrophication due to phosphorus content.

SECTION 3: Composition/Information on Ingredients

Substance/Mixture: Mixture (Active Ingredient + Solvent)



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| Component | Content (w/w) | CAS-No. | Hazard Classification |
|---|---------------|-----------|---|
| Amino Trimethylene Phosphonic Acid (ATMP) | 50.0-52.0% | 6419-19-8 | Skin Corros. 1B; Eye Dam. 1; Aquatic Toxicity 1 |
| Deionized Water | 48.0-50.0% | 7732-18-5 | Non-hazardous |

SECTION 4: First Aid Measures

- Inhaled: Remove to fresh air immediately; keep the affected person at rest in a semi-upright position; if breathing is difficult, provide oxygen by a qualified person; seek emergency medical attention immediately. - Skin Contact: Remove contaminated clothing and shoes immediately; rinse skin thoroughly with plenty of running water for at least 15 minutes; do not use neutralizing agents; seek emergency medical attention. - Eye Contact: Hold eyelids open; rinse eyes continuously with clean water or normal saline for at least 20 minutes; do not rub eyes; seek emergency medical help immediately. - Swallowed: Do not induce vomiting (risk of aspiration); rinse mouth with water (do not swallow); give small amounts of water to dilute (only if the person is conscious and able to swallow); seek emergency medical attention with this MSDS.

SECTION 5: Firefighting Measures

- Suitable Extinguishing Media: Water spray, foam, CO₂, dry powder, sand. - Unsuitable Media: No specific restrictions (non-flammable), but avoid high-pressure water jet which may disperse corrosive liquid. - Special Hazards: Non-flammable under normal conditions; decomposes at high temperature (>200°C) to release toxic fumes (phosphorus pentoxide, ammonia, phosphine); contact with strong bases may generate heat and splashing. - Firefighter Advice: Wear full firefighting protective equipment (including self-contained breathing apparatus, chemical-resistant suit, and face shield); keep a safe distance; cool containers with water spray; avoid inhalation of decomposition fumes and contact with corrosive runoff.

SECTION 6: Accidental Release Measures

- Personal Precautions: Wear chemical-resistant gloves (neoprene or butyl rubber), face shield, safety goggles, and protective clothing; avoid direct contact with spilled liquid and vapors; use respiratory protection in confined spaces or high-vapor concentrations. - Environmental Precautions: Prevent runoff into sewers, rivers, lakes, or other water bodies; notify local environmental authorities if contamination occurs; isolate the spilled area to avoid spread. - Cleanup: Small spill - absorb with inert materials (vermiculite, diatomaceous earth, or sand), place in a sealed corrosion-resistant container for disposal; large spill - dike the area with sand or soil, collect the spilled liquid into corrosion-resistant drums, and treat by professional hazardous waste disposal institutions; neutralize the contaminated area with dilute sodium carbonate solution (under professional guidance) before cleaning.

SECTION 7: Handling and Storage

- Handling: Operate in well-ventilated area; use chemical-resistant equipment (pumps, hoses, containers); avoid generating mist or aerosol; wear full personal protective equipment during



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handling; do not mix with strong bases, strong oxidizers, or heavy metal salts; avoid splashing and spillage; wash hands and face thoroughly after handling. - Storage: Store in cool, dry, well-ventilated warehouse (5-30°C); keep container tightly closed to prevent leakage and moisture absorption; avoid direct sunlight and high temperature; store separately from strong bases, strong oxidizers, food-grade materials, and heavy metal salts; stack containers stably (no more than 2 layers) to prevent tipping; label clearly with hazard warnings. - Shelf Life: 12 months (unopened, specified conditions); use promptly after opening, seal tightly after each use; do not use if discoloration, precipitation, or odor change occurs. - Compatibility: Incompatible with strong bases (NaOH, KOH), strong oxidizers (H₂O₂, ClO₂), and heavy metal salts (FeCl₃, CuSO₄).

SECTION 8: Exposure Controls/Personal Protection

- Engineering Controls: Install local exhaust ventilation to remove mist and vapors; maintain good general ventilation in the workplace; use corrosion-resistant ventilation ducts; install emergency eyewash stations and safety showers nearby the workplace. - PPE: Respiratory protection: Use acid mist respirator (P100/N95) when mist is generated or in confined spaces; Hand protection: Chemical-resistant gloves (neoprene or butyl rubber, thickness ≥ 0.4 mm); Eye/Face protection: Face shield and safety goggles (chemical-resistant); Body protection: Chemical-resistant protective clothing (acid-proof apron and suit). - Hygiene Measures: Do not eat, drink, or smoke in the workplace; do not touch eyes, face, or mouth with contaminated hands; remove contaminated clothing and shoes immediately after contact; wash contaminated clothing separately before reuse; provide washing facilities (soap, water) near the workplace.

SECTION 9: Physical and Chemical Properties

Physical State: Liquid; Color: Colorless to pale yellow; Odor: Odorless or slight characteristic odor pH (25°C, 1% Solution): 1.5-2.5 (strongly acidic); Density (25°C): 1.35-1.45 g/cm³; Viscosity (25°C): 30-60 mPa·s Boiling Point: 105-110°C (aqueous solution, decomposes); Melting Point: Not applicable (aqueous solution); Flash Point: Not applicable (non-flammable) Decomposition Temperature: >200°C; Solubility: Fully miscible with water, slightly soluble in methanol, insoluble in ethanol, acetone, and other organic solvents Vapor Pressure (25°C): <0.1 hPa; Partition Coefficient (log P): -3.2 (estimated); pKa: 1.0, 2.2, 6.8, 10.5

SECTION 10: Stability and Reactivity

- Stability: Stable under normal storage and handling conditions; maintains scale inhibition performance and chemical stability within the shelf life; stable in acidic and neutral environments; reacts violently with strong bases to generate heat and splashing. - Incompatibilities: Strong bases (sodium hydroxide, potassium hydroxide) which may cause violent neutralization reaction; strong oxidizers (hydrogen peroxide, chlorine dioxide, nitric acid) which may oxidize the phosphonic acid groups and degrade the product; heavy metal salts (iron, copper, zinc salts) which may form insoluble complexes and reduce scale inhibition efficiency. - Hazardous Decomposition Products: At temperatures >200°C, decomposes to release phosphorus oxides (P₂O₅), ammonia (NH₃), and trace phosphine (PH₃, toxic); contact with strong oxidizers may generate toxic chlorine-containing compounds.

SECTION 11: Toxicological Information

- Acute Toxicity: Oral (Rat, LD₅₀): 340 mg/kg (50% solution); Dermal (Rabbit, LD₅₀): 850 mg/kg (50% solution); Inhalation (Rat, LC₅₀): >1 mg/m³ (4-hour exposure, mist). - Skin/Eye



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Irritation: Severe skin corrosion (Category 1B) and severe eye damage (Category 1); causes blistering, corrosion, and permanent damage to eyes if not treated promptly. - Respiratory Toxicity: Inhalation of mist causes severe respiratory tract corrosion and irritation; may lead to pulmonary edema in severe cases. - Other Toxicity: No mutagenic, carcinogenic, or teratogenic effects reported; long-term exposure may cause damage to kidneys and liver due to phosphorus accumulation.

SECTION 12: Ecological Information

- Fish (Zebrafish, LC₅₀): 12 mg/L (96-hour exposure, 50% solution) - Daphnia (EC₅₀): 8 mg/L (48-hour exposure, 50% solution) - Algae (Growth Inhibition, EC₅₀): 15 mg/L (72-hour exposure, 50% solution) - Biodegradability: Poorly biodegradable (BOD₅/COD < 0.1); persistent in water bodies; may cause eutrophication due to high phosphorus content. - Environmental Fate: Resistant to hydrolysis and photodegradation; in natural water bodies, exists in dissolved state; adsorbs slightly to sediment; does not bioaccumulate in aquatic organisms.

SECTION 13: Disposal Considerations

- Product Waste: Dilute the waste product with water (1:20) and neutralize with dilute sodium carbonate solution (under professional guidance) to pH 6-9; then dispose of via licensed hazardous waste treatment facilities in accordance with local regulations; do not discharge into water bodies or sewers. - Packaging Waste: Rinse packaging containers thoroughly with water (3-5 times); neutralize the rinse water as above; dispose of the container as hazardous waste if contaminated, or as general solid waste if no residual product remains; recycle packaging materials only if permitted and after thorough cleaning. - Special Disposal Notes: Do not incinerate the product or packaging (releases toxic fumes); do not landfill without prior treatment; comply with local environmental protection regulations for hazardous waste disposal.

SECTION 14: Transport Information

- UN Number: ADR/RID: UN 3264; IMDG: UN 3264; IATA-DGR: UN 3264 - UN Proper Shipping Name: Corrosive liquid, acidic, organic, n.o.s. (Amino Trimethylene Phosphonic Acid) - Transport Class: 8 (Corrosive); Packaging Group: II; Environmental Hazards: Yes (Marine Pollutant) - Special Precautions: Transport in corrosion-resistant packaging (HDPE drums or steel drums lined with HDPE); avoid collision, vibration, and impact to prevent packaging damage and leakage; keep away from strong bases, strong oxidizers, and food-grade goods during transport; store in a cool, ventilated area during transit; do not expose to sunlight or high temperature; transport by qualified hazardous chemical transport vehicles; drivers and handlers must be trained and familiar with hazard characteristics.

SECTION 15: Regulatory Information

- National Regulations (China): Complies with Hazardous Chemical Safety Management Regulation; meets GB/T 26324-2010 (Water Treatment Agents - Aminotrimethylene Phosphonic Acid) and GB 5085.1-2007 (Hazardous Waste Identification Standards); compliant with water treatment agent use standards for industrial cooling water and boiler water. - International Regulations: GHS Rev.9 (Skin Corros. 1B, Eye Dam. 1, Aquatic Toxicity 1); REACH (EU, registered); TSCA (US, listed); FDA (US, compliant for industrial water treatment use only).

SECTION 16: Other Information



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- Revision Date: 15 FEB 2025 - Disclaimer: Based on current scientific knowledge and product testing data; supplier not liable for damage caused by improper use, storage, handling, or non-compliance with regulations; the information in this MSDS is accurate to the best of our knowledge at the time of revision.

