

SECTION 1 – PRODUCT AND COMPANY INFORMATION

Product Name: Airflow Tube (P/N NSTOX1002106)

Company: Nextteq LLC
8406 Benjamin Road, Suite J
Tampa, FL 33634
(813) 249-5888
(877) 312-2333

SECTION 2 – COMPOSITION/INFORMATION ON INGREDIENTS**AMPOULE 1**

Acetic Acid sorbed on inert substance
Acetic Acid (CAS 641-19-7)
Silica Gel (CAS 63231-67-4)

AMPOULE 2

Ethylenediamine sorbed on inert substance
Ethylenediamine (CAS 107-15-3)
Pumice (CAS 1332-09-8)

SECTION 3 – HAZARDS IDENTIFICATION**EMERGENCY OVERVIEW**

Each flexible tube contains two sealed glass ampoules. When the ampoules are manually crushed, aspirated airflow causes mixing of the released vapors, which react to form Ethylenediamine acetate smoke. No TLV is listed for Ethylenediamine acetate; however, avoid breathing the tube effluent. Tube effluent contains ethylenediamine acetate smoke and may contain residual vapors of acetic acid and ethylenediamine, either of which will cause irritation to eyes, mucous membranes, and skin.

PHYSICAL HAZARD: Acetic Acid: Flammable Liquid (sorbed on inert solid)
Ethylenediamine: Flammable Liquid (sorbed on inert solid)

HEALTH HAZARDS: Acetic Acid – Corrosive, toxic
Ethylenediamine – Irritant, toxic, sensitizer

For additional information on toxicity, please refer to Section 11.

SECTION 4 – FIRST AID MEASURES**ORAL EXPOSURE**

If tube contents are ingested and if victim is conscious, give two (2) glasses of water to dilute chemical. Get medical attention immediately.

INHALATION EXPOSURE

Remove victim from smoke fumes to area with clean air. If breathing is difficult, administer oxygen. If breathing has stopped, give artificial respiration. Keep victim warm and at rest. Get medical attention immediately in both cases.

DERMAL EXPOSURE

In case of contact, immediately wash skin with soap and copious amounts of clean and running water.

EYE EXPOSURE

Remove victim from smoke fumes to area with clean air. Flush eyes with water for fifteen (15) minutes holding eyes open and raising eyelids to flush under lid areas. Get medical attention immediately.

EXPOSURE LIMITS

Acetic acid:

ACGIH-TLV: STEL 15 ppm

ACGIH-TLV: TWA 10 ppm

OSHA PEL: TWA 10 ppm

NIOSH IDLH: 50 ppm

Ethylenediamine:

ACGIH-TLV: TWA 10 ppm

OSHA PEL: TWA 10 ppm

NIOSH IDLH: 1000 ppm

SECTION 5 – FIRE FIGHTING MEASURES**FLAMMABLE HAZARDS**

Acetic acid – Combustible liquid (sorbed on inert substance)

Ethylenediamine – Flammable liquid (sorbed on inert substance)

Ampoules may rupture and emit toxic fumes under fire conditions. Avoid mixing with acids, bases, oxidizers.

FLASH POINT

Acetic acid: 103°F (39.4°C) LEL: 4% UEL 19.9%

Ethylenediamine: 93°F (33.9°C) LEL: 4.2% UEL 14.4%

EXTINGUISHING MEDIA

Suitable for surrounding fire.

FIRE FIGHTING

Wear impervious covering and pressure demand self-contained breathing apparatus with full facepiece.

SECTION 6 – ACCIDENTAL RELEASE MEASURES**PROCEDURE TO BE FOLLOWED IN CASE OF LEAK OR SPILL**

If contents of a tube are released, avoid skin contact with spilled material. Leave the immediate area if smoke is generated.

PERSONAL PROTECTIVE EQUIPMENT

Skin: Chemical resistant gloves

Eye: Safety goggles

METHODS FOR CLEANING UP

Fill a five-gallon bucket $\frac{3}{4}$ full of water. Sweep up spilled material and place sweepings in bucket. Examine the tube to be sure both ampoules within the tube are crushed. If both ampoules are crushed, place the tube with contents into the bucket so that the tube is immersed. If the tube contains an unbroken ampoule, crush it (within the tube) and immerse the tube and its contents in the bucket. If an unbroken ampoule has been released from the tube, replace it in the tube, crush it (within the soft plastic tube), and immerse this tube with contents in the bucket. In all cases, let the tube soak overnight. Dispose the material in the bucket in accordance with local, state, and federal regulations.

SECTION 7 – HANDLING AND STORAGE**HANDLING**

Avoid eye and skin contact with smoke. Do not directly breathe the smoke. Avoid the build up of smoke. Use in a well-ventilated area. Do not use under a hood or in a confined space. Do not blow smoke directly into anyone's unprotected face or eyes. After using the smoke tube or being exposed to the smoke, scrub face, hands, and any area exposed to the smoke with soap and clean running water before eating, drinking, smoking, applying cosmetics, or inserting or removing contact lenses.

STORAGE

Store in the original container in a cool dry location. Protect against light, heat, moisture, and physical damage.

SECTION 8 – EXPOSURE CONTROLS / PPE**PERSONAL PROTECTIVE EQUIPMENT**

Wear chemical resistant safety gloves and eye protection in accordance with NIOSH and OSHA standards and good practice when breaking ampoules in this plastic tube.

GENERAL HYGIENE MEASURES

Avoid eye and skin contact with smoke. Do not directly breathe the smoke. Avoid the build up of smoke. Use in a well-ventilated area. Do not use under a hood or in a confined space. Do not blow smoke directly into anyone's unprotected face or eyes. After using the smoke tube or being exposed to the smoke, scrub face, hands, and any area exposed to the smoke with soap and clean running water before eating, drinking, smoking, applying cosmetics, or inserting or removing contact lenses.

SECTION 9 – PHYSICAL / CHEMICAL PROPERTIES

Acetic Acid, distinguished by its vinegar odor

Appearance Physical State: Liquid	SG/Density: 1.05	Partition Coefficient: N/A
Color: Colorless	Bulk Density: N/A	Decomposition Temp.: N/A
Molecular Weight: 60.05	Odor Threshold: N/A	Flash Point: 103°F (39.4°C)
pH: N/A	Volatile%: N/A	Explosion Limits: N/A
BP/BP Range: 117.9°C	VOC Content: N/A	Flammability: N/A
MP/MP Range: 16.6°C	Water Content: N/A	Autoignition Temp.: N/A
Freezing Point: N/A	Solvent Content: N/A	Refractive Index: N/A
Vapor Pressure: 11 mmHg @ 20°C	Evaporation Rate: N/A	Optical Rotation: N/A
Vapor Density: N/A	Viscosity: N/A	Miscellaneous Data: N/A
Saturated Vapor Conc.: N/A	Surface Tension: N/A	Solubility: Miscible

Ethylenediamine, distinguished by its ammonia odor

Appearance Physical State: Liquid	SG/Density: 0.91	Partition Coefficient: N/A
Color: Colorless	Bulk Density: N/A	Decomposition Temp.: N/A
Molecular Weight: 60.11	Odor Threshold: N/A	Flash Point: 93°F (33.9°C)
pH: N/A	Volatile%: N/A	Explosion Limits: N/A
BP/BP Range: 116.5°C	VOC Content: N/A	Flammability: N/A
MP/MP Range: 8.5°C	Water Content: N/A	Autoignition Temp.: N/A
Freezing Point: N/A	Solvent Content: N/A	Refractive Index: N/A
Vapor Pressure: 11 mmHg @ 20°C	Evaporation Rate: N/A	Optical Rotation: N/A
Vapor Density: N/A	Viscosity: N/A	Miscellaneous Data: N/A
Saturated Vapor Conc.: N/A	Surface Tension: N/A	Solubility: Miscible

N/A = not available

SECTION 10 – STABILITY AND REACTIVITY

STABILITY

Stable: Stable.

Materials to Avoid: Avoid mixing with acids, bases, oxidizers.

HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Ampoules may rupture and emit toxic fumes under fire conditions.

HAZARDOUS POLYMERIZATION

Hazardous Polymerization: Acetic acid and Ethylenediamine are stable compounds. They do not undergo hazardous polymerization.

SECTION 11 – TOXICOLOGICAL INFORMATION

ROUTE OF EXPOSURE AND SYMPTOMS

Health Hazards

- Acetic acid – Mild corrosive, toxic
- Ethylenediamine – Irritant, toxic, sensitizer

No TLV is listed for Ethylenediamine acetate; however, avoid breathing the tube effluent. Tube effluent contains ethylenediamine acetate smoke and may contain residual vapors of acetic acid and ethylenediamine, either of which will cause irritation to eyes, mucous membranes, and the skin.

Target Organ(s) or System(s)

- Acetic acid: Eye, nose, throat, skin
- Ethylenediamine: Eye, nose, throat, skin, liver, kidneys

SIGNS AND SYMPTOMS OF EXPOSURE

- Acetic acid: Irritation of eyes, mucous membranes, skin. Splashes produce eye and skin burns, ingestion of 1 ml of glacial acetic acid produced perforation of the esophagus. Primary routes of entry are inhalation, eyes, skin, and mouth.
- Ethylenediamine: Irritation of eye, mucous membranes, skin. Primary routes of entry are inhalation, eyes, skin, and mouth.

TOXICITY DATA

Acetic Acid

Test	Result	Route	Species
LD ₅₀	3310 mg/kg	Oral	Rat
LD ₅₀	1060 mg/kg	Skin	Rabbit
LC _{LO}	16,000 ppm / 4H	Inhalation	Rat
TC _{LO}	816 ppm/3 min	Inhalation	Human
LD ₅₀	4960 mg/kg	Oral	Mouse
LD ₅₀	5620 ppm / 1H	Inhalation	Mouse
LD _{LO}	1470 mg/kg	Oral	Human

Ethylenediamine

Test	Result	Route	Species
TC _{LO}	200 ppm	Inhalation	Human
LC _{LO}	4000 ppm / 8 H	Inhalation	Rat
LO ₅₀	1160 mg/kg	Oral	Rat
LD ₅₀	470 mg/kg	Oral	Guinea Pig
LO ₅₀	730 mg/kg	Skin	Rabbit

IRRITATION DATA

Acetic Acid

Test	Result	Route	Species
50 mg / 24H	Mild	Skin	Human
50 mg / 24H	Mild	Skin	Rabbit
525 mg open	Severe	Skin	Rabbit
50 mg	Severe	Eye	Rabbit

Ethylenediamine

Test	Result	Route	Species
450 mg	Moderate	Skin	Rabbit
10 mg / 24H	Severe	Skin	Rabbit
675 mg	Severe	Eye	Rabbit

SECTION 12 - ECOLOGICAL INFORMATION

Acetic Acid Ecological Information

Ecotoxicity: Fish: Fathead Minnow, LC₅₀=88 mg/L, 96 Hr, Static bioassay @ 18-22°C

Fish: Bluegill/Sunfish, LC₅₀=75 mg/L, 96 Hr.

Fish: Goldfish: LC₅₀=423 mg/L, 24 Hr.

Crustracean: Water flea (Daphnia): EC₅₀=32-47 mg/L, 24-48 Hr.

Bacteria: Phytobacterium phosphoreum, EC₅₀=8.86-11 mg/L, 5, 15, 25 min.

Environmental: If released to the atmosphere, it is degraded in the vapor-phase by reaction with photochemically produced hydroxyl radicals (estimated typical half-life of 26.7 days). It occurs in atmospheric particulate matter in acetate form and physical removal from air can occur via wet and dry deposition. If released to water or soil, acetic will biodegrade readily. Evaporation from dry surfaces is likely to occur. When spilled on soil, the liquid will spread on the surface and penetrate into the soil at a rate dependent on the soil type and its water content. Acetic acid shows no potential for biological accumulation or food chain contamination.

Physical: No information available.

Other: No information available.

Ethylenediamine Ecological Information

Ecotoxicity: Fish: Fathead Minnow, LC₅₀=115.7 mg/L, 96 Hr. , Static Conditions

Fish: Rainbow trout, LC₅₀=230.0 mg/L, 96 Hr., Static Conditions

Crustacean: Water Flea (Daphnia), EC₅₀=0.88 mg/L, 48 Hr.



Bacteria: Phytobacterium phosphoreum, EC₅₀=20.0 mg/L, 15 min.
Fish: Chub (fresh water), 60ppm/24H: (lethal)
Rainbow trout LC50=230 mg/L/48H

Environmental: On soil, substance will leach and volatilize. In water, substance will form alkaline solution and will biodegrade. Bioconcentration is not predicted. In air, substance will react with hydroxyl radicals and carbon dioxide. Biological Oxygen Demand (BOD): 75% (theor.), 5 days.

Physical: No information available.

Other: No information available.

SECTION 13 - DISPOSAL CONSIDERATIONS

APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION

Tape over ends of exhausted tubes and dispose in accordance with local, state, and federal regulations.

SECTION 14 - TRANSPORT INFORMATION

Ship this product according to federal DOT regulations in 49 CFR.

SECTION 15 - REGULATORY INFORMATION

UNITED STATES REGULATORY SARA LISTED: NO

Ethylenediamine and acetic acid are not chemicals subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR 372.

SECTION 16 - SPECIAL PRECAUTIONS AND COMMENTS

Class of Users: This product is only for sale to, for use by, and for storage by trained, qualified, technically competent, and professional commercial, industrial, military, or government users.

Handling & Storage: Store in the original container in a cool dry place. Protect against light, heat, moisture, and physical damage.

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