

1. Chemical Product and Company Identification

Trade Name: BurnEx™ ADP494
Chemical Name: Antimony Pentoxide
Synonyms: None
Product Code: ADP494
Use: Flame Retardant
Manufacturer: Nyacol Nano Technologies, Inc.
Megunko Road, P.O. Box 349, Ashland, MA 01721 U.S.A.
Emergency Telephone: 508-881-2220
E-mail Contact: info@nyacol.com

2. Composition / Information on Ingredients

<u>Component</u>	<u>CAS #</u>	<u>Exposure Limits</u>	<u>Percent By Weight</u>
Antimony Pentoxide partially ion-exchanged with sodium ions	1314-60-9	0.5mg/M ³ (Antimony)	76 - 90
Ethoxylated Fatty Alkyl Amine	61791-14-8	None.	9 - 15
Phosphoric Acid	7664-38-2	1.0mg/M ³	1 - 3
Water	7732-18-5	None.	0 - 6
<u>Component</u>	<u>EINECS #</u>	<u>RTECS #</u>	<u>REACH #</u>
Antimony Pentoxide	215-237-7	CC6300000	05-2117294568-25-0000
Ethoxylated Fatty Alkyl Amine	No Longer Polymer	Not listed.	05-2117294587-25-0000
Phosphoric Acid	231-663-2	TB6300000	05-2117294602-41-0000
Water	231-791-2	ZC0110000	None.

3. Hazard IdentificationEmergency Overview

White powder. No odor. Do not breathe dust.

Classification

Harmful

Symbol:

 Xn

Risk Phrases:

R20/22 Harmful by inhalation and if swallowed.

Safety Phrases:

S2; S22 Keep out of reach of children. Do not breathe dust.

Potential Health Effects / Health Hazard Identification

Acute Exposure

Eye:

Irritant.

Skin:

Irritation, drying or cracking of skin due to drying effect.

Inhalation:

Pneumoconiosis and upper airway inflammation.

Ingestion:

Gastrointestinal effects such as vomiting and diarrhea have been reported in both humans and animals after ingesting antimony compounds.

Chronic Exposure:

Chronic exposure to antimony compounds has caused damage to the heart with altered ECG, high blood pressure, ulcers and disturbances in menstruation.

Other Hazards

Known Synergists:

None known.

Explosion Hazard:

None known.

Fire Hazard:

None known.

Corrosion Hazard:

None known.

4. First Aid Measures

Eye Contact:	Flush eyes with large quantities of water. If irritation persists get medical attention.
Skin Contact:	Wash with soap and water.
Ingestion:	If swallowed seek medical attention immediately. If medical attention is not available induce vomiting. Never give anything by mouth to an unconscious person.
Inhalation:	Remove person from exposure source, seek medical professional.
First Aid Facilities:	Eye wash station. Syrup of Ipecac.
Advice to Physicians:	Reports of Occupational Exposure to inorganic antimony compounds include skin rash, gastrointestinal disturbances and ECG alterations. Therapeutic administration of antimonial drugs has reported side effects of ECG changes in the T wave and possible heart failure. Liver damage has also been reported. Studies with pentavalent antimonial drugs show between 19 and 43% of the antimony being excreted after 24 hours. See U.S. Department of Health, Education and Welfare document <u>Occupational Exposure to Antimony</u> for details.

5. Fire-Fighting Measures

Not Flammable:	Material will not burn in a fire.
Extinguishing Media:	All are acceptable, cool containers with water spray.
Protective Equipment:	Wear standard full firefighter turn out gear (full bunker gear), and respiratory protection (SCBA).
Special Exposure Hazard:	None known.

6. Accidental Release Measures

Leaks and Spills:	Prevent dusting, cover spill if windy. Vacuum or shovel into containers for reuse or disposal.
Personal Protection:	Emergency responders should wear eye protection and gloves. An approved air purifying respirator should be worn.

7. Handling and Storage

Handling:	Avoid generating dust during use.
Storage:	Store in dry area.

8. Exposure Controls / Personal Protection

Engineering Control:	Use exhaust ventilation to keep airborne concentrations below exposure limits.
Respiratory Protection:	When respiratory protection required or concentrations unknown, use approved air-purifying respirator with dust cartridge.
Skin Protection:	Clean body-covering clothing; impervious gloves e.g., neoprene.
Eye Protection:	Wear approved safety glasses.

9. Physical and Chemical Properties

Appearance:	White powder.
Odor:	None.
Physical State:	Solid. BurnEx ADP494 is a dry powder material.
pH:	Not applicable.
Boiling Point:	Not available.
Freezing Point:	Not available.
Flash Point:	None.
Vapor Pressure:	Not available.
Oxidizing Properties:	Not an oxidizer.
Solubility in Water:	Slightly soluble.
Density:	3700 Kg/M ³

CONTINUED →

9. Physical and Chemical Properties, continued

Specific Gravity: 3.7
 Volatile by Weight: 2%
 Viscosity: Not applicable.
 Explosion Limits: None.
 Partition Coefficient: Not available, but soluble in polar solvents.
 Evaporation Rate: Not available.

10. Stability and Reactivity

Chemical Stability: Stable.
 Conditions To Avoid: No recommendation.
 Incompatibility With Other Materials: Use of BurnEx ADP494 under acidic reducing conditions may form the poisonous gas stibine.
 Hazardous Decomposition Products: Oxides of nitrogen and carbon.
 Hazardous Polymerization: Will not occur.

11. Toxicological Information

<u>Material</u>	<u>LD₅₀, Rat, Oral</u>
Antimony Pentoxide	Greater than 4123 mg/kg
Ethoxylated Fatty Alkyl Amine	200 – 2000 mg/kg
Water	None reported
Phosphoric Acid	4400 mg/kg at 75% H ₃ PO ₄
Eye Effects:	No published data available. This material may be irritating.
Skin Effects:	No published data available. Dry skin has been reported by workers.
Inhalation Effects:	Published reports claim respiratory irritation for mixed antimony compounds.
Ingestion Effects:	Published reports claim gastrointestinal effects such as vomiting and diarrhea after ingesting antimony compounds.

12. Ecological Information

Ecotoxicity: Antimony does not appear to bioconcentrate appreciably in fish. Plant uptake of antimony from soil is minor and correlates to the amount of available antimony. Antimony does not appear to biomagnify from lower to higher trophic levels in the food chain.
 Persistence: Reports claim that antimony compounds released in the environment are absorbed by soil with no general mobility except in sandy soils. Some methylated antimony compounds can form in reducing conditions such as found in anaerobic sediment.

13. Disposal Considerations

Disposal Considerations: BurnEx ADP494 should be recycled or disposed in a landfill approved for chemical waste.
 United States: Should BurnEx ADP494 become a waste the EPA TCLP test should be performed. If this test is not done then the waste should be treated as an EP toxic material and given EPA waste numbers D004 and D008.

14. Transport Information

<u>Regulations</u>	<u>Shipping Name</u>	<u>Hazard Class</u>	<u>Packing Group</u>	<u>U.N. Number</u>
U.S. D.O.T.:	Not applicable	Not applicable	Not applicable	Not applicable
ICAO / IATA:	Not applicable	Not applicable	Not applicable	Not applicable
IMO / IMDG:	Not applicable	Not applicable	Not applicable	Not applicable
ADR:	Not applicable	Not applicable	Not applicable	Not applicable

15. Regulatory InformationU.S. Federal Regulations

EPA TSCA Inventory:

SARA Section 313:

All ingredients listed.

This product contains the following toxic chemicals subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 and of 40 CFR 372:

<u>Chemical Name</u>	<u>CAS #</u>	<u>Percent By Weight</u>
Antimony Pentoxide	1314-60-9	76 - 90
Phosphoric Acid	7664-38-2	1 - 3

D.O.T. Regulations:

See Section 14.

U.S. State Regulations

State Right-to-Know Laws:

Section 2 of this MSDS lists all components of BurnEx ADP494.

Canadian Regulations

WHMIS:

Class D, Division 2, Material causing other toxic effects.

Transportation of Dangerous Goods (TDG):

Not applicable. BurnEx ADP494 does not meet dangerous goods criteria.

Controlled Products

Regulations:

This MSDS contains all the information items specified in Schedule 1, Column 3 of the CPR in a 16-heading format.

German Regulations*Wassergefährdungsklasse*

Classification by

Manufacturer:

(Water Pollution Class)

WGK2

EC Regulations

Classification:

Symbol:

Risk Phrases:

Safety Phrases:

Harmful

■ Xn St. Andrew's Cross

R20/22 Harmful by inhalation and if swallowed

S2; S22 Keep out of reach of children. Do not breathe dust

International Inventory Status

Ingredients are included:

Australia (AICS); Canada (DSL); China (IECSC); Europe (EINECS); Japan (ENCS); Korea (ECL); Philippines (PICCS); SWISS

16. Other Information

NFPA 704 Hazard Rating:

HMIS® Hazard Rating:

Recommended Use:

Work Alert:

MSDS Prepared By:

Revision Date:

Supersedes:

Health - 0, Flammability - 0, Reactivity - 0, Special - None

Health - 1, Flammability - 0, Reactivity - 0

Protective Equipment - E: safety glasses, gloves, dust respirator

BurnEx ADP494 is recommended for use as a flame retardant. Other uses have not been investigated and may have other hazards. For industrial use only, not for food, drug or home use.

Workers using BurnEx ADP494 should read and understand this MSDS and be trained in the proper use of this material.

David L. Catone

Technical Service & Product Development Manager

R&D Department

Nyacol Nano Technologies, Inc.

Telephone: 508-881-2220 (U.S.A.)

December 12, 2008

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This MSDS has been prepared with data from Nyacol Nano Technologies, Inc.'s laboratories, raw material suppliers, and government publications. Information herein is accurate to the best of our knowledge. Suggestions are made without warranty or guarantee of results. Before using, the user should determine the suitability of the products for the intended use, and the user assumes the risk and liability in connection therewith. We do not suggest violation of any existing patents or give permission to practice any patented invention without license.

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