



MATERIAL SAFETY DATA SHEET  
BurnEx™ ADP480

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1. Chemical Product and Company Identification

Trade Name: BurnEx™ ADP480  
Chemical Name: Antimony Pentoxide  
Synonyms: None  
Product Code: ADP480  
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 RN</u>	<u>Exposure Limits</u>	<u>Percent By Weight</u>
Antimony Pentoxide partially ion-exchanged with sodium ions	1314-60-9	0.5mg/M <sup>3</sup> (Antimony)	79 - 91
Ethoxylated Fatty Alkyl Amine	61791-26-2	None.	9 - 15
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	WW3150000	05-2117294594-30-0000
Water	231-791-2	ZC0110000	None.

3. Hazard Identification

Emergency 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.  
Ingestion: Gastrointestinal effects such as vomiting and diarrhea have been reported in both humans and animals after ingesting antimony compounds.  
Inhalation: Pneumoconiosis and upper airway inflammation.  
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 from exposure source, consult 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 US Department of Health, Education and Welfare document <u>Occupational Exposure to Antimony</u> for details.

**5. Fire Fighting Measures**

Flammability:	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 such as neoprene.
Eye Protection:	Wear approved safety glasses.

**9. Physical and Chemical Properties**

Appearance:	White powder.
Odor:	None.
Physical State:	Solid. BurnEx ADP480 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:	Not soluble.

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**9. Physical and Chemical Properties, continued**

Density: 3700 Kg/M<sup>3</sup>  
Specific Gravity: 3.7  
Volatile by Weight: 2%  
Viscosity: Not applicable.  
Explosion Limits: None.  
Partition Coefficient: Not available, but soluble in non-polar solvents.  
Evaporation Rate: Not available.

**10. Stability and Reactivity**

Chemical Stability: Stable under normal ambient and anticipated storage and handling conditions.  
Conditions To Avoid: No recommendation.  
Incompatibility With Other Materials: Use of BurnEx ADP480 under acidic reducing conditions may form the poisonous gas stibine.  
Hazardous Decomposition Products: None.  
Hazardous Polymerization: Will not occur.

**11. Toxicological Information**

Material LD<sub>50</sub>, Rat, Oral  
Antimony Pentoxide: Greater than 4123 mg/kg  
Ethoxylated Fatty Alkyl Amine: 200-2000 mg/kg  
Water: None reported  
Eye Effects: No published data available. This material may be irritating.  
Skin Effects: No published data available. Dry skin has been reported.  
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: Recycle or dispose BurnEx ADP480 in a landfill approved for chemical waste.  
United States: Should BurnEx ADP480 become waste the EPA TLCP test should be performed. If test is not done 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 Information**U.S. Federal RegulationsEPA 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 RN</u>	<u>Percent By Weight</u>
Antimony Pentoxide	1314-60-9	79 - 91

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 ADP480.

Canadian Regulations

Domestic Substance List:

All ingredients listed.

WHMIS:

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

Transportation of Dangerous Goods (TDG):

Not applicable. BurnEx ADP480 does not meet dangerous goods criteria.

Controlled Products Regulations:

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

EC Regulations

Classification:

Harmful.

Symbol:

■ Xn St. Andrew's Cross

Risk Phrases:

R20/22 Harmful by inhalation and if swallowed.

Safety Phrases:

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

International Inventory Status

Ingredients are included:

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

**16. Other Information**

NFPA 704 Hazard Rating:

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

HMIS® Hazard Rating:

Health - 1, Flammability - 0, Reactivity - 0

Recommended Use:

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

BurnEx ADP480 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.

Work Alert:

Workers using BurnEx ADP480 should read and understand this MSDS and be trained in the proper use of this material.

MSDS Prepared By:

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Revision Date:

December 1, 2008

Supersedes:

September 21, 2007

This MSDS has been prepared with data from Nyacol Nano Technologies, Inc.'s laboratories, raw material suppliers and government publications.

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