

W. R. GRACE
MATERIAL SAFETY DATA SHEET

Product Name: FlameSafe® Arc Proofing Boot Liquid
MSDS ID Number: Z-01558

MSDS Date: 07/24/2002

SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: FlameSafe® Arc Proofing Boot Liquid
Intermediate
MSDS Number: Z-01558
Cancelled MSDS Number: NEW
MSDS Date: 08/12/2002
Chemical Family Name: Intermediate material of variable composition containing PVC and Benzenedicarboxylic acid, alkyl esters as major ingredients.
Product Use: Intermediate Fireproofing Product.
Chemical Formula: Mixture-NA
CAS # (Chemical Abstracts Service Number): Mixture-NA

Manufactured by:
W.R.Grace & Co.-Conn. Grace Canada, Inc.
62 Whittemore Avenue 294 Clements Road West
Cambridge, MA 02140 Ajax, Ontario L1S 3C6

In Case of Emergency Call:

In USA: (617) 876-1400 In Canada: (905) 683-8561

SECTION 2 - COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient	CAS#	Percent (max)
1,2-Benzenedicarboxylic acid, di-C9-11-branched alkyl esters	068515-49-1	10-25
Aluminum oxide	001344-28-1	1-10
Antimony trioxide	001309-64-4	1-10
Ashes, residues	068131-74-8	10-25
Barium metaborate	013701-59-2	1-10
Phenol, isopropylated, phosphate (3:1)	068937-41-7	1-10
PVC (Chloroethylene, polymer)	009002-86-2	25-50
Soybean oil, epoxidized	008013-07-8	1-10
Triphenyl phosphate	000115-86-6	1-10

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SECTION 3 - HAZARDS IDENTIFICATION

Emergency Overview:

Warning!

Causes severe eye irritation.
Causes skin irritation.
Causes respiratory tract irritation.
May be fatal if ingested.
May cause reproductive effects

HMIS Rating:

Health:	2*
Flammability:	0
Reactivity:	0
Personal Protective Equipment:	E (See Section 8)

Potential Health Effects:

Inhalation:

Causes respiratory tract irritation.
Antimony oxide studies have suggested an increased risk of lung cancer.
Effects include: No other effects expected unless listed below.

Eye Contact:

Eye contact can cause severe irritation.
Prolonged eye contact can result in redness and itching.

Skin Contact:

Skin contact causes irritation.
Prolonged skin contact can result in irritation causing redness and itching.
May cause sensitization.
May cause dermatitis.

Skin Absorption:

Not expected to be harmful if absorbed through the skin.

Ingestion:

May be poisonous if ingested.
Ingestion of large quantities may cause irritation to mouth, esophagus, stomach, and nasal passage. Effects include: Nausea, pain, vomiting, coma, convulsions, bloody stool, low blood pressure, pulmonary congestion and slow pulse.
In animal studies, borates cause reproductive and developmental effects. May cause damage to cardiovascular system. Antimony oxide, in one study of exposed women, reported an excess of premature births, spontaneous abortions, and retarded offspring. Additional studies suggested possible reduced sexual potency among male workers. Liver and kidney degeneration has also been reported.

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SECTION 4 - FIRST AID MEASURES:

Skin Contact:

Wash with soap and water.

If discomfort or irritation persists, consult a physician.

Remove contaminated clothing and wash before reuse.

Eye Contact:

Flush eyes with water for at least 15 minutes while holding eyelids open.

Get immediate medical attention.

Ingestion:

Do not induce vomiting.

Never give anything by mouth to an unconscious person.

Call a physician or poison control center immediately.

Inhalation:

If symptoms develop, get fresh air. If symptoms persist, consult a physician.

If breathing has stopped, give artificial respiration then oxygen if needed.

SECTION 5 - FIRE AND EXPLOSION HAZARD DATA

Flash Point:	Not Available
Flash Point Method:	Not Applicable
Lower Explosion Limit:	Not Available
Upper Explosion Limit:	Not Available
Auto-Ignition Temperature:	Not Available

NFPA Rating:

Health:	1
Flammability:	0
Reactivity:	0

Extinguishing Media: Product will not support combustion under normal conditions. In intense fires, smoke containing hydrochloric acid (HCL) may be released. Use alcohol foam, Carbon dioxide, dry chemical or water to treat surrounding fire.

Special Fire Fighting Procedures:

Wear self-contained breathing apparatus and complete personal protective equipment when potential for exposure to vapors or products of combustion exist. Isolate area and keep unnecessary people away.

Unusual Fire and Explosion Hazards:

Consult Hazardous decomposition and conditions to avoid information contained in MSDS section 10.

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SECTION 6 - ACCIDENTAL RELEASE MEASURES:

Spills/Leaks:

Use proper personal protective equipment. Do not flush to sewer or allow to enter waterways. Keep unnecessary people away.

SECTION 7 - HANDLING AND STORAGE

Precautionary Measures:

Avoid contact with eyes, skin and clothing.
 Do not take internally.
 Practice good personal hygiene to avoid ingestion.
 Use only with adequate ventilation.
 Wash clothing before reuse.
FOR PROFESSIONAL USE ONLY. KEEP OUT OF CHILDREN'S REACH.

SECTION 8 - EXPOSURE CONTROLS AND PERSONAL PROTECTIVE EQUIPMENT

EXPOSURE GUIDELINES (US)

Ingredient	ACGIH TLV			OSHA PEL			Other
	TWA	STEL	Ceiling	TWA	STEL	Ceiling	
1,2-Benzenedicarboxylic acid, di-C9-11-branched alkyl esters	-	-	-	-	-	-	-
Aluminum oxide	10 mg/m ³ TWA (as Al, the value is for total dust containing no asbestos and < 1% crystalline silica)	-	-	10 mg/m ³ TWA (total dust); 5 mg/m ³ TWA (respirable fraction)	-	-	-
Antimony trioxide	-	-	-	-	-	-	-
Ashes, residues	-	-	-	-	-	-	-
Barium metaborate	-	-	-	-	-	-	-
Phenol, isopropylated, phosphate (3:1)	-	-	-	-	-	-	-
PVC (Chloroethylene, polymer)	-	-	-	-	-	-	-
Soybean oil, epoxidized	-	-	-	-	-	-	-
Triphenyl phosphate	3 mg/m ³ TWA	-	-	3 mg/m ³ TWA	-	-	-

EXPOSURE GUIDELINES (CANADA)

Employers should consult local Provincial regulatory limits for exposure guidelines which may vary locally.

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Engineering Controls: Not generally required.

Personal Protective Equipment:

Respiratory Protection: If vapors are generated during processing, an approved organic vapor respirator is recommended.

Skin Protection: Impervious (PVC, latex or nitrile) gloves should be worn anytime direct contact is possible.

Eye Protection: Safety glasses or goggles should be worn.

Work/Hygienic Practices: Use good personal hygiene practices.

Processing of polyvinyl chloride may result in low concentrations of unpolymerized vinyl chloride. Vinyl chloride is a known human carcinogen. Contact with strongly acidic aqueous systems can release solubilized barium salts, which are highly toxic by ingestion.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Liquid
Appearance/Odor:	Gray or organic tinted liquid
Odor Threshold: (ppm)	Not Determined
pH:	Not Applicable
Vapor Pressure: (Mm Hg)	Not Available
Vapor Density: (Air = 1)	Not Applicable
Solubility In Water:	Appreciable
Specific Gravity: (Water = 1)	Not Available
Evaporation Rate: (Butyl Acetate = 1)	Not Applicable
Boiling Point:	>212°F/100°C
Viscosity:	Not Available
Bulk Density: (Pounds/Cubic Foot)(Pcf)	Not Applicable
% Volatiles (gr/L): (70°F) (21°C)	Not Available

SECTION 10 - STABILITY AND REACTIVITY

Chemical Stability:	Stable
Conditions To Avoid:	Heat, Oxidizing materials, Strong oxidizers, Strong acids, bromine trifluoride, perchloric acid and chlorinated rubber.
Hazardous Polymerization:	Will not polymerize.
Hazardous Decomposition Products:	Carbon dioxide, Carbon monoxide, Acrolein, Formaldehyde, Aldehydes, Ketones, Hydrochloric acid, methane, ethane, hydrocarbons and stibine gas.

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SECTION 11 - TOXICOLOGICAL INFORMATION

<u>Ingredient(No data unless listed.)</u>	<u>CAS Number</u>	<u>LD50 and LC50</u>
Antimony trioxide	001309-64-4	Oral LD50 Rat : >34600 mg/kg
Soybean oil, epoxidized	008013-07-8	Oral LD50 Rat : 40 gm/kg
Triphenyl phosphate	000115-86-6	Oral LD50 Rat : 3500 mg/kg Oral LD50 Mouse : 1320 mg/kg Dermal LD50 Rabbit : >7900 mg/kg

Carcinogenicity:

Ingredient	IARC Group 1	IARC Group 2A	IARC Group 2B	NTP Known	NTP Suspect	OSHA
1,2-Benzenedicarboxylic acid, di-C9-11-branched alkyl esters	No	No	No	No	No	No
Aluminum oxide	No	No	No	No	No	No
Antimony trioxide	No	No	Yes	No	No	No
Ashes, residues	No	No	No	No	No	No
Barium metaborate	No	No	No	No	No	No
Phenol, isopropylated, phosphate (3:1)	No	No	No	No	No	No
PVC (Chloroethylene, polymer)	No	No	No	No	No	No
Soybean oil, epoxidized	No	No	No	No	No	No
Triphenyl phosphate	No	No	No	No	No	No

Mutagenicity:	Not applicable.
Teratogenicity:	Not applicable.
Reproductive Toxicity:	Antimony oxide has been shown to cause reproductive effects.

SECTION 12 - ECOLOGICAL INFORMATION

Environmental Fate:	No data available for product.
Ecotoxicity:	No data available for product.

SECTION 13 - DISPOSAL CONSIDERATIONS

Waste Disposal Procedures:

Consult all regulations (federal, state, provincial, local) or a qualified waste disposal firm when characterizing waste for disposal. Liquid waste should be treated as hazardous due to the presense of a lead compound. Dispose of waste in accordance with all applicable regulations.

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SECTION 14 - TRANSPORTATION INFORMATION

Proper Shipping Name:	Not Applicable
UN/NA Number:	Not Applicable
Domestic Hazard Class:	Nonhazardous
Surface Freight Classification:	Not Determined
Label/Placard Required:	Not Applicable

SECTION 15 - REGULATORY INFORMATION

REGULATORY CHEMICAL LISTS:

CERCLA (Comprehensive Response Compensation and Liability Act):
(None present unless listed below)

<u>Chemical Name</u>	<u>CAS #</u>	<u>Wt %</u>	<u>CERCLA RQ</u>
Antimony trioxide	001309-64-4	2.0099	final RQ = 1000 pounds (454 kg)

SARA Title III (Superfund Amendments and Reauthorization Act)

SARA Section 312/Tier I & II Hazard Categories:

Health Immediate (acute)	Yes
Health Delayed (chronic)	Yes
Flammable	No
Reactive	No
Pressure	No

302 Reportable Ingredients (Identification Threshold 1%):

<u>Chemical Name</u>	<u>CAS #</u>	<u>Wt %</u>	<u>SARA 302</u> <u>TPQ</u>
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313 Reportable Ingredients (Chemicals present below reporting threshold are exempt):

<u>Chemical Name</u>	<u>CAS #</u>	<u>Wt %</u>
Aluminum oxide	001344-28-1	4.5292
Arsenic	007440-38-2	.0101
Barium compounds	RR-00555-0	.101
Lead compounds, organic	RR-02632-4	.909
Zinc	007440-66-6	.034
Zinc compounds	RR-00578-7	.68

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National Volatile Organic Compound Emission Standards For Architectural Coatings:

Volatile Organic Content: (gr/L) Not Applicable

WHMIS Classification(s): D2 B

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR). This MSDS contains all the information required by the CPR.

State Regulatory Information:

California Proposition 65: WARNING! This product contains substances known to the state of California to cause cancer, birth defects or other reproductive harm.

Massachusetts Hazardous Substance List(Identification threshold 0.001%(1ppm)):

<u>Chemical Name</u>	<u>CAS #</u>	<u>Wt %</u>
Arsenic	007440-38-2	.0101

New Jersey Hazardous Substance List(Identification threshold (0.1%)):

<u>Chemical Name</u>	<u>CAS #</u>	<u>Wt %</u>
Aluminum oxide	001344-28-1	4.5292
Barium compounds	RR-00555-0	.101
PVC (Chloroethylene, polymer)	009002-86-2	33.67
Zinc compounds	RR-00578-7	.68

Pennsylvania Hazardous Substance List(Identification threshold 0.01%):

<u>Chemical Name</u>	<u>CAS #</u>	<u>Wt %</u>
Arsenic	007440-38-2	.0101

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CHEMICAL INVENTORY STATUS:

All chemicals in this product are listed or exempt from listing in the following countries:

US	CANADA		EUROPE	AUSTRAL IA	JAPAN	KOREA	PHILIPPINES
TSCA	DSL	NDSL	EINECS/ELINCS	AICS	ENCS	ECL	PICCS
Yes	Not Determined	Not Determined	Not Determined	Not Determined	Not Determined	Not Determined	Not Determined

SECTION 16 - OTHER INFORMATION

Non-Hazardous Ingredient Disclosure:

Chemical Name

CAS Number

Pentaerythritol Ester of Fatty Acids

NJ801415068P

Water

007732-18-5

Prepared by: EH&S Department

Approved by: EH&S Department

Approved Date: 08/12/2002

Disclaimer:

"The data included herein are presented in accordance with various environment, health and safety regulations. It is the responsibility of a recipient of the data to remain currently informed on chemical hazard information, to design and update its own program and to comply with all national, federal, state and local laws and regulations applicable to safety, occupational health, right-to-know and environmental protection."