

**W. R. GRACE**  
MATERIAL SAFETY DATA SHEET

Product Name: Perm-A-Barrier VP Low Temp Part B

MSDS ID Number: M-85844

MSDS Date: 11/04/2009

**SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION**

**Product Name:** Perm-A-Barrier VP Low Temp Part B  
**MSDS Number:** M-85844  
**Cancelled MSDS Number:** M-85837  
**MSDS Date:** 11/04/2009  
**Chemical Family Name:** Mixture of ingredients listed in MSDS section 2  
**Product Use:** Low temperature PAB VP additive  
**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**

<b>Ingredient</b>	<b>CAS#</b>	<b>Percent (max)</b>
Calcium nitrate	010124-37-5	1-10
Calcium nitrite	013780-06-8	10-25
Ethyl alcohol	000064-17-5	25-50
Isopropyl alcohol	000067-63-0	1-10
Methyl alcohol	000067-56-1	1-10
Ammonium Hydroxide	001336-21-6	1-10

**SECTION 3 - HAZARDS IDENTIFICATION**

**Emergency Overview:**

**Warning !**

Flammable liquid.  
Vapors may ignite explosively.  
Causes severe eye irritation.  
Causes skin and respiratory irritation.  
May be fatal if ingested.  
Dispose of mixed product immediately after shelf life (four weeks) to avoid hazardous gas generation in the headspace of closed containers.

**HMIS Rating:**

Health: 3\*  
Flammability: 3  
Reactivity: 0  
Personal Protective Equipment: B,G (see section)

**Potential Health Effects:**

**Inhalation:** Causes respiratory tract irritation. May cause coughing and shortness of breath. Prolonged exposure may cause central nervous system depression, characterized by headache, dizziness, drowsiness, nausea, unconsciousness, and coma  
Inhalation may result in effects similar to those under ingestion.  
**Eye Contact:** Eye contact can cause severe irritation. May cause painful sensitization to light. Prolonged eye contact can result in tissue damage.  
**Skin Contact:** Skin contact causes irritation. May cause cyanosis of extremities  
Prolonged skin contact can result in irritation causing redness and itching.  
May defat skin.

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Skin absorption of the Methyl alcohol fraction of this product may cause metabolic effects similar to those outlined under ingestion.

**Ingestion:** Harmful or fatal if ingested.

Liver and kidney, heart, reproductive and fetal effects from chronic overexposure to some ingredients has been demonstrated in laboratory animals. Possible effects include CNS depression, headache, drowsiness, nausea, fatigue, pulmonary edema, dizziness, increased reaction time coma and possible death due to respiratory failure.

When ingested Methyl alcohol acts as a narcotic/neurotoxin and may cause mild inebriation and subsequent drowsiness, headache, weakness, vertigo, and violent pain in the back, abdomen and extremities. Effects on the eye may include blurred or dimmed vision, eye pain, partial blindness or permanent blindness may occur. Ingestion of Methyl alcohol may be fatal. Methyl alcohol poisoning may cause degenerative damage to the kidneys, liver, heart and other organs due to metabolic acidosis.

Ingestion of large amounts of nitrates/nitrites may cause nausea, vomiting, cyanosis (due to methemoglobin formation), abnormally slow respiration, collapse and coma. Repeated small doses may cause a fall in blood pressure, rapid pulse, headache and visual disturbances.

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**SECTION 4 - FIRST AID MEASURES:**

**Skin Contact:** In case of skin contact, clean fingernails and wash skin with soap and water. If residue remains from mixed components, clean with waterless handcream or abrasive soap. Never use solvents.

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.

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**SECTION 5 - FIRE AND EXPLOSION HAZARD DATA**

<b>Flash Point:</b>	69.8F
<b>Flash Point Method:</b>	Closed cup.
<b>Lower Explosion Limit:</b>	Not Available
<b>Upper Explosion Limit:</b>	Not Available
<b>Auto-Ignition Temperature:</b>	Not Available

**NFPA Rating:**

<b>Health:</b>	<b>3</b>
<b>Flammability:</b>	<b>3</b>
<b>Reactivity:</b>	<b>0</b>

**Extinguishing Media:** In case of fire, use water spray, dry chemical, Carbon dioxide or foam.

**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. Water may be used to cool containers to prevent pressure build-up and possible auto-ignition or explosion. Avoid breathing hazardous vapors or products of combustion, keep upwind. Isolate area and keep unnecessary people away. Prevent run-off from fire control or dilution from entering streams or drinking water supplies.

**Unusual Fire and Explosion Hazards:** This material, if dried, will become an oxidizer which may provide oxygen to combustible materials.

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**SECTION 6 - ACCIDENTAL RELEASE MEASURES:**

**Spills/Leaks:** Do not allow material to saturate ground, enter drains, runoffs, streams, lakes or ground water. Immediately absorb all spills with dry inert material, such as sand and dispose. Use proper personal protective equipment.

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**SECTION 7 - HANDLING AND STORAGE**

**Precautionary Measures:** Keep away from heat, sparks and flame.  
 Enforce no smoking policy for all trades present on job site.  
 A warning sign identifying that a flammable liquids is in use should be displayed.  
 Use proper equipment grounding procedures and spark proof tools.  
 Use only with intrinsically safe equipment.  
 Keep container closed tightly when not in use to avoid unnecessary release of vapors and to prevent spills.  
 Do not reuse empty containers.  
 Do not mix directly with acidic materials. Hazardous gas may form.  
 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.  
 Wear respiratory protection during spray applications.  
 Promptly cleanse hands after handling.  
 Un-used mixed product must be disposed of after 4 weeks (shelf life). Mixed component sealed containers may evolve hazardous gas in the head space. This gas may present a physical or health hazard danger. Containers may also expand and lids may become dislodged or containers may burst due to pressure from mixed product off gassing.

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			
	TWA	STEL	Ceiling	TWA	STEL	Ceiling	Substance Specific and Mineral Dust PELs
Calcium nitrate	-	-	-	-	-	-	-
Calcium nitrite	-	-	-	-	-	-	-
Ethyl alcohol	1000 ppm TWA	-	-	1000 ppm TWA; 1900 mg/m3 TWA -	-	-	-
Isopropyl alcohol	200 ppm TWA	400 ppm STEL	-	400 ppm TWA; 980 mg/m3 TWA -	-	-	-
Methyl alcohol	200 ppm TWA	250 ppm STEL	-	200 ppm TWA; 260 mg/m3 TWA -	-	-	-
Ammonium Hydroxide	-	-	-	-	-	-	-
Ammonia	25 ppm	35 ppm		50 ppm TWA; 35 mg/m3 TWA			

**EXPOSURE GUIDELINES (CANADA)**

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

**Engineering Controls:** Explosion-proof portable ventilation is required to prevent vapor build-up during application in enclosed or depressed areas. Vapors are heavier than air and will build-up in confined spaces without ventilation. Vapor build-up can be life threatening. Portable equipment such as a Coppus Vano portable blower/exhauster should be used in accordance with the manufacturer's instructions.

**Personal Protective Equipment:**

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**Respiratory Protection:** For spray applications a chemical cartridge respirator with organic vapor cartridge and a prefilter for dusts/mists is required. Supplied air respirator (SCBA) is required at exposure levels above the capabilities of a chemical cartridge respirator.

**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.

You and your personnel must completely understand the fire and explosion hazards before using flammable liquid based products.

Do not add amines to this product. Cancer-causing nitrosamines may be formed. Direct contact with material causing the pH to fall below specification can result in the formation of NO<sub>x</sub> gas creating a hazardous situation. Nitric oxide (NO) is a colorless, odorless gas. Nitrogen dioxide is a reddish-brown gas with a highly pungent, bleach-like odor. Exposure can cause irritation to eyes and respiratory system and effect the central nervous and cardiovascular systems. Severe overexposure can be fatal.

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**SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES**

<b>Physical State:</b>	Liquid
<b>Appearance/Odor:</b>	Clear solution
<b>Odor Threshold: (ppm)</b>	Not Determined
<b>pH:</b>	10.5-11.5
<b>Vapor Pressure: (Mm Hg)</b>	Unknown
<b>Vapor Density: (Air = 1)</b>	Unknown
<b>Solubility In Water:</b>	1.15-1.25
<b>Specific Gravity: (Water = 1)</b>	Not Available
<b>Evaporation Rate: (Butyl Acetate = 1)</b>	Unknown
<b>Boiling Point:</b>	>212°F/100°C
<b>Viscosity:</b>	Unknown
<b>Bulk Density: (Pounds/Cubic Foot)(Pcf)</b>	Not Applicable
<b>% Volatiles (gr/L): (70°F)(21°C)</b>	Not Available

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**SECTION 10 - STABILITY AND REACTIVITY**

**Chemical Stability:** Stable

**Conditions To Avoid:** Heat, Sparks, Open flames, Oxidizing materials, Strong acids, Organic materials, Ammonium salts, Activated carbon, Reducing agents, Cyanides, Aldehydes, Most metals, ammonia, hydrazine, Avoid direct contact with other material which could cause the pH of this product to fall. These conditions can result in the formation of Nitrogen oxide (NO, NO<sub>2</sub>) gas, creating a hazardous situation. acetyl chloride and inorganic acids. Un-used mixed product must be disposed of after 4 weeks (shelf life). Mixed component sealed containers may evolve hazardous gas in the head space. This gas may present a physical or health hazard danger. Containers may also expand and lids may become dislodged or containers may burst due to pressure from mixed product off gassing.

**Hazardous Polymerization:** Will not polymerize.

**Hazardous Decomposition Products:** Carbon dioxide, Carbon monoxide, Formaldehyde and Oxides of nitrogen.

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**SECTION 11 - TOXICOLOGICAL INFORMATION**

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**Ingredient(No data unless listed.)**                      **CAS Number**                      **LD50 and LC50**

Calcium Nitrite    013780-06-8    Oral Rat LD50: 283 mg/kg

**Carcinogenicity:**

Ingredient	IARC Group 1	IARC Group 2A	IARC Group 2B	NTP Known	NTP Suspect	OSHA
Calcium nitrate	No	No	No	No	No	No
Calcium nitrite	No	No	No	No	No	No
Ethyl alcohol	Yes	No	No	No	No	Yes
Isopropyl alcohol	No	No	No	No	No	No
Methyl alcohol	No	No	No	No	No	No
Ammonium Hydroxide	No	No	No	No	No	No
Nitrate Compounds	No	No	No	No	No	No

**Mutagenicity:** Ethyl alcohol has been associated with mutagenic effects.

**Teratogenicity:** Not applicable.

**Reproductive Toxicity:** Ethyl alcohol has been associated with 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. Waste/rejected product consisting of unused liquid product in sealed containers is a EPA Hazardous Waste (due to its ignitability). Dispose of all waste at a disposal facility as permitted by applicable government regulations. Do not dry this material. If dried, this material would be an oxidizer and classified as a reactive waste according to the EPA.

**SECTION 14 - TRANSPORTATION INFORMATION**

**Proper Shipping Name:** Flammable liquid, n.o.s. (Ethyl alcohol) PG II

**UN/NA Number:** UN 1993

**Domestic Hazard Class:** Class 3

**Surface Freight Classification:** Not Applicable

**Label/Placard Required:** Flammable liquid

**SECTION 15 - REGULATORY INFORMATION**

**REGULATORY CHEMICAL LISTS:**

**CERCLA (Comprehensive Response Compensation and Liability Act):**

**(None present unless listed below)**

<b><u>Chemical Name</u></b>	<b><u>CAS #</u></b>	<b><u>Wt %</u></b>	<b><u>CERCLA RQ</u></b>
Methyl alcohol	000067-56-1	2.245	5000 lb final RQ; 2270 kg final RQ

**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	Yes
Reactive	No
Pressure	No

**302 Reportable Ingredients (Identification Threshold 1%):**

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

<b><u>Chemical Name</u></b>	<b><u>CAS #</u></b>	<b><u>Wt %</u></b>
Isopropyl alcohol	000067-63-0	2.245
Methyl alcohol	000067-56-1	2.245

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Nitrate Compounds

RR-03804-0

1.584

**National Volatile Organic Compound Emission Standards For Architectural Coatings:**

**Volatile Organic Content:** (gr/L) 113 g/L applied as two component product.

**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 0.0001%(1ppm)):**

<u>Chemical Name</u>	<u>CAS #</u>	<u>Wt %</u>
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**New Jersey Hazardous Substance List(Identification threshold (0.1%)):**

<u>Chemical Name</u>	<u>CAS #</u>	<u>Wt %</u>
Isopropyl alcohol	000067-63-0	2.245
Methyl alcohol	000067-56-1	2.245

**Pennsylvania Hazardous Substance List(Identification threshold 0.01%):**

<u>Chemical Name</u>	<u>CAS #</u>	<u>Wt %</u>
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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	AUSTRALIA	JAPAN	KOREA	PHILIPPINES
TSCA	DSL	NDSL	EINECS/ELINCS	AICS	ENCS	ECL	PICCS
Yes	Yes	No	No	No	No	No	No

**SECTION 16 - OTHER INFORMATION**

**Non-Hazardous Ingredient Disclosure:**

<u>Chemical Name</u>	<u>CAS Number</u>
Water	007732-18-5

**Prepared by:** EH&S Department

**Approved by:** EH&S Department

**Approved Date:** 11/04/2009

**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."