

SECTION 1: IDENTIFICATION

1.1 PRODUCT IDENTIFIER

Product Name: F1880R POLYOL COMPONENT B
Product Code: F1880R, F1880R-500

1.2 RECOMMENDED USE OF CHEMICAL AND RESTRICTIONS ON USE

Product Use: Spray Foam Insulation
 Use this product in accordance with all local, regional, national and international regulations.

1.3 DETAILS OF THE SUPPLIER OF THE SAFETY DATA SHEET

Name/Address: Gaco Western LLC
 1245 Chapman Dr.
 Waukesha, WI, 53186-5942
 USA
Telephone Number: 800-331-0196 / **International:** 001-800-331-0196
Email: sds@gaco.com
Website: www.gaco.com

Distributed By:
 Distribué Par:
 Pinnacle West Enterprises Inc.
 31897 Mercantile Way
 Abbotsford, BC V2T 4C3
 Tel: (800) 901-0088

1.4 EMERGENCY TELEPHONE NUMBER

For Chemical Emergency
 Spill, Leak, Fire, Exposure, or Incident
 Within USA and Canada: 1-800-424-9300
 Outside USA and Canada: +1-703-527-3887 (collect calls accepted)

SECTION 2: HAZARD(S) IDENTIFICATION

2.1 CLASSIFICATION OF THE CHEMICAL

Hazard class:

HAZARD CLASSIFICATION	CATEGORY
Skin Corrosion/Irritation	2
Eye Damage/Irritation	2A
STOT RE - Specific Toxic Organ Toxicity (Repeated Exposure)	2

2.2 LABEL ELEMENTS

Hazard pictogram: GHS07, GHS08



SAFETY DATA SHEET

Signal word: Warning

Hazard statement: Causes skin irritation
Causes serious eye irritation
May cause damage to organs <kidney> through prolonged or repeated exposure <oral>

Prevention: Do not breathe dust/fume/gas/mist/vapors/spray.
Wash thoroughly after handling.
Wear protective gloves/eye protection/face protection.

Response: Specific treatment (see Section 8 on this label).
If on skin: Wash with plenty of water.
Take off contaminated clothing and wash it before reuse.
If skin irritation occurs: Get medical advice/attention.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/attention.

Storage: Store away from incompatible materials.

Disposal: Dispose of contents and container in accordance with all local, regional, national and international regulations.

2.3 ADDITIONAL INFORMATION

Main symptoms: Prolonged exposure may cause chronic effects. May cause damage to organs <kidney> through prolonged or repeated exposure <oral>. Causes skin irritation. May cause redness and pain. Causes serious eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision.

Hazards not otherwise specified: None Known

68 % of the mixture consists of ingredient(s) of unknown acute toxicity

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 MIXTURES

Material	CAS No.	Weight %*
1,2-Benzenedicarboxylic acid, 3,4,5,6-tetrabromo-, mixed esters with diethylene glycol and propylene glycol	77098-07-8	1-5%
Diethylene glycol	111-46-6	1-5%
2,2'-(Ethylenedioxy)diethanol	112-27-6	1-5%
Pentamethyldiethylenetriamine	3030-47-5	0.5-1.5%
Pentamethyldipropylene triamine	3855-32-1	0.1-1.0%
Tertiary Amine	N/A	0.1-1.0%

*The exact percentage (concentration) of composition has been withheld as a trade secret in accordance with paragraph (i) of §1910.1200.

SECTION 4: FIRST-AID MEASURES

4.1 DESCRIPTION OF THE FIRST AID MEASURES

General information: Ensure that medical personnel are aware of the materials(s) involved, and take precautions to protect themselves.

Inhalation: Move to fresh air. Call a physician if symptoms develop or persist.

- Skin contact:** Wash with plenty of soap and water. Take off contaminated clothing and wash before reuse. If skin irritation occurs, get medical advice/attention.
- Eye contact:** Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.
- Ingestion:** Rinse mouth. Get medical attention if symptoms occur.

4.2 MOST IMPORTANT SYMPTOMS AND EFFECTS, BOTH ACUTE AND DELAYED

Prolonged exposure may cause chronic effects.
 May cause damage to organs <kidney> through prolonged or repeated exposure <oral>.
 Causes skin irritation. May cause redness and pain.
 Causes serious eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision.

4.3 INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENTS NEEDED

- Note to physicians:** Treat symptomatically. Symptoms may be delayed.
- Specific treatments:** In case of accident or if you feel unwell, seek medical advice (show the label or SDS where possible).

SECTION 5: FIRE-FIGHTING MEASURES

5.1 EXTINGUISHING MEDIA

- General hazards:** No unusual fire or explosion hazard.
- Suitable extinguishing media:** Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2)
- Unsuitable extinguishing media:** Do not use water jet as an extinguisher as this will spread the fire.

5.2 SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE

- Specific hazards:** During fire, gases hazardous to health may be formed.
- Products of combustion:** May include, and are not limited to: oxides of carbon.

5.3 Special protective equipment and precautions for fire-fighters (PPE)

- Special protective equipment for fire-fighters:**
 Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
- Special fire-fighting procedures:** Keep upwind of fire. Move containers from fire area if you can do it without risk.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES

For personal protection, see Section 8 of this SDS.

6.2 METHODS AND MATERIALS FOR CONTAINMENT AND CLEANING - UP

- Methods for containment:** Contain and/or absorb spill with inert material (e.g. sand, vermiculite), then place in a suitable container. Do not flush to sewer or allow to enter waterways. Use appropriate Personal Protective Equipment (PPE).
- Methods for cleaning-up:** Stop the flow of material, if this is without risk. Dike far ahead of spill for later disposal. Following product recovery, flush area with water. For waste disposal, see Section 13 of the SDS.

Large spills:	Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water.
Small spills:	Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. Never return spills to original containers for re-use.
Environmental precautions:	Avoid discharge into drains, water courses or onto the ground.

SECTION 7: HANDLING AND STORAGE

7.1 PRECAUTIONS FOR SAFE HANDLING

Precautions for Safe handling:	Observe good industrial hygiene practices.
General hygiene advice:	Ensure that medical personnel are aware of the materials(s) involved, and take precautions to protect themselves.

7.2 CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES

Safe storage:	Store away from incompatible materials.
Specific use:	Spray Foam Insulation
Technical measures:	No specific recommendations.
Incompatible materials:	None known, avoid strong oxidizing agents.
Safe packaging material:	No specific recommendations.
Precautions:	Use personal protective recommended in Section 8 of the SDS.
Safe handling advice:	Observe good industrial hygiene practices.
Suitable storage conditions:	Store away from incompatible materials.
Handling-technical measures:	No specific recommendations.
Local and general ventilation:	Provide adequate ventilation.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 CONTROL PARAMETERS

Control parameters: Follow standard monitoring procedures.

Exposure limits:

1,2-Benzenedicarboxylic acid, 3,4,5,6-tetrabromo-, mixed esters with diethylene glycol and propylene glycol
ACGIH: 0.15 ppm

Diethylene glycol
NIOSH REL: Ethylene glycol [Ceiling 50 ppm]
OSHA PEL †: none

8.2 EXPOSURE CONTROLS

Engineering measures to reduce exposure:

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable

level.

8.3 INDIVIDUAL PROTECTIVE MEASURES

General: Use personal protective equipment as required.
Eye protection: Wear safety glasses with side shields (or goggles).
Hand protection: Wear appropriate chemical resistant gloves.
Respiratory protection: In case of insufficient ventilation, wear suitable respiratory equipment.
Skin and body protection: Wear suitable protective clothing.
Hygiene measures: Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.
Thermal hazards: Wear appropriate thermal protective clothing, when necessary.

Environmental exposure controls: Environmental manager must be informed of all major releases.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Slightly viscous liquid
Color: Light Brown
Form: Liquid
Odor: Mild amine
Odor Threshold: Not applicable
Physical State: Liquid
pH (at 20°C): 9-10
Melting Point/Freezing Point: Not applicable
Initial Boiling Point and Boiling Range: Not applicable
Flash Point: >200°F/>93.3°C
Evaporation Rate: Not applicable
Flammability (solid, gaseous): Not Flammable
Lower Flammability/Explosive Limit: Not applicable
Upper Flammability/Explosive Limit: Not applicable
Vapor Pressure (mm Hg @38°C): Not applicable
Vapor Density: Not applicable
Density (lb/gal): 10.23
Relative Density/Specific Gravity: 1.23
Solubility in water/miscibility: Soluble
Partition coefficient: n-octanol/water: Not applicable
Auto-ignition Temperature: Not applicable
Decomposition Temperature: Not applicable
Viscosity (at 25°C) g/L: 1100 cPs
Oxidizing Properties: Not applicable
Explosive Properties: Not applicable
VOC: <25 g/L (<0.21 lb/gal)
Solvent content - Organic: Not applicable
Solvent content - Water: Not applicable
Solvent content - Solids: 86%
Other information: Not applicable
Incompatibilities: None known, avoid strong oxidizing agents.

SECTION 10: STABILITY AND REACTIVITY

- 10.1 REACTIVITY** The product is stable and non-reactive under normal conditions of use, storage and transport.
- 10.2 CHEMICAL STABILITY**
Chemical stability: Material is stable under normal conditions.
Materials to avoid: The product is stable and non-reactive under normal conditions of use, storage and transport.
- 10.3 POSSIBILITY OF HAZARDOUS REACTIONS**
Hazardous reactions: No dangerous reaction known under conditions of normal use.
- 10.4 CONDITIONS TO AVOID** Contact with incompatible materials.
- 10.5 INCOMPATIBLE MATERIALS** None known, avoid strong oxidizing agents.
- 10.6 HAZARDOUS DECOMPOSITION PRODUCTS**
Hazardous decomposition products: No hazardous decomposition products are known.
Hazardous polymerization: Does not occur.
Other information: Not applicable.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 INFORMATION ON TOXICOLOGICAL EFFECTS

- Acute toxicity:** Causes skin irritation. May cause redness and pain. Causes serious eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision.
- Likely routes of exposure:** Skin contact. Eye contact. Inhalation.
- Eye:** Causes serious eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision.
- Skin:** Causes skin irritation. May cause redness and pain.
- Ingestion:** Not an expected route of exposure. Expected to be a low ingestion hazard.
- Inhalation:** Not an expected route of exposure. No adverse effects due to inhalation are expected.

LD50/LC50 values relevant to this classification:

1,2-Benzenedicarboxylic acid, 3,4,5,6-tetrabromo-, mixed esters with diethylene glycol and propylene glycol

Oral rat LD50 632 mg/kg bw
 Inhal rat LC50 >17,800 mg/L air 1hr
 Derm rabbit LD50 >5,000 mg/kg bw

Diethylene glycol

Oral rat LD50 19600 mg/kg bw/day
 Oral rat LD50 16500 mg/kg bw/day
 Oral Human LD50 1120 mg/kg bw/day
 Oral Rat LD50 >25300 mg/kg
 Inhal rat LC50 > 4.6 mg/L air 4hr
 Inhal Rat LC50 >5.06 mg/l
 Derm rabbit LD50 13300 mg/kg bw
 Dermal Rabbit LD50 12500 mg/kg

Pentamethyldiethylenetriamine

Oral rat LD50 1330 mg/kg bw
 Inhal rat LC50 290 ppm = 2055.5 mg/m³
 Inhal rat LC50 8.38 mg/L air (nominal)
 Derm rabbit LD50 > 200 < 1000 mg/kg bw

Calculated overall chemical acute toxicity values for this formulation:

Calculated overall Chemical Acute Toxicity Values		
LC50 (inhalation)	LD50 (oral)	LD50 (dermal)
>5 mg/kg (dust and mist)	>2000 mg/kg	>2000 mg/kg

11.2 DELAYED, IMMEDIATE, AND CHRONIC EFFECTS OF SHORT- AND LONG-TERM EXPOSURE

Skin corrosion/irritation: Causes skin irritation. May cause redness and pain.
Serious eye damage/irritation: Causes serious eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision.
Respiratory sensitization: Based on available data, this product is not expected to cause respiratory sensitization.
Skin sensitization: Based on available data, this product is not expected to cause skin sensitization.
Symptoms and target organs: Prolonged exposure may cause chronic effects. Suspected of damaging the unborn child. May cause damage to organs <kidney> through prolonged or repeated exposure <oral>. Causes skin irritation. May cause redness and pain. Causes serious eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision.
Chronic health effects: Prolonged exposure may cause chronic effects. May cause damage to organs <kidney> through prolonged or repeated exposure <oral>.
Carcinogenicity: This product is not classified as a carcinogen. Due to the form of the product, exposure to the potentially carcinogenic components is not expected.

Material	OSHA(O)	ACGIH(G)	NTP(N)	IARC(I)
Diethylene glycol	Not listed	A3	Not listed	3

SOURCE AGENCY CARCINOGEN CLASSIFICATIONS:

OSHA (O) =Occupational Safety and Health Administration
 Ca/Yes = Expected to be carcinogenic
 not listed = Not expected to be carcinogenic

NTP (N) =National Toxicology Program

K =Known to be a carcinogen
 R = Reasonably anticipated to be a carcinogen
 not listed = Not expected to be carcinogenic

ACGIH (G) =American Conference of Governmental Industrial Hygienists

A1 =Confirmed human carcinogen
 A2 =Suspected human carcinogen
 A3 =Animal carcinogen
 A4 =Not classifiable as a human carcinogen
 A5 =Not suspected as a human carcinogen
 not listed = Not expected to be carcinogenic

IARC (I) =International Agency for Research on Cancer

1 =Carcinogenic to humans
 2A =Probably carcinogenic to humans
 2B =Possibly carcinogenic to humans
 3 =Not classifiable as to its carcinogenicity to humans
 4 =Probably not carcinogenic to humans
 not listed = Not expected to be carcinogenic

Mutagenicity: No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Reproductive Toxicity: This product is not expected to cause reproductive or developmental effects.
Specific Target Organ Toxicity (STOT):
Single Exposure: Not classified as an STOT - Single Exposure.
Repeated Exposure: May cause damage to organs <kidney> through prolonged or repeated exposure <oral>.
Aspiration Toxicity: Based on available data, this product is not expected to cause aspiration toxicity.
Other Information: Not applicable.

SECTION 12: ECOLOGICAL INFORMATION

12.1 ECOTOXICITY

Ecotoxicity: The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Acute aquatic toxicity: The product is not classified as acutely environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Chronic toxicity: The product is not classified as having a chronic environmental hazard. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Environmental effects: The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

12.2 PERSISTENCE AND DEGRADABILITY

Persistence/biodegradability: The product contains substances which are not expected to be readily biodegradable.

12.3 BIOACCUMULATIVE POTENTIAL

Bioaccumulation: No data available.

12.4 MOBILITY

Mobility: No data available.

Mobility in soil: No data available.

Mobility in non-soil: No data available.

12.5 OTHER ADVERSE EFFECTS

Ozone layer: No data available.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 WASTE TREATMENT METHODS

Disposal method: This material must be disposed of in accordance with all local, state, provincial, and federal regulations.

Contaminated packaging: Since emptied containers may retain product residue, follow label warnings even after container is emptied. Dispose of contents and container in accordance with all local, regional, national and international regulations.

EU codes: The Waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Residual waste: Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Disposal instructions: Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents and container in accordance with all local, regional, national and international regulations.

Waste codes: The Waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Other disposal recommendations: None

SECTION 14: TRANSPORT INFORMATION

DOT Non-Bulk

Not classified as Dangerous Goods for Transport

DOT Bulk

Not classified as Dangerous Goods for Transport

IMDG

Not classified as Dangerous Goods for Transport

ICAO/IATA

Not classified as Dangerous Goods for Transport

Reportable quantity: Package sizes shipped in quantities less than the product reportable quantity are not subject to the RQ (reportable quantity) transportation requirements.

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material

SECTION 15: REGULATORY INFORMATION

15.1 SAFETY, HEALTH AND ENVIRONMENTAL REGULATIONS/ LEGISLATIONS SPECIFIC FOR THE CHEMICAL

US Federal Regulations:

U.S. OSHA (Occupational Safety and Health Administration) Specifically Regulated Substances (29 CFR 1910.1001-1050)

No components of this product are present at concentration greater than or equal to 0.1% and are identified as a carcinogen or potential carcinogen by OSHA.

SARA/CERCLA reporting requirements:

No components of this product are found at concentrations greater than or equal to 0.1% and are subject to the SARA/CERCLA reporting requirements.

State Right-to-Know Regulations

The following components of this product are found at concentrations greater than or equal to 0.1%, subject to state Right-to-Know reporting requirements; or are found at any concentration and are listed under California Proposition 65.

Material	California Proposition 65	Massachusetts Right-to-Know	Minnesota Employee Right-to-Know	New Jersey Community Environmental Hazard Right-to-Know	New Jersey Right-to-Know Substance	Pennsylvania Right-to-Know	Rhode Island Right-to-Know
Diethylene glycol	Not listed	Not listed	Listed	Not listed	Not listed	Listed	Not listed
2,2'-(Ethylenedioxy)diethanol	Not listed	Not listed	Not listed	Not listed	Not listed	Listed	Not listed
Oxydipropanol	Not listed	Not listed	Not listed	Not listed	Not listed	Listed	Not listed
Ethylene Glycol (trace)	Dev	Listed	Listed	Not listed	Listed	Listed	Listed
1,4- Dioxane (trace)	Cancer	Listed	Listed	Listed	Listed	Listed	Listed

California:

Proposition 65:



WARNING: This product can expose you to 1,4- Dioxane, which is known to the State of California to cause cancer, and Ethylene Glycol, which is known to the State of California to

cause birth defects or other reproductive harm. For more information, go to www.P65Warnings.ca.gov.

Global Inventories:

Notification status:	
US - TSCA	All substances are listed
Canada -DSL	All substances are listed
Canada - NDSL	No substances are listed
EU - EINECS	All substances are listed
EU - ELINCS	No substances are listed
EU - NLP	No substances are listed
Australia – AICS	All substances are listed
China - EICSC	All substances are listed
Japan - ENCS	Not all substances are listed
Korea - KECI	All substances are listed
Taiwan - NECI	All substances are listed
New Zealand - NZIoC	All substances are listed
Philippine - PICCS	All substances are listed

EU - REACH Status:

A registration number is not available for substances in this mixture as the substances are exempted from registration, the annual tonnage does not require a registration or the registration is envisioned for a later registration deadline.

CANADA – WHMIS (Workplace Hazardous Materials Information System) Classification:

D1B, D2A, D2B



MEXICO:

Hazard Classification: 2-1-0
Carcinogen Status: No data available.

SECTION 16: OTHER INFORMATION

HMIS (Hazardous Materials Identification System) rating:

Health:	2*
Flammability:	1
Physical:	0

NFPA 704 (National Fire Protection Association) rating:

Health	2
Fire	1
Reactivity	0

Legend:

DOT	US Department of Transportation
IATA	International Air Transport Association
ICAO	International Civil Aviation Organization
IMDG	International Maritime Dangerous Goods
ACGIH	American Conference of Governmental Industrial Hygienists
NTP	National Toxicology Program
IARC	International Agency for Research on Cancer
PPE	Personal Protective Equipment
RCRA	Resource Conservation and Recovery Act
CAA	Clean Air Act
SARA	Superfund Amendments and Reauthorization Act
EPCRA	Emergency Planning and Community Right-to-Know Act
WHMIS	Workplace Hazardous Materials Information System
EU	European Union
REACH	Regulation on Registration, Evaluation, Authorisation and Restriction of Chemicals
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
TSCA	US Toxic Substances Control Act (TSCA)
DSL	Canada Domestic Substance List (DSL)
NDSL	Canada Non-Domestic Substance List (NDSL)
EINECS	European Inventory of Existing Commercial Chemical Substances (EINECS)
ELINCS	European List of Notified Chemical Substances (ELINCS)
NLP	European list of No-longer Polymers (NLP)
AICS	Australian Inventory of Chemical Substances (AICS)
EICSC	China Existing Chemical Inventory - IECS
ENCS	Japanese Existing and New Chemical Substances Inventory(ENCS)
KECI	Korea Existing Chemicals Inventory(KECI)
NECI	Taiwan National Existing Chemical Inventory (NECI)
NZIoC	New Zealand Inventory of Chemicals (NZIoC)
PICCS	Philippine Inventory of Chemicals and Chemical Substances (PICCS)
HMIS	Hazardous Materials Identification System
NFPA	National Fire Protection Association (NFPA)

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Disclaimer: We believe the statements, technical information and recommendations contained herein are reliable, but they are given without warranty or guarantee of any kind. The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. It is the user's responsibility to satisfy oneself as to the suitability and completeness of this information for the user's own particular use.

Prepared by: Gaco Western LLC

End of Safety Data Sheet