



## SAFETY DATA SHEET AMBI-TITE 204 (HFO) Closed Cell SPF System

### SECTION 1: Identification

Product Name: **AMBI-TITE 204 (HFO) Closed Cell SPF System**

Chemical Name: Polyurethane Resin (B-SIDE)

Recommended Use: Component of a Spray-Applied Polyurethane System.

Restrictions on Use: For Industrial Use Only.

Manufactured By: AMBIT Polyurethane  
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**B COMPONENT**  
**RIGID CLOSED CELL**  
**SPRAY FOAM**

**Emergency Contact:** For Chemical Emergency (spill, leak, fire, exposure or incident) within the US or Canada call CHEMTREC (800) 424-9300.

### SECTION 2: Hazards Identification

#### GHS Classification (In accordance with 29 CFR 1910.1200)

Skin Corrosion/Irritation	Category 3 (Skin)
Sensitization:	Category 3 (Eye)
Irritation:	Category 2A
Respiratory Toxicity:	Category 1B
Specific Target Organ Toxicity - Repeated Exposure (STOT-RE)	Category 2 (Kidney)

#### GHS Label Elements

Hazard Pictograms:



**GHS07**  
Harmful



**GHS08**  
Health Hazard

Signal Word: **DANGER**

Hazard Statements: H315 Causes skin irritation.  
H317 May cause an allergic skin reaction.  
H319 Causes serious eye irritation.  
H360 May damage fertility or the unborn child.  
H373 May cause damage through repeated exposure if swallowed.

Precautionary Statements: **PREVENTION:**  
P201 Obtain special instructions before use.  
P202 Do not handle until all safety precautions have been read and understood.

P260 Do not breath dust/fume/gas/mist/vapors/spray.  
P264 Wash hands thoroughly after handling.  
P270 Do not eat, drink or smoke when using this product.  
P271 Contaminated work clothing should not be allowed out of the workplace  
P280 Wear eye or face protection  
P281 Wear personal protective equipment as required.

**RESPONSE:**

P301 + P312 If swallowed, Call a POISON CENTER or doctor if you feel unwell.  
P302 + P352 + P362 +P364 If on skin, wash with plenty of soap and water. Take off contaminated clothing and wash it before reuse.  
P305 + P351 + P338 If in eyes, rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do so. Continue rinsing.  
P308 + P313 If exposed or concerned: Seek medical attention.  
P332 + P313 If skin irritation occurs: Seek medical attention.  
P337 + P313 If eye irritation persists: Seek medical attention.

**STORAGE:**

P405 Store locked up.

**DISPOSAL:**

P501 Dispose of contents/container to an approved facility in accordance with local, regional, national and international regulations.

Hazards Not Otherwise Classified: Physical Hazards Not Otherwise Classified (PHNOC)  
None known.  
Health Hazards Not Otherwise Classified (HHNOC)  
None known.

**Section 3: Composition/Information on Ingredients**

Substance/Mixture: Mixture

**Hazardous Components**

Chemical Name	CAS #	Concentration (%)
Ethanediol	107-21-1	<3
2,2 Oxibisethanol	111-46-6	<3
Tris (2-chloro-1-methylethyl) Phosphate	13674-84-5	<10
Triethyl Phosphate	78-40-0	<5
1,1,3,3-Tetramethylguanidine	80-70-6	<2
Dibutylbis(dodecylthio)Stannane	1185-81-5	<1

*The specific chemical identity and/or exact percentage (concentration) of composition may be withheld as a trade secret.*

**Section 4: First-Aid Measures**

General Advice: Move out of dangerous area. Do not leave the victim unattended. Consult a physician. Show this safety data sheet to the doctor in attendance.

If Inhaled: If breathed in, move person into fresh air. Call a physician or poison control center immediately. Keep patient warm and at rest. Keep respiratory tract clear. If breathing is difficult, give oxygen. If breathing is irregular or stopped, administer artificial respiration. If unconscious, place in recovery position and seek medical advice. Consult a physician immediately if symptoms such as shortness of breath or asthma are observed. Seek medical attention if adverse health effects persist.

In case of Skin Contact: In case of skin contact, immediately flush skin with soap and plenty of water for at least 20 minutes. Take of contaminated clothing and shoes immediately. Thoroughly clean shoes before reuse. Wash contaminated clothing before reuse. Call a physician if irritation develops or persists.

In case of Eye Contact: Rinse immediately with plenty of water, also under the eyelids for at least 20 minutes. If easy to do, remove contact lens, if worn. Protect unharmed eye. Keep eye wide open while rinsing If eye irritation persists, consult a specialist.

If Swallowed:	Gently wipe or rinse the inside of the mouth with water. DO NOT induce vomiting unless directed to do so by a physician or poison control center. Keep respiratory tract clear. Keep at rest. If a person vomits when lying on his/her back, place him/her in the recovery position. Never give anything by mouth to an unconscious person. Take victim immediately to hospital. If symptoms persist, call a physician.
Most Important Symptoms and Effects, both Acute and Delayed	Prolonged exposure may cause chronic effects. Suspected of damaging the unborn child. May cause damage to organs (kidney) though prolonged or repeated exposure (oral). Causes skin irritation. May cause redness and pain. Causes severe eye damage. Symptoms may include stinging, treating, redness, swelling and blurred vision. Permanent eye damage including blindness could result.
Notes to Physician:	Symptomatic and supportive therapy as needed. Following severe exposure medical follow-up should be monitored for at least 48 hours. The first-aid procedure should be established in consultation with the doctor responsible for industrial medicine.

## Section 5: Firefighting Measures

Suitable Extinguishing Media:	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Foam, Carbon dioxide (CO <sub>2</sub> ), Dry powder. Water spray for large fires.
Unsuitable Extinguishing Media:	Do not use water jet as an extinguisher as this will spread the fire.
Specific Hazards During Firefighting:	Do not allow run-off from firefighting to enter drains or water courses.
Hazardous Combustion Products:	Combustion products may include: carbon monoxide, carbon dioxide, nitrogen oxides, halogenated and phosphorus compounds, traces of ammonia, oxides of phosphorus, hydrogen chloride gas, aldehydes and ketones, low molecular weight organic products, tin oxides, noxious and toxic fumes.
Special Protective Equipment for Firefighters:	Wear an approved positive pressure self-contained breathing apparatus (SCBA) with a full-face piece operated in positive pressure mode and appropriate protective equipment (PPE).

## Section 6: Accidental Release Measures

Personal Precautions, Protective Equipment and Emergency Procedures:	Immediately evacuate personnel to safe areas. Use personal protective equipment. If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. Ensure adequate ventilation. Keep people away from the upwind of spill/leak. Only qualified personnel equipped with suitable protective equipment may intervene. For additional precautions and advice on safe handling, see Section 7. Never return spills in original containers for re-use. Make sure that there is a sufficient amount of neutralizing/absorbent material near the storage area. The danger areas must be delimited and identified using relevant warning and safety signs. Treat recovered material as described in the section "Disposal Considerations". For disposal considerations, see Section 13.
Environmental Precautions:	Do not allow uncontrolled discharge of product into the environment. Do not allow material to contaminate ground water system. Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. Local authorities should be advised if significant spillages cannot be contained. If the product contaminates rivers and lakes or drains inform respective authorities.
Methods and Materials for Containment and Cleaning up:	Clean-up methods – small spillage. Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local/national regulations (see section 13). Clean contaminated surface thoroughly. Sweep up or vacuum up spillage and collect in suitable container for disposal. See Section 1 for Emergency Contact Information.

## Section 7: Handling and Storage

Technical Measures:	Ensure that eyewash stations and safety showers are close to the workstation location.
Local/Total Ventilation:	Use only with adequate ventilation.
Advice on Protection Against Fire and Explosion:	Normal measures for preventative fire protection.
Advice on Safe Handling:	For personal protection see Section 8. Do not handle until all precautions have been read and understood. Do not breath vapor/spray mist/dust. Do not swallow. Do not get in eyes or mouth or on skin. Do not get on clothing. Smoking, eating and drinking should be prohibited in the application area. Provide sufficient air exchange and/or exhaust in work rooms. Use only in areas with adequate ventilation or wear appropriate respirator. Dispose of rinse water in accordance with local, regional, national and international regulations. Keep container tightly closed when not in use. Do not reuse containers. Empty containers with product residue. Can be hazardous.
Conditions for Safe Storage:	Keep container protected from direct sunlight, tightly closed in a dry and well-ventilated place. Keep away from incompatible materials (see Section 10), food and drink. Keep in properly labelled containers. Observe label precautions. Keep containers tightly closed and sealed until ready for use. Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Materials to Avoid:	Avoid contact with oxidizing materials, strong acids, strong bases and unintended contact with isocyanates.
Recommended Storage Temperature:	59-77 ° F (15-25 ° C)
Storage Life:	6 months (in unopened containers)
Further Information on Storage Stability:	Stable under recommended storage conditions.

## Section 8: Exposure Controls/Personal Protection

### Components with Workplace Control Parameters – UNITED STATES

Ingredient Name	CAS #	Value Type (Form of Exposure)	Control Parameters/ Permissible Concentration	Basis
Ethenediol		TLV	100 mg/m <sup>3</sup> Form: Aerosol	ACGIH TLV
2,2 Oxibisethanol		TWA	10 mg/m <sup>3</sup> 8 hours	AIHA WEEL
Triethyl Phosphate		C	7.45 mg/m <sup>3</sup> 8 hours	AIHA WEEL
Dibutylbis (Dodecylthio) Stannane		TWA	0.1 mg/m <sup>3</sup> 8 hours	OSHA PEL
		TWA	0.1 mg/m <sup>3</sup> 10 hours Absorbed through skin.	NIOSH REL
		TWA	0.1 mg/m <sup>3</sup> 8 hours Absorbed through skin.	ACGIH TLV

Appropriate Engineering Controls:	If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.
Environmental Exposure Controls:	Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental legislation.



### Respiratory Protection:

Use a properly fitted, air purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. In emergency, non-routine and unknown exposure situations, including confined space entries, a NIOSH-certified full-face piece pressure demand self-contained breathing apparatus (SCBA) or a full-face piece pressure demand supplied air respirator (SAR) with auxiliary self-contained air supply, should be used. Respirators should be used in accordance to a respiratory protection program to ensure proper fitting, training and other important aspects of use.



### Hand Protection:

The suitability for a specific workplace should be discussed with the producers of the protective gloves. Protective gloves should be worn when handling freshly made polyurethane products to avoid contact with trace residual materials which may be hazardous in contact with skin. Use chemical resistant gloves classified under Standard EN374: protective gloves against chemicals and microorganisms. Examples of glove materials that might provide suitable protection include: butyl rubber, chlorinated polyethylene, polyethylene, ethyl vinyl alcohol copolymers, laminated ("EVAL", polychloroprene (neoprene\*), nitrile/butadiene rubber ("nitrile" or "NBR"), polyvinyl chloride ("PVD" or "vinyl"), fluoroelastomer (Viton\*). When prolonged or frequently repeated contact may occur, a glove with protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN374) is recommended. When only brief contact is expected, a glove with protection class of 3 or higher (breakthrough time greater than 240 minutes according to EN374) is recommended. Notice: The selection of a specific glove for a particular application and duration of use in a workplace should also consider all requisite workplace factors such as, but not limited to: other chemicals that may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), as well as instructions/specifications provided by the glove supplier.



### Eye Protection:

Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts. Chemical splash goggles. Always wear eye protection when the potential for inadvertent eye contact with the product cannot be excluded. Please follow all applicable local/national requirements when selecting protective measures for a specific workplace. Ensure that eyewash stations and safety showers are close to the work location.



### Skin and Body Protection:

Impervious clothing. Choose body protection according to the amount and concentration of the dangerous substance at the work place. Recommended: Overall (preferably heavy cotton) or Tyvek-Pro Tech 'C', Tyvek Pro 'F' disposable coverall. Appropriate footwear should be selected based on the task being performed and the risks involved. Ensure that safety showers are close to the work location.



### Protective Measures:

Personal protective equipment comprising of suitable protective gloves, safety goggles and protective clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace. Ensure that eye flushing systems and safety showers are located close to the work location.



### Hygiene Measures:

Handle in accordance with good industrial hygiene and safety practice. Wash face, hands, forearms and any exposed skin thoroughly after handling. Remove contaminated clothing and protective equipment before entering eating areas. When using do not eat, drink or smoke. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse. Wash hands before breaks and immediately after handling the product and at the end of the workday. Ensure that the eyewash stations and safety showers are close to the work location.

## Section 9: Physical and Chemical Properties

Appearance	Liquid
Color	Brown
Odor	Ester
Odor Threshold	No data is available on the product itself.
pH	No data is available on the product itself.
Freezing Point	No data is available on the product itself.
Melting Point	No data is available on the product itself.
Boiling Point	No data is available on the product itself.
Flash Point	>200 °F / >93 °C (Method: Closed Cup)
Evaporation Rate	No data is available on the product itself.
Flammability (Solid, Gas)	No data is available on the product itself.
Flammability (Liquids)	No data is available on the product itself.
Upper & Lower Explosion Limit	No data is available on the product itself.
Vapor Pressure	No data is available on the product itself.
Relative Vapor Density	No data is available on the product itself.
Relative Density / Specific Gravity @ 77 °F (25 °C)	1.13-1.17
Density	
Solubility in Water	Moderately soluble in water.
Partition coefficient: n-octanol/water	No data is available on the product itself.
Auto-Ignition Temperature	No data is available on the product itself.
Self-Accelerating Decomposition Temperature	No data is available on the product itself.
Viscosity, Dynamic (77 °F/25 °C)	No data is available on the product itself.
Explosive Properties	No data is available on the product itself.
Oxidizing Properties	No data is available on the product itself.
Particle Size	No data is available on the product itself.

## Section 10: Stability and Reactivity

Reactivity:	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical Stability:	Stable under recommended storage conditions (See Section 7).
Possibility of Hazardous Reactions:	No known dangerous reactions will occur under normal storage and use.
Conditions to Avoid:	Avoid exposure to moisture and high temperatures to protect product quality.
Incompatible Materials:	Avoid contact with oxidizing materials, strong acids, strong bases and unintended contact with isocyanates.
Hazardous Decomposition Products:	Under recommended storage conditions and use, hazardous decomposition products should not be produced.

## Section 11: Toxicological Information

Information on Likely Routes of Exposure: No data is available on the product itself.

### Likely Routes of Exposure

Eye contact, Inhalation, Dermal contact. Ingestion.

## Potential Acute Health Affects

Eye Contact:	Causes serious eye irritation.
Inhalation:	No known significant effects or critical hazards.
Skin Contact	Causes skin irritation. May cause an allergic skin reaction.
Ingestion:	No known significant effects or critical hazards.

## Section 12: Ecological Information

### Ecotoxicity

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

### Stability in Water:

Component: Diphenylmethanediisocyanate  
Method: No Information Available.  
Remarks: Reacts with Water

Photodegradation:	No data available.
Impact on Sewage Treatment:	No data available.

### Bioaccumulative Potential

Bioaccumulation – Product: No data available.

### Hazardous to the Ozone Layer

Ozone-Depletion Potential:	Zero.
Additional Ecological Information:	No data available.
Global Warming Potential (GWP):	Zero.

## Section 13: Disposal Considerations

### Disposal Methods

Waste from Residues:	Dispose of contents and container in accordance with all local, regional, national and international regulations. Avoid release to the environment. Do not dispose of waste in sewer. Do not contaminate ponds, waterways or ditches with chemical or used container. Send to a licensed waste management company.
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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. Do not cut, grind, drill, weld or re-use empty containers.

## Section 14: Transport Information

### International Regulations

IATA: Not regulated as dangerous goods.  
 IMDG: Not regulated as dangerous goods.  
 TDG: Not regulated as dangerous goods.

### National Regulations

DOT Non-Bulk: Not regulated as dangerous goods.  
 DOT Bulk: Not regulated as dangerous goods.

### Special Precautions for User

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet (SDS). Transportation classifications may vary by mode of transportation, package sizes and variations in regional or country regulation. 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

### US Federal Regulations:

#### CERCLA Reportable Quantity:

Component(s)	CAS#	%	Acute Health Hazard (Immediate)	Delayed Health Hazard (Chronic)	Fire Hazard	Sudden Release of Pressure	Reactive
Ethenediol	107-21-1	<3	Yes	No	No	No	No
2,2 - Oxibisethanol	111-46-6	<3	Yes	No	No	No	No
Tris (2-chloro-1-methylethyl) Phosphate	13674-84-5	<10	Yes	No	No	No	No
Triethyl Phosphate	78-40-0	<5	Yes	No	No	No	No
1,1,3,3 - Tetramethylguanidine	80-70-6	<2	Yes	No	Yes	No	No
Dibutylbis (dodecylthio) Stannane	1185-81-5	<1	Yes	Yes	No	No	Yes

**U.S. Toxic Substances Control Act (Section 8(a) PAIR:** 2,2 Dimethylpropan-1-ol, tribromo derivative, Triethyl Phosphate, Octamethylcyclotetrasiloxane.

**U.S. Toxic Substances Control Act (TSCA) Section 8(b):** All components are listed or exempt.

**U.S. Toxic Substances Control Act (TSCA) Section 8(c):** Calls for record of SAR: Triethyl Phosphate.



**SARA 313:**

Component(s)	CAS#	%	Form R – Reporting Requirements	Supplier Notification
Ethanediol	107-21-1	<3	Required	Required

\*SARA 313, notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

**State Regulations:**

Component(s)	California Proposition 65	Massachusetts Right-to-Know	Minnesota Employee Right-to-Know	New Jersey Right-to-Know	New York Right to Know	Pennsylvania Right-to-Know	Rhode Island Right-to-Know
Ethanediol		Listed			Listed	Listed	
2,2 - Oxibisethanol						Listed	
Tris (2-chloro-1-methylethyl) Phosphate							
Triethyl Phosphate							
1,1,3,3 - Tetramethylguanidine							
Dibutylbis (dodecylthio) Stannane							

**International Regulations:**

**Canada:** WHMIS: Class D-2B Material causing other toxic effects (toxic)  
 CEPA (DSL): All components are listed or exempted.  
 Canadian NPRI: Ethanediol  
 CEPA Toxic Substances: None of the components are listed.  
 Canada Inventory: All components are listed or exempted.

**Section 16: Other Information****Further Information****NFPA Ratings (Scale 0-4)**

Health 2  
 Flammability 1  
 Instability 0

**HMIS® IV Ratings (Scale 0-4)**

HEALTH	2
FLAMABILITY	1
PHYSICAL HAZARD	0

Health 2  
 Flammability 1  
 Instability 0

**Abbreviations:**

DOT	U.S. Department of Transportation
IATA	International Air Transport Association
ACGIH	American Conference of Governmental Industrial Hygienists
NTP	National Toxicology Program
IARC	International Agency for Research on Cancer
PPE	Personal Protective Equipment
OSHA	U.S. Occupational Safety & Health Administration
SARA	Superfund Amendments and Reauthorization Act
WHMIS	Workplace Hazardous Materials Information System
TSCA	US Toxic Substances Control Act
CEPA	Canadian Environmental Protection Act
DSL	Canada Domestic Substance List
NPRI	National Pollutant Release Inventory
NFPA	National Fire Protection Association
HMIS	Hazardous Materials Identification System

NOTICE: The information and recommendations in this publication are to the best of our knowledge, information and belief accurate at the date of publication. Nothing herein is to be construed as a warranty, express or otherwise. In all cases, it is the responsibility of the user to determine the applicability of such information and recommendations and the suitability of any product for its particular purpose. The product may present hazards and should be used with caution. While certain hazards are described in this publication, no guarantee is made that these are the only hazards that exist. Hazards, toxicity and behavior of the products may differ when used with other materials and are dependent upon the manufacturing circumstances or other processes. Such hazards, toxicity and behavior should be determined by the user and made known to handlers, processors and end users. The trademarks above are the property of AMBIT Polyurethane or an affiliate thereof. No person or organization except a duly authorized AMBIT Polyurethane employee is authorized to provide or make available safety data sheets for AMBIT Polyurethane products. Safety data sheets from unauthorized sources may contain information that is no longer current or accurate.

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