

SECTION 1) CHEMICAL PRODUCT AND MANUFACTURER'S IDENTIFICATION

Product ID: 90-16435
Product Name: UPC 2.0 HFO, B Side
Revision Date: Jan 11, 2026 **Date Printed:** Jan 11, 2026
Version: 1.0 **Supersedes Date:** N.A.
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Product/Recommended Uses: For Further Information, Refer to the Product Technical Data Sheet.

SECTION 2) HAZARDS IDENTIFICATION

Classification

Eye Irritation - Category 2

Skin Irritation - Category 3

Safety data sheet prepared in accordance to the United States Occupational Safety and Health Administration (OSHA) Hazard Communication Standard (29 CFR 1910.1200) and the Canadian Workplace Hazardous Materials Information System (WHMIS).

Pictograms



Signal Word

Warning

Hazardous Statements - Health

H319 - Causes serious eye irritation.

H316 - Causes mild skin irritation.

Precautionary Statements - General

P101 - If medical advice is needed, have product container or label at hand.

P102 - Keep out of reach of children.

P103 - Read label before use.

Precautionary Statements - Prevention

P264 - Wash thoroughly after handling.

P280 - Wear protective gloves, protective clothing, eye protection/face protection.

Precautionary Statements - Response

P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P337 + P313 - If eye irritation persists: Get medical advice/attention.

P332 + P313 - If skin irritation occurs: Get medical advice/attention.

Precautionary Statements - Storage

No precautionary statement available.

Precautionary Statements - Disposal

No precautionary statement available.

SECTION 3) COMPOSITION/INFORMATION ON INGREDIENTS

CAS	Chemical Name	% By Weight
0102687-65-0	1-PROPENE, 1-CHLORO-3,3,3-TRIFLUORO-, (1E)-	7% - 17%
0013674-84-5	2-PROPANOL, 1-CHLORO-. PHOSPHATE (3:1)	6% - 12%
0000080-70-6	GUANIDINE, N,N,N',N'-TETRAMETHYL-	0.1% - 1%
0000107-21-1	ETHYLENE GLYCOL	0.1% - 1%

Specific chemical identity and/or exact percentage (concentration) of the composition has been withheld to protect confidentiality.

SECTION 4) FIRST-AID MEASURES**Inhalation**

Remove source of exposure or move person to fresh air and keep comfortable for breathing. If experiencing respiratory symptoms: Call a POISON CENTER/doctor. If breathing is difficult, trained personnel should administer emergency oxygen if advised to do so by the POISON CENTER/doctor.

If exposed/feel unwell/concerned: Call a POISON CENTER/doctor.

Skin Contact

Take off contaminated clothing, shoes and leather goods (e.g. watchbands, belts). Gently blot or brush away excess product. Wash with plenty of lukewarm, gently flowing water for a duration of 15-20 minutes. If skin irritation or rash occurs: Get medical advice/attention. Wash contaminated clothing before re-use or discard.

IF exposed or concerned: Get medical advice/attention.

Eye Contact

Avoid direct contact. Wear chemical protective gloves, if necessary.

Rinse eyes cautiously with lukewarm, gently flowing water for several minutes, while holding the eyelids open. Remove contact lenses, if present and easy to do. Continue rinsing for 15-20 minutes. Take care not to rinse contaminated water into the unaffected eye or onto the face. If eye irritation persists: Get medical advice/attention.

Ingestion

Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER/doctor. If vomiting occurs naturally, lie on your side, in the recovery position.

IF exposed or concerned: Get medical advice/attention.

Most important symptoms and effects, both acute and delayed

No data available.

Indication of any immediate medical attention and special treatment needed

Symptomatic treatment.

Treat according to symptoms (decontamination, vital functions), no known specific antidote.

Treatment should be supportive and based on the judgement of the physician in response to the reaction of the patient.

SECTION 5) FIRE-FIGHTING MEASURES**Suitable Extinguishing Media**

Dry chemical, foam, carbon dioxide is recommended. Water spray is recommended to cool or protect exposed materials or structures. Carbon dioxide can displace oxygen. Use caution when applying carbon dioxide in confined spaces. Simultaneous use of foam and water on the same surface is to be avoided as water destroys the foam. Sand or earth may be used for small fires only.

Unsuitable Extinguishing Media

Do not use straight stream of water.

Specific Hazards Arising from the Chemical

Heated containers may build up pressure and rupture violently. Therefore, use cold water to cool fire-exposed containers.

Precautions for Firefighters

Isolate immediate hazard area and keep unauthorized personnel out. Stop spill/release if it can be done safely. Move undamaged containers from immediate hazard area if it can be done safely. Water spray may be useful in minimizing or dispersing vapors and to protect personnel. Water may be ineffective but can be used to cool containers exposed to heat or flame. Caution should be exercised when using water or foam as frothing may occur, especially if sprayed into containers of hot, burning liquid.

Dispose of fire debris and contaminated extinguishing water in accordance with official regulations.

Special Protective Equipment

Wear NIOSH approved self-contained breathing apparatus in positive pressure mode with full-face piece. Boots, gloves (neoprene), goggles, and full protective clothing are also required.

Care should always be exercised in dust/mist areas.

SECTION 6) ACCIDENTAL RELEASE MEASURES

Emergency Procedure

ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).

Do not touch or walk through spilled material.

Isolate hazard area and keep unnecessary people away. Remove all possible sources of ignition in the surrounding area. Notify authorities if any exposure to the general public or the environment occurs or is likely to occur.

If spilled material is cleaned up using a regulated solvent, the resulting waste mixture may be regulated.

Personal Precautions

Avoid breathing vapors. Avoid contact with skin, eyes or clothing. Do not touch damaged containers or spilled materials unless wearing appropriate protective clothing.

Environmental Precautions

Stop spill/release if it can be done safely. Prevent spilled material from entering sewers, storm drains, other unauthorized drainage systems and natural waterways by using sand, earth, or other appropriate barriers.

Methods and Materials for Containment and Cleaning up

Contain and absorb large spillages onto an inert, non-flammable adsorbent carrier (such as earth or sand). Shovel into open-top drums or plastic bags for further decontamination, if necessary. Wash the spillage area clean with liquid decontaminate. Remove and properly dispose of residues. Notify applicable government authorities if release is reportable.

Protective Equipment

Appropriate dust or face mask to eliminate breathing foam dust particulates.

SECTION 7) HANDLING AND STORAGE

General

Wash hands after use.

Do not get in eyes, on skin or on clothing.

Do not breathe vapors or mists.

Use good personal hygiene practices.

Eating, drinking and smoking in work areas is prohibited.

Remove contaminated clothing and protective equipment before entering eating areas.

Ventilation Requirements

Use only with adequate ventilation to control air contaminants to their exposure limits. The use of local ventilation is recommended to control emissions near the source.

Storage Room Requirements

Keep container(s) tightly closed and properly labeled. Store in cool, dry, well-ventilated areas away from heat, direct sunlight, strong oxidizers and any incompatibilities. Store in approved containers and protect against physical damage. Keep containers securely sealed when not in use. Indoor storage should meet OSHA standards and appropriate fire codes. Containers that have been opened must be carefully resealed to prevent leakage. Empty container retain residue and may be dangerous.

Use non-sparking ventilation systems, approved explosion-proof equipment and intrinsically safe electrical systems in areas where this product is used and stored.

Ground and bond containers and receiving equipment. Avoid static electricity by grounding.

Do not cut, drill, grind, weld, or perform similar operations on or near containers. Do not pressurize containers to empty them. Ground all structures, transfer containers and equipment to conform to the national electrical code. Use procedures that prevent static electrical sparks. Static electricity may accumulate and create a fire hazard.

Ideal storage temperature is 50-75°F.

SECTION 8) EXPOSURE CONTROLS/PERSONAL PROTECTION

Eye protection

Wear eye protection with side shields or goggles. Wear indirect-vent, impact and splash resistant goggles when working with liquids. If additional protection is needed for entire face, use in combination with a face shield.

Skin Protection

Use of gloves approved to relevant standards made from the following materials may provide suitable chemical protection: PVC, neoprene or nitrile rubber gloves. Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, glove thickness, dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced. Use of an apron and over-boots of chemically impervious materials such as neoprene or nitrile rubber is recommended to avoid skin sensitization. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace. Launder soiled clothes or properly disposed of contaminated material, which cannot be decontaminated.

Depending on conditions of use, additional protection may be required such as apron, arm covers, or full body suit. Wash contaminated clothing before re-wearing.

Respiratory protection

If airborne concentrations exceed or are expected to exceed the TLV, use MSHA/NIOSH approved positive pressure supplied pressure supplied air respiratory with a full face piece or an air supplied hood. For emergencies, use a positive pressure self-contained breathing apparatus.

Appropriate Engineering Controls

Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value.

Chemical Name	OSHA TWA (ppm)	OSHA TWA (mg/m3)	OSHA STEL (ppm)	OSHA STEL (mg/m3)	OSHA Tables (Z1, Z2, Z3)	OSHA Carcinogen	OSHA Skin designation	NIOSH TWA (ppm)
1-PROPENE, 1-CHLORO-3,3,3-TRIFLUORO-, (1E)-								
ETHYLENE GLYCOL								

Chemical Name	NIOSH TWA (mg/m3)	NIOSH STEL (ppm)	NIOSH STEL (mg/m3)	NIOSH Carcinogen	ACGIH TWA (ppm)	ACGIH TWA (mg/m3)	ACGIH STEL (ppm)	ACGIH STEL (mg/m3)
1-PROPENE, 1-CHLORO-3,3,3-TRIFLUORO-, (1E)-						2.5		
ETHYLENE GLYCOL					25 (v)		50 (v)	10 (I,H)

Chemical Name	ACGIH Carcinogen	ACGIH TLV Basis	ACGIH Notations
1-PROPENE, 1-CHLORO-3,3,3-TRIFLUORO-, (1E)-	A4	Bone dam; fluorosis	A4; BEI
ETHYLENE GLYCOL	A4	URT irr	A4

A4 - Not Classifiable as a Human Carcinogen, BEI - Substances for which there is a Biological Exposure Index or Indices, dam - Damage, irr - Irritation, URT - Upper respiratory tract

SECTION 9) PHYSICAL AND CHEMICAL PROPERTIES

Physical and Chemical Properties

Density	10.12 lb/gal
Specific Gravity	1.21
VOC Regulatory	0.00 lb/gal
VOC Part A & B Combined	N.A.
Appearance	Light brown liquid
Odor Threshold	N.A.
Odor Description	Slight ethereal
pH	N.A.
Water Solubility	N.A.
Flammability	N/A
Flash Point Symbol	N.A.
Flash Point	149 °C
Viscosity	N.A.
Lower Explosion Level	N.A.
Upper Explosion Level	N.A.
Vapor Pressure	N.A.
Vapor Density	Heavier than air
Freezing Point	N.A.
Melting Point	N.A.
Low Boiling Point	19 °C
High Boiling Point	N.A.
Auto Ignition Temp	N.A.
Decomposition Pt	N.A.
Evaporation Rate	Slower than ether
Coefficient Water/Oil	N.A.

SECTION 10) STABILITY AND REACTIVITY

Reactivity

No data available.

Chemical Stability

Material is stable at standard temperature and pressure.

Possibility of Hazardous Reactions/Polymerization

Will not occur.

Conditions To Avoid

Avoid high temperatures, heated material will build pressure and may rupture the container violently.

Incompatible Materials

Strong mineral acids and strong alkalis will seriously degrade material. Heat may be involved.

Hazardous Decomposition Products

Highly unlikely under normal industrial use. Under extreme heat and fire, carbon monoxide, carbon dioxide.

SECTION 11) TOXICOLOGICAL INFORMATION

Skin Corrosion/Irritation

Causes mild skin irritation.

Serious Eye Damage/Irritation

Causes serious eye irritation.

Carcinogenicity

Based on available data, the classification criteria are not met.

Respiratory/Skin Sensitization

Based on available data, the classification criteria are not met.

Germ Cell Mutagenicity

Based on available data, the classification criteria are not met.

Reproductive Toxicity

Based on available data, the classification criteria are not met.

Specific Target Organ Toxicity - Single Exposure

Based on available data, the classification criteria are not met.

Specific Target Organ Toxicity - Repeated Exposure

0000107-21-1 ETHYLENE GLYCOL

The substance may cause effects on kidneys as a result of repeated ingestion.

Aspiration Hazard

Based on available data, the classification criteria are not met.

Acute Toxicity

The Acute Toxicity Estimate (ATE) for an oral exposure to this mixture is >5000 mg/kg body weight.

The Acute Toxicity Estimate (ATE) for a dermal exposure to this mixture is >5000 mg/kg body weight.

The Acute Toxicity Estimate (ATE) for an inhalation (vapour) exposure to this mixture is >20 mg/l.

The Acute Toxicity Estimate (ATE) for an inhalation (dust and mist) exposure to this mixture is >5 mg/l.

Chronic Exposure

Based on available data, the classification criteria are not met.

Likely Routes of Exposure

Inhalation, Ingestion, Skin contact, Eye contact.

0000107-21-1 ETHYLENE GLYCOL

The substance can be absorbed into the body by inhalation, through the skin and by ingestion.

Potential Health Effects - Miscellaneous

Based on available data, the classification criteria are not met.

0000107-21-1 ETHYLENE GLYCOL

LD50 (oral, rat): 5.89 g/kg; 8.54 g/kg; 13.0 g/kg (5)

LD50 (oral, mouse): 7.5 g/kg; 15.28 g/kg (5,6)

LD50 (oral, guinea pig): 6.6 g/kg; 11.0 g/kg (5)

LD50 (oral, rabbit): 5.0 g/kg (5)

LD50 (dermal, rabbit): 9.5 g/kg (6)

SECTION 12) ECOLOGICAL INFORMATION**Ecotoxicity**

No data available.

Persistence and Degradability

0000107-21-1 ETHYLENE GLYCOL

Readily biodegradable.

Bioaccumulative Potential

0000107-21-1 ETHYLENE GLYCOL

No potential for bioaccumulation.

Mobility in Soil

0000107-21-1 ETHYLENE GLYCOL

Adsorption to solid soil phase is not expected. Ethylene glycol will preferentially be distributed into the compartment water.

Other Adverse Effects

No data available.

Results of the PBT and vPvB assessment

0000107-21-1 ETHYLENE GLYCOL

The substance is not PBT / vPvB.

SECTION 13) DISPOSAL CONSIDERATIONS

Waste Disposal

Under RCRA, it is the responsibility of the user of the product, to determine at the time of disposal whether the product meets RCRA criteria for hazardous waste. Waste management should be in full compliance with federal, state, and local laws.

Empty containers retain product residue which may exhibit hazards of material, therefore do not pressurize, cut, glaze, weld or use for any other purposes. Return drums to reclamation centers for proper cleaning and reuse.

SECTION 14) TRANSPORT INFORMATION

U.S. DOT Information

Not regulated.

IMDG Information

Not regulated.

IATA Information

Not regulated.

SECTION 15) REGULATORY INFORMATION

CAS	Chemical Name	% By Weight	Regulation List
0102687-65-0	1-PROPENE, 1-CHLORO-3,3,3-TRIFLUORO-, (1E)-	7% - 17%	DSL - Domestic Substance List, SARA312, TSCA - Toxic Substances Control Act (TSCA)
0013674-84-5	2-PROPANOL, 1-CHLORO-. PHOSPHATE (3:1)	6% - 12%	DSL - Domestic Substance List, SARA312, TSCA - Toxic Substances Control Act (TSCA)
0000080-70-6	GUANIDINE, N,N,N',N''-TE-TRAMETHYL-	0.1% - 1%	DSL - Domestic Substance List, SARA312, TSCA - Toxic Substances Control Act (TSCA)
0000107-21-1	ETHYLENE GLYCOL	0.1% - 1%	SARA313, DSL - Domestic Substance List, CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act, HAPS, SARA312, OC_HAPS, VOC, TSCA - Toxic Substances Control Act (TSCA), California Proposition 65

SECTION 16) OTHER INFORMATION

OTHER INFORMATION

Note: As per GHS, category 1 is the greatest level of hazard within each class.

Glossary

ACGIH- American Conference of Governmental Industrial Hygienists; ANSI- American National Standards Institute; CA Prop65- California Proposition 65; Canadian TDG- Canadian Transportation of Dangerous Goods; CAS- Chemical Abstract Service; Chemtrec- Chemical Transportation Emergency Center (US); CHIP- Chemical Hazard Information and Packaging; DSL- Domestic Substances List; EC- Equivalent Concentration; EH40 (UK)- HSE Guidance Note EH40 Occupational Exposure Limits; EPCRA- Emergency Planning and Community Right-To-Know Act; ESL- Effects screening levels; HMIS- Hazardous Material Information Service; LC- Lethal Concentration; LD- Lethal Dose; NFPA- National Fire Protection Association; OEL- Occupational Exposure Limits; OSHA- Occupational Safety and Health Administration, US Department of Labor; PEL- Permissible Exposure Limit; RCRA- Resource Conservation and Recovery Act; SARA (Title III)- Superfund Amendments and Reauthorization Act; SARA 313- Superfund Amendments and Reauthorization Act, Section 313; SCBA- Self-Contained Breathing Apparatus; STEL- Short Term Exposure Limit; TCEQ- Texas Commission on Environmental Quality; TLV- Threshold Limit Value; TSCA- Toxic Substances Control Act Public Law 94-469; TWA- Time Weighted Value; US DOT- US Department of Transportation; WHMIS- Workplace Hazardous Materials Information System.

ACGIH - American Conference of Governmental Industrial Hygienists; CAS - Chemical Abstracts Service ; Chemtrec - Chemical Transportation Emergency Center; DSL - Domestic Substances List; ESL- Effects screening levels; GHS - "Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations; HMIS - Hazardous Material Information Service; IATA - Dangerous Goods Regulations (DGR) for the air transport (IATA); IMDG - International Maritime Dangerous Goods Code; LC - Lethal Concentration; LD - Lethal Dose; NFPA - National Fire Protection Association; OEL - Occupational Exposure Limits; OSHA- Occupational Safety and Health Administration, US Department of Labor; PEL - Permissible Exposure Limit; SARA 313 - Superfund Amendments and Reauthorization Act, Section 313; SCBA - Self Contained Breathing Apparatus; ppm - parts per million; STEL - Short-term exposure limit; TLV - Threshold Limit Value; TSCA - Toxic Substances Control Act Public Law 94-469; TWA - Time-weighted average; US DOT- US Department of Transportation.

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