SAFETY DATA SHEET

Section 1. PRODUCT AND COMPANY IDENTIFICATION

Product Name:	Halotron® BrX (BTP)
Other Identifiers:	1-propene, 2-bromo-3,3,3-trifluoro-; propene, 2-bromo-3,3,3-trifluoro-; 2-bromo-3,3,3-trifluoropropene; 2-bromo-3,3,3-trifluoroprop-1-ene; 3,3,3-trifluoro-2-bromopropene; R-1233B1
Model Code(s) for Extinguishers:	337,347, 349, 351
Product Code:	Reach Registration 01-2120043689-45-0000 Pre-Registration UK-01-4566953204-1-0001
Recommended Use:	Fire suppression agent, liquid concentrate.
Manufacturer:	AMEREX CORPORATION
Internet Address:	www.amerex-fire.com
Address:	7595 Gadsden Highway, P.O. Box 81 Trussville, AL 35173-0081
Company Telephone:	(205)655-3271
E-mail Address:	info@amerex-fire.com
Emergency Contacts:	Chemtrec 1(800) 424-9300 or (703) 527–3887
Revised:	May 4, 2022

Section 2. HAZARDS IDENTIFICATION

GHS – Classification

Health	Environmental	Physical
Acute Toxicity: Category 4	None	Warning
Skin Corrosion/Irritation: Category 2	None	Warning
Skin Sensitization: None	None	None
Eye: None	None	None
STOT (Single Exposure) – Category 3 (CNS, Respiratory)	None	Warning
Carcinogen: None	None	None

GHS – Label Symbol(s):

If Pressurized: Gas Under Pressure

GHS – Signal Word(s): **Warning: (STOT-Single Exposure; CNS, Respiratory)**

GHS – Hazard Phrases

GHS Hazard	GHS Codes(s)	Code Phrase(s)
Physical	H229	*- Pressurized container; may burst if heated.
Health	H302	Harmful if swallowed.
	312	Harmful in contact with skin.
	315	Causes skin irritation.
	332	Harmful if inhaled.
	335	May cause respiratory irritation.
	336	May cause drowsiness and dizziness.
Environmental		
Precautionary:		
General	P101	If medical advice is needed, have product container or label at hand.
Prevention	P261	Avoid breathing dust/fume/gas/mist/vapors/spray.
	264	Wash skin thoroughly after handling.
	270	Do not eat, drink or smoke when using this product.
	281	Use personal protective equipment as required.
Response	P312	Call a doctor if you feel unwell.
	321	Specific treatment (see Section 4. First Aid Measures).
	302+352	IF ON SKIN: Wash with plenty of soap and water.
	304+340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
	308+311	If exposed or concerned: Call a POISON CENTER/ doctor.
	308+313	IF exposed or concerned: Get medical advice/attention.
	305+351+338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.
	332+313	If skin irritation occurs: Get medical advice/attention.
	337+313	If eye irritation persists get medical advice/attention.
Storage	P410+403	*- Protect from sunlight. Store in well-ventilated place.
Disposal	P501	Dispose of contents through a licensed disposal company. Contaminated container should be disposed of as unused product.

*- If under pressure

Section 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	EC No.	REACH Reg. No.	CAS-No.	Weight %
2-bromo-3,3,3-trifluoroprop-1-ene	627-872-0	NA	1514-82-5	>99%
Proprietary stabilizer additives	NA	NA	NA	<1%

Adverse Health Effects and Symptoms: May cause respiratory irritation and dizziness/drowsiness if inhaled.

Section 4. FIRST AID MEASURES

Eye Exposure: May cause irritation. Rinse victim's eyes with water or normal saline solution for 10 to 15 minutes. If symptoms persist, consult a physician.

Skin Exposure: Causes skin irritation. Wash all affected skin areas thoroughly with soap and water. If symptoms persist, contact a physician.

Inhalation:	If gross overexposure occurs, symptoms include dizziness, drowsiness, confusion, and unconsciousness; may cause cardiac arhythmia. If respiratory irritation occurs, symptoms would include coughing, wheezing, and difficulty breathing. Remove person to fresh air. If symptoms persist, contact a physician. Give oxygen or artificial respiration as necessary.
Ingestion:	Overdose symptoms may include nausea and general weakness. Rinse mouth and throat. Do not induce vomiting. If symptoms persist, contact a physician. If the person is awake and alert, give the person water to drink. If the victim is convulsing or unconscious, do not give anything by mouth, ensure that the victim's airway is open and lay the victim on his/her side with the head lower than the body.
Medical ConditionsPpossibly Aggravated by Exposure:	None

Section 5. FIRE-FIGHTING MEASURES

Flammable Properties:	Not applicable
Flash Point:	None
Suitable Extinguishing Media:	Use extinguishing media suitable for surrounding conditions. Use water spray or fog to cool storage containers to help prevent an uncontrolled pressure release of bulk tanks, if applicable.
Hazardous Combustion Products:	There may be a release of toxic by-products, including hydrogen halides that can cause damage. Avoid inhalation of these materials by evacuating and ventilating the area.
Explosion Data:	
Sensitivity to Mechanical Impact:	Not sensitive
Sensitivity to Static Discharge:	Not sensitive
Unusual Fire/Explosion Hazards:	See above – Hazardous Combustion Products
Protective Equipment and Precautions for Firefighters:	As in any fire, wear self-contained breathing apparatus (pressure-demand, NIOSH approved or equivalent), and full protective gear.

Note: In air, if pressure and temperature levels become highly elevated beyond normal conditions, 2-bromo-3,3,3-trifluoroprop-1-ene may become combustible. Whether or not this material becomes combustible depends on the relationship among the temperature, pressure, and oxygen concentration. This chemical is extremely effective as a fire extinguishing agent when

it is applied as a spray or stream, but the chemical should not be used in situations where mixtures in air exceeding a few pounds per square inch could be achieved.

Section 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions:	Evacuate personnel to safe areas. Ensure adequate ventilation, especially in confined areas. Monitor oxygen level.
Personal Protective Equipment:	Not necessary in normal situations. In potentially high concentration areas wear self-contained breathing apparatus when entering area unless atmosphere is proven safe. Wear full-face air purifying respirator with an organic vapor, multi-purpose cartridge if monitoring shows that the oxygen level is adequate (>19.5%). Wear protective eyewear and long sleeved shirt.
Emergency Procedures:	Handle in accordance with good health and safety practices.
Methods for Containment:	Stop the flow of gas or remove cylinder to outdoor location if this can be done without risk. If leak is in container or container valve, contact the appropriate emergency telephone number in Section 1 or call your closest supplier location.
Methods for Clean Up:	Dam up and soak up with inert absorbent material. Place in suitable containers for disposal. Return cylinder to authorized distributor. See Section 8.
Environmental Precautions:	Prevent material from entering waterways.
Waste Disposal:	Observe all federal, state, and local regulations for products of this type when accomplishing disposal.
Other:	None

Section 7. HANDLING AND STORAGE

Personal Precautions:	Use appropriate PPE when handling or maintaining equipment. Avoid contact with skin. Handle only in well-ventilated areas. Wash thoroughly after handling (see Section 8).
Conditions for Safe Storage/Handling:	Keep product in original container or extinguisher. Prevent falling. Do not allow near heat sources. Contents may be under pressure – inspect extinguisher consistent with product labeling to ensure container integrity.

Incompatible Products:	None
Hazardous Decomposition Products:	During fire, there may be a release of toxic by-products, including carbon monoxide, carbon dioxide, and hydrogen halides that can cause damage.
Hazardous Polymerization:	Not applicable.

Section 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Chemical Name	OSHA PEL	NCEL	DFG MAK *	EU BLV
2-bromo-3,3,3-trifluoroprop-1-ene	NA	1.0 ppm	NA	NA

All values are 8 hour time weighted average concentrations. NCEL – New chemical exposure limits

Engineering Controls: Showers
Eyewash stations
Ventilation systems

Personal Protective Equipment – PPE Code E:

The need for respiratory protection is not probable during short-term exposure. PPE use during production process must be independently evaluated.




Eye/Face Protection:	Tightly fitting safety goggles, or safety glasses with side shields.
Skin and Body Protection:	Wear protective gloves (neoprene, nitrile, or PVA), and coveralls or long sleeve shirts.
Respiratory Protection:	Not normally necessary. If exposure limits are exceeded or irritation is experienced, NIOSH approved respiratory protection should be worn. Use air-purifying respirator (APR) with organic vapor canisters if exposure may exceed the NCEL. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current safety and health requirements. The need for respiratory protection is not likely for short-term use in well ventilated areas.

Hygiene Measures:	Good personal hygiene practice is essential, such as avoiding food, tobacco products, or other hand-to-mouth contact when handling. Wash thoroughly after handling.

Section 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Colorless to slightly yellowish liquid
Molecular Weight:	174.95
Odor:	Solvent, ether-like
Odor Threshold:	No information available
Decomposition Temperature ^{o}C:	Approximately 600
Freezing Point ^{o}C:	-131.2
Initial Boiling Point ^{o}C:	34.4
Physical State:	Liquid
pH:	Not Applicable
Flash Point ^{o}C:	None
Autoignition Temperature ^{o}C:	None observed at highest test temperature of 400 ^{o}C
Boiling Point/Range ^{o}C:	27
Melting Point/Range ^{o}C:	-111.2
Flammability:	Not flammable under normal conditions.
Flammability Limits in Air ^{o}C:	Upper – Not Flammable; Lower-Not Flammable
Explosive Properties:	None
Oxidizing Properties:	None
Volatile Component (%vol)	Not Applicable
Evaporation Rate:	Not Available
Vapor Density:	7.27 g/L at 20 ^{o}C
Vapor Pressure:	82.0 kPa at 25 ^{o}C
Specific gravity:	Approximately 1.65 at 25 ^{o}C
Solubility in water:	1.01 g/L at 20 ^{o}C
Partition Coefficient:	2.7 at 25 ^{o}C
Viscosity:	No Information Available

Section 10. STABILITY AND REACTIVITY

Stability:	Stable under recommended storage and handling conditions. Vapors are heavier than air and can spread along floors displacing oxygen. Will decompose if exposed to a high radiant heat source, such as fire.
Reactivity:	No hazardous reactions under normal handling and storage.

Incompatibles:	Incompatible with alkali or alkaline earth metals, and powdered metals Al, Zn, Be, etc. Avoid contact with oxidizers.
Conditions to Avoid:	
Hazardous Decomposition Products:	Thermal decomposition may produce carbonyl halide, hydrogen fluoride, and hydrogen bromide. These chemicals can be dangerous and exposure to them should be limited to the extent possible.
Possibility of Hazardous Reactions:	Hazardous decomposition products are formed under fire conditions.
Hazardous Polymerization:	Has not been determined.

Section 11. TOXICOLOGICAL INFORMATION

Likely Routes of Exposure:	Inhalation, skin and eye contact.
Symptoms:	
Immediate:	
Inhalation:	Oxygen levels in the air can be reduced, causing loss of coordination, dizziness, increased heart rate, headache, confusion. Respiratory irritation may occur. Cardiac arrhythmia is possible. May impact the CNS causing drowsiness, dizziness, confusion, and unconsciousness.
Eyes:	May cause irritation.
Skin:	Irritation.
Delayed:	Symptoms appear to be relatively immediate.
Acute Toxicity:	Relatively non-toxic.
Chronic Toxicity:	
Short-term Exposure:	STOT (Single Exposure) – Narcotic effect, CNS; Respiratory irritation.
Long-term Exposure:	None

Acute Toxicity Values – Health

Acute toxicity	Inhalation test: Rats - 5% volume for 30 minutes: no deaths.
Acute toxicity	Inhalation test: Rats – 14 days, 6 hours/day, 5 days/week for two weeks: no deaths after six doses between 5,000 and 20,000 ppm. The research effects included slowdown and difficulty breathing, a situation that returned to normal at the end of exposure. In addition there was a decrease in

	bodyweight. The chemical exhibited irritant impacts in the upper respiratory system.
Acute toxicity	Inhalation test: Rats – 90 days, 6 hours/day, 5 days/week with a four week recovery period: no deaths after six doses between 200 and 3,000 ppm. The research effects included slowdown and difficulty breathing, a situation that returned to normal at the end of exposure. In addition there was a decrease in bodyweight and appetite. The chemical exhibited irritant impacts in the upper respiratory system. Changes in blood chemistry were noted.
Skin Corrosion/Irritation	No impact observed for rabbits.
Eye Damage/Irritation	No impact observed for rabbits.
Germ Cell Mutagenicity	Test did not induce a mutagenic response in human lymphocytes.
Carcinogenicity	No data were available
Reproductive Toxicity:	No observed defects for rats
Target Organs and Effects (TOST):	Single Exposure: Respiratory – Dogs – Observed adverse effect level (NOAEL) cardiotoxic based on inhalation testing with epinephrine: 1.0%

Other Toxicity Categories

Chemical Name	Germ Cell Mutagenicity	Carcino-genicity	Repro-ductive	TOST Single Exp	TOST Repeated Exp	Aspiration
2-bromo-3,3,3-trifluoroprop-1-ene	Conflicting data	None	None	1 CNS, Respiratory	None	None

Section 12. ECOLOGICAL INFORMATION

Ecotoxicity:	Moderate risk.
Persistence/Degradability:	Persistance is unlikely.
Probability of Biodegradation:	Not readily biodegradable in water. Short atmospheric lifetime.
Water Solubility:	1.01 g/L at 20 ^{o}C.
Bioaccummulation:	Unlikely
Other Adverse Ecological Effects:	This chemical is a volatile organic compound and should not be permited to be mixed with ground or drinking water and should be handled, used, and disposed of in accordance with regulatory requirements.

Aquatic Toxicity Values - Research

Chemical Name	Acute (LC50)	Chronic (LC50)
2-bromo-3,3,3-trifluoroprop-1-ene	31.6 mg/L 96h Oncorhynchus mykiss (Rainbow trout) EC50: 83.0 mg/L 48h Daphnia magna (Water flea)	No information found No information found

Section 13. DISPOSAL CONSIDERATIONS

Safe Handling	Use appropriate PPE when handling, and wash thoroughly after handling (see Section 8).
Waste Disposal Considerations	Dispose in accordance with federal, state, and local regulations.
Contaminated Packaging	Dispose in accordance with federal, state, and local regulations.

NOTES:
This product is not a RCRA characteristically hazardous or listed hazardous waste. Dispose of according to state or local laws, which may be more restrictive than federal laws or regulations. Used product may be altered or contaminated, creating different disposal considerations.

Section 14. TRANSPORT INFORMATION

UN Number:	1956
UN Proper Shipping Name:	Compressed Gas
Transport Hazard Class:	2.2
Packing Group:	NA
Marine Pollutant?:	NO

See current applicable transport regulations (DOT - Ground, IATA – Air, IMDG – Maritime) prior to shipping.

NOTES:
This product is not defined as a hazardous material under U.S. Department of Transportation (DOT) 49 CFR 172, or by Transport Canada “Transportation of Dangerous Goods” regulations. This transportation information covers the Halotron®BrX (CAS 1514-82-5) fire extinguisher agent as shipped in bulk containers and not when contained in fire extinguishers or fire extinguisher systems.

Special Precautions for Shipping:
If shipped in a stored pressure-type fire extinguisher, and pressurized with a non-flammable, non-toxic inert expellant gas, the fire extinguisher is considered a hazardous material by the US Department of Transportation and Transport Canada. The proper shipping name shall be FIRE EXTINGUISHER and the UN designation is UN 1044. The DOT hazard class/division is LIMITED QUANTITY when pressurized to less than 241 psig and when shipped via highway or rail. UN Class 2.2. Non-Flammable Gas, when shipping via air. Packing Group – N/A

Section 15. REGULATORY INFORMATION

International Inventory Status: All ingredients are on the following inventories

Country(ies)	Agency	Status
United States of America	TSCA	Yes
Canada	DSL	No
Europe	EINECS/ELINCS	No
Australia	AICS	No
Japan	MITI	No
South Korea	KECL	No

REACH Title VII Restrictions: No information available

Chemical Name	Dangerous Substances	Organic Solvents	Harmful Substances Whose Names Are to be Indicated on Label	Pollution Release and Transfer Registry (Class II)	Pollution Release and Transfer Registry (Class I)	Poison and Deleterious Substances Control Law
2-bromo-3,3,3-trifluoroprop-1-ene	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable

Component	ISHA – Harmful Substances Prohibited for Manufacturing, Importing, Transferring, or Supplying	ISHA – Harmful Substances Requiring Permission	Toxic Chemical Classification Listing (TCCL) – Toxic Chemicals	Toxic Release Inventory (TRI) – Group I	Toxic Release Inventory (TRI) – Group II
2-bromo-3,3,3-trifluoroprop-1-ene	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable

European Risk and Safety phrases:

EU Classification:

R Phrases:	36/37/38	Irritating to eyes, respiratory system and skin.
S Phrases:	23	Do not breathe gas/fumes/vapour/spray.
	24/25	Avoid contact with skin and eyes.
	36/37/39	Wear suitable protective clothing, gloves and eye/face protection.
	45	In case of accident or if you feel unwell seek medical advice immediately.

U.S. Federal Regulatory Information:

SARA 313:
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA) - This product is not subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

Clean Water/Clean Air Acts:
This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42). This product is not regulated as a pollutant and is not listed in the Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (see 40 CFR 61) and Section 112 of the Clean Air Act Amendments of 1990 (Destroys ozone in the upper atmosphere).

U.S. State Regulatory Information:

Chemicals in this product are covered under specific State regulations, as denoted below:

Alaska - Designated Toxic and Hazardous Substances: None
California – Permissible Exposure Limits for Chemical Contaminants: None
Florida – Substance List: None
Illinois – Toxic Substance List: None
Kansas – Section 302/303 List: None
Massachusetts – Substance List: None
Minnesota – List of Hazardous Substances: None
Missouri – Employer Information/Toxic Substance List: None
New Jersey – Right to Know Hazardous Substance List: None
North Dakota – List of Hazardous Chemicals, Reportable Quantities: None
Pennsylvania – Hazardous Substance List: None
Rhode Island – Hazardous Substance List: None
Texas – Hazardous Substance List: None
West Virginia – Hazardous Substance List: None
Wisconsin – Toxic and Hazardous Substances: None
California Proposition 65: No

Other:

Mexico – Grade	Listed

Section 16. OTHER INFORMATION

This SDS conforms to requirements under U.S., U.K., Canadian, Australian, and EU regulations or standards, and conforms to the proposed 2003 ANSI Z400.1 format. No modifications of this SDS are authorized by AMEREX Corporation. Questions or comments should be directed to AMEREX Corporation (See Section 1).

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Revision Notes	None

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