



SAFETY DATA SHEET

Section 1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: AVT®
Model Code(s) of Extinguishers: 2V, 4V, 4H, 5V, 5H
Product Use: Fire extinguisher agent
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: April 18, 2024; Revision D

Section 2. HAZARDS IDENTIFICATION

GHS – Classification

Hazard Class	Category	Signal Words
Aerosols	Category 3	Warning
Gases under pressure	Refrigerated liquefied gas	Warning
Acute toxicity, oral	Category 5	Warning
Acute toxicity, dermal	Category 5	None
Serious eye damage/eye irritation	Category 2A	Warning
Specific target organ toxicity, single exposure; Respiratory tract irritation	Category 3	Warning

GHS – Label Symbol(s):



Gas Under Pressure



GHS – Signal Word(s):

Warning

Other Hazards Not Resulting in Classification:

Simple asphyxiant. May displace oxygen and cause rapid suffocation; may cause frostbite in contact with skin or eyes.

GHS – Hazard Phrases

GHS Hazard	GHS Codes(s)	Code Phrase(s)
Physical	H229 281	*Pressurized container; may burst if heated. Contains refrigerated gas; may cause cryogenic burns or injury.
Health	H303 313 319 335	May be harmful if swallowed. May be harmful in contact with skin. Causes serious eye irritation. May cause respiratory irritation.
Environmental	None	
Precautionary:		
General	P101	If medical advice is needed, have product container or label at hand.
Prevention	P210 251 261 271 280 264+265	Keep away from heat, hot surface, sparks, open flames and other ignition sources. No smoking. Do not pierce or burn, even after use. Avoid breathing gas. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection. Wash hands and face thoroughly after handling. Do not touch eyes.
Response	P319 301+317 302+317 304+340 305+351+338 336+317 337+317	Get medical help if you feel unwell. IF SWALLOWED: Get medical help. IF ON SKIN: Get medical help. IF INHALED: Remove person to fresh air and keep comfortable for breathing. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing. Thaw frosted parts with lukewarm water. Do not rub affected areas. Get medical help. If eye irritation persists: Get medical help.
Storage	403+233 410+412	Store in a well ventilated place. Keep container tightly closed. *Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122°F.
Disposal	P501	Dispose of contents/container through a licensed disposal company in accordance with local/state/national regulations.

*- Fire extinguishers are designed to be used to extinguish fires.

Section 3. COMPOSITION/INFORMATION ON INGREDIENTS

The precise composition of this mixture is proprietary information.

A more complete disclosure will be provided to a physician or other competent authority in the event of a medical emergency. All components are registered in the Chemical Abstract Service (CAS).

All Sections exhibit information for the chemicals involved.

Chemical Name	EC No.	REACH Reg. No.	CAS-No.	Weight %
1,1,1,2,3,3,3-Heptafluoropropane	207-079-2	NA	431-89-0	65 - 97
Proprietary Product	NA	NA	NA	3 - 35

NOTE: The concentration ranges exhibited above include the actual concentrations of the chemicals in the mixture; however, actual concentrations are withheld as a trade secret.

Adverse Health Effects and Symptoms: Possible serious irritant to the eyes; mild irritant to the skin. Ingestion, though unlikely, may cause gastrointestinal irritation and edema (fluid retention).

Section 4. FIRST AID MEASURES

Eye Exposure:	Causes serious eye irritation. Irrigate eyes with water and repeat until pain free. Seek medical attention if irritation develops, or if vision changes occur. Liquid or cold gas can cause freezing injury to eyes. Flush eyes with cool water for 15 minutes. Seek medical attention immediately.
Skin Exposure:	Causes skin irritation. In case of contact, wash with plenty of soap and water. Seek medical attention if irritation persists. May cause cold burns or frostbite. Remove contaminated clothing and flush affected areas with lukewarm (NOT HOT) water. Seek medical attention immediately if blistering of the dermal surface or if deep tissue freezing occurs
Inhalation:	May cause coughing. If respiratory irritation or distress occurs, remove victim to fresh air. Seek medical attention if problems persists.
Ingestion:	Overdose symptoms may include thirst, nausea, and severe diarrhea and vomiting. If victim is conscious and alert, give 2-3 glasses of water to drink. If conscious, do not induce vomiting. Seek immediate medical attention. Do not leave victim unattended. To prevent aspiration of swallowed product, lay victim on side with head lower than waist.
Medical Conditions Possibly Aggravated by Exposure:	None

Section 5. FIRE-FIGHTING MEASURES

Flammable Properties:	Not flammable
Flash Point:	Not determined
Suitable Extinguishing Media:	Non-combustible. Cool fire-exposed cylinders until flames are extinguished. Damaged cylinders should be handled only by specialists.
Hazardous Combustion Products:	Carbon oxides (including CO ₂ and CO).
<u>Explosion Data:</u>	
Sensitivity to Mechanical Impact:	Not sensitive
Sensitivity to Static Discharge:	Not sensitive
Unusual Fire/Explosion Hazards:	In a fire this material may decompose, releasing oxides of carbon, potassium and nitrogen (see Section 10). Cylinders could rupture under heat of fire.

Protective Equipment and
Precautions for Firefighters:

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

Section 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions:

Evacuate personnel to safe areas. Avoid contact with skin and eyes. Ensure adequate ventilation, especially in confined areas; monitor oxygen level.

Personal Protective Equipment:

None unless there is a chance of direct contact with the chemical. Wear self-contained breathing apparatus when entering area unless atmosphere is proved safe. Wear appropriate PPE for the situation.

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:

Return cylinder to authorized distributor.

Environmental Precautions:

Prevent spreading of vapors through sewers, ventilation systems and confined areas.

Other:

If product is contaminated, use PPE and containment appropriate to the nature of the most toxic chemical/material in the mixture.

Section 7. HANDLING AND STORAGE

Personal Precautions:

Put on appropriate personal protective equipment
Contains gas under pressure. Do not get in eyes or on skin or clothing. Avoid breathing gas. Empty containers retain product residue and can be hazardous. Do not puncture or incinerate container. Close valve after each use and when empty.

Conditions for Safe Storage/Handling:

If pressurized – Protect from sunlight and store in a well-ventilated place. Protect cylinders from physical damage; do not drag, roll, slide, or drop. Use a suitable hand truck for cylinder movement. Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas.

Incompatible Products:

Do not mix with other extinguishing agents, Incompatible with strong oxidizing agents and strong acids. Do not store in high humidity.

Hazardous Decomposition Products:

Carbon and sodium oxides.

Hazardous Polymerization:

Will not occur.

Section 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Chemical Name	OSHA PEL	ACGIH TLV	DFG MAK *	EU BLV
1,1,1,2,3,3,3-Heptafluoropropane	NR	NR	NR	NA
Proprietary Product	NR	NR	NR	NA

NR = Not Regulated. All values are 8 hour time weighted average concentrations.

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:

Skin and Body Protection:

Respiratory Protection:

Wear tightly fitting chemical goggles.

Wear protective gloves/coveralls.

Positive-pressure supplied air respirators may be required for high airborne 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:	White gas
Molecular Weight:	162.2
Odor:	Light, ethereal
Odor Threshold:	No information available
Decomposition Temperature °C:	No information available
Freezing Point °C:	Approximately 125
Initial Boiling Point °C:	No information available
Physical State:	Gas
pH:	No information available
Flash Point °C:	None
Auto-ignition Temperature °C:	None
Boiling Point/Range °C:	No information available
Melting Point/Range °C:	No information available
Flammability:	Not Flammable
Flammability Limits in Air °C:	Upper – Not Flammable; Lower-Not Flammable
Explosive Properties:	None
Oxidizing Properties:	None
Volatile Component (%vol)	Not Applicable
Evaporation Rate:	Not Applicable
Density:	1.53 g/cc (at 20°C)
Vapor Pressure:	400 kPa (at 20°C)
Specific gravity at 25°C:	Not Applicable
Solubility (in water):	No information available
Partition Coefficient: octanol/water	No information available

Section 10. STABILITY AND REACTIVITY

Reactivity:	This material may be reactive with certain agents under certain conditions - see the remaining headings in this section.
Chemical Stability:	Stable under recommended storage and handling conditions.
Incompatibles:	Light and/or alkaline metals, alkaline earth metals, powdered metals, oxidizing agents. Avoid contact with oxidizing agents and strong acids.
Conditions to Avoid:	Heat and storage or handling near incompatibles.
Hazardous Decomposition Products:	Gaseous hydrogen fluoride (HF), fluorophosgene Carbon, nitrogen, and potassium oxides. Heat of fire may release carbon monoxide. The release of other hazardous decomposition products is possible.

Possibility of Hazardous Reactions: Strong oxidizers, alkali metals and alkaline earth metals may cause fires or explosions.
 Hazardous Polymerization Does not occur.

Section 11. TOXICOLOGICAL INFORMATION

Likely Routes of Exposure: Inhalation, skin, and eye contact.
 Symptoms:
 Immediate:
 Inhalation: Coughing.
 Eyes: Irritation, and freezing gas may cause burns or frostbite.
 Skin: Irritation, and freezing gas may cause burns or frostbite.
 Delayed: Symptoms appear to be relatively immediate
 Acute Toxicity: Non-toxic.
 Chronic Toxicity:
 Short-term Exposure: None known.
 Long-term Exposure: None known.

Acute Toxicity Values - Health

Chemical Name	LD50		LC50 (Inhalation)
	Oral	Dermal	
1,1,1,2,3,3,3-Heptafluoropropane	800,000 ppm (Rat/4h)	Not available	Not available
With Proprietary Product	< 3500 mg/kg (rat)	>1800 mg/kg (rabbit)	Not available

Reproductive Toxicity: This product's ingredients are not known to have reproductive or teratogenic effects.
 Target Organs and Effects (TOST): Respiratory system (mild irritant).
 This product is a mild irritant to epithelial tissue, (eyes, mucous membranes, skin) and may aggravate dermatitis. No information was found indicating the product causes sensitization.

Other Toxicity Categories

Chemical Name	Germ Cell Mutagenicity	Carcinogenicity	Reproductive	TOST Single Exp	TOST Repeated Exp	Aspiration
1,1,1,2,3,3,3-Heptafluoropropane	None	None	None	None	None	None
Proprietary Product	None	None	None	None	None	None

Section 12. ECOLOGICAL INFORMATION

Ecotoxicity:	Low risk.
Persistence/Degradability:	Degrades slowly
Probability of Rapid Biodegradation:	Low
Anaerobic Biodegradation Probability:	Rapid
Bioaccumulation:	Low
Bioconcentration Factor:	Low
Mobility in Soil (Log Koc-MCI Method)	Slow
Water Solubility:	Information not available
Atmospheric Oxidation Half-Life:	

Other Adverse Ecological Effects: No other known effects at this time

Aquatic Toxicity Values – Environment – Research

Chemical Name	Acute (LC50)	Chronic (EC50)
1,1,1,2,3,3,3-Heptafluoropropane With Proprietary Product	>100 mg/L 96h Brachydanio rerio (zebra fish) >100 mg/L 48h Daphnia magna	>114 mg/L 72h Pseudokirchneriella subcapitata

Aquatic Toxicity Values – Environment – Estimates

Chemical Name	Acute (LC50)	EC50
1,1,1,2,3,3,3-Heptafluoropropane With Proprietary Products	N/A	N/A

Section 13. DISPOSAL CONSIDERATIONS

Safe Handling	Use appropriate PPE when handling, and wash.
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: 3296
 UN Proper Shipping Name: HEPTAFLUOROPROPANE
 Transport Hazard Class: 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 AVT 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. 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	WHIMS	Yes
Australia	AICS	Listed or Exempt
Europe	EINECS/ELINCS	Not Classified

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
1,1,1,2,3,3,3-Heptafluoropropane With Proprietary Product	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
1,1,1,2,3,3,3-Heptafluoropropane With Proprietary Product	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable

European Risk and Safety phrases:

EU Classification:	XN	Irritant
R Phrases:	20	Harmful by inhalation
	36/38	Irritating to eyes and skin
	44	Risk of explosion if heated under confinement
S Phrases:	9	Keep in a well-ventilated place.
	24/25	Avoid contact with skin and eyes.
	26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
	36/37/39	Wear suitable protective clothing, gloves and eye/face protection.
	38	In case of insufficient ventilation wear suitable respiratory equipment.
	45	In case of accident or if you feel unwell seek medical advice immediately (show the label where possible).

U.S. Federal Regulatory Information:

SARA 313:

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA) - This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372. None of the chemicals in this product are under SARA reporting requirements or have SARA threshold planning quantities (TPQs) or CERCLA reportable quantities (RQs), or are regulated under TSCA 8(d).

SARA 311/312 Hazard Categories:

Acute Health Hazard	No
Chronic Health Hazard	No
Fire Hazard	No
*Sudden Release of Pressure Hazard	Yes
Reactive Hazard	No

* - Only applicable if material is in a pressurized extinguisher.

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) or Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (see 40 CFR 61) and Section 112 of the Clean Air Act Amendments of 1990.

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 component is listed on the California Proposition 65 list.

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 Date	18-April-2024; Revision D
Revision Notes	None

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