

Safety Data Sheet

According to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Section 1	CHEMICAL PRODUCT SECTION
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Identification: Product Name: Freeze Spray Anti-Stat
Product Number: 8660

Product description: Halocarbon 134a (1,1,1,2-Tetrafluoroethane)
Product type: Aerosol freeze spray (follow label instructions)
Application: Industrial applications, professional applications

Manufacturer: ACL Incorporated
840 W 49th Place
Chicago, IL 60609
PH: (01) 847.981.9212 [U.S.A.]
FAX: (01) 847.981.9278 [U.S.A.]

Emergency telephone: INFOTRAC: (01) 800.535.5053 (day or night)

Section 2	HAZARDOUS IDENTIFICATION
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Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS] & (US) OSHA HCS/HazCom 2012:

2.1 Classification of the substance or mixture

Aerosols: Compressed Gas

2.2 Label Elements

Hazard Pictograms:



Signal Word: Warning

Hazard Statement:

H280: Contains gas under pressure; may explode if heated

Precautionary Statements Prevention:

Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
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 Response:

If exposed or concerned: Get medical advice/attention

Precautionary Statements – Storage: P410 + P403: Protect from sunlight. Store in a well-ventilated place

P412: Do not expose to temperatures exceeding 50°C / 122°F

Precautionary Statements – Disposal: P251: Do not pierce or burn, even after use. Store in a well-ventilated place

2.3 Other hazards not otherwise classified: Contains gas under pressure; may explode if heated. Intentional misuse and inhalation abuse may cause cardiac or central nervous systems effects. Warning. May Cause frostbite in contact with skin.

2.4 Unknown acute toxicity: No data available

Section 3	COMPOSITION / INFORMATION ON INGREDIENTS
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3.1 Substance/mixture: Substance

CHEMICAL	C.A.S. Number	Weight %	GHS Classification
1,1,1,2 Tetrafluoroethane	811-97-2	> 99	Press. Gas Compr. Gas; H280

Section 4	FIRST AID MEASURES
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4.1.1 General Information: Check the vital functions. Unconscious: maintain adequate airway and respiration. Respiratory arrest: artificial respiration or oxygen. Cardiac arrest: perform resuscitation. Victim conscious with labored breathing: half-seated. Victim in shock: on his back with legs slightly raised. Vomiting: prevent asphyxia/aspiration pneumonia. Prevent cooling by covering the victim (no warming up). Keep watching the victim. Give psychological aid. Keep the victim calm, avoid physical strain. Depending on the victim's condition: doctor/hospital.

4.1.2 Inhalation: Remove the victim into fresh air. Respiratory problems: consult a doctor/medical service.

4.1.3 Skin: Rinse with water. Take victim to a doctor if irritation persists. In case of frostbites: Wash immediately with lots of water (15 minutes)/shower. Do not apply (chemical) neutralizing agents. Remove clothing while washing. Do not remove clothing if it sticks to the skin. Cover wounds with sterile bandage. Consult a doctor/medical service. If burned surface > 10%: take victim to hospital.

4.1.4 Eyes: Rinse immediately with plenty of water for 15 minutes. Do not apply neutralizing agents. Take victim to an ophthalmologist.

4.1.5 Ingestion: Not applicable.

4.1.6 Self-protection of the first aider: No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

4.2 Most important symptoms/effects, acute and delayed

Symptoms/injuries	: Not expected to present a significant hazard under anticipated conditions of normal use.
Symptoms/injuries after inhalation	: EXPOSURE TO HIGH CONCENTRATIONS: Accelerated heart action. Disturbances of heart rate. Coordination disorders. Feeling of weakness. Respiratory difficulties. Vomiting. Nausea. Disturbances of consciousness. Risk of lung edema. Respiratory collapse.
Symptoms/injuries after skin contact	: Red skin. Blisters. Frostbites.
Symptoms/injuries after eye contact	: Not applicable.
Symptoms/injuries after ingestion	: Not applicable.
Chronic symptoms	: No effects known.

4.2 Indication of any immediate medical attention and special treatment needed No additional information available

Section 5	FIRE FIGHTING MEASURES
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5.1 Extinguishing media

Suitable extinguishing media: EXTINGUISHING MEDIA FOR SURROUNDING FIRES: Adapt extinguishing media to the environment.

Unsuitable extinguishing media: No unsuitable extinguishing media known.

5.2 Special hazards arising from the substance or mixture

Hazards from the substance or mixture: DIRECT FIRE HAZARD. Non combustible. INDIRECT EXPLOSION HAZARD. Heat may cause pressure rise in tanks/drums: explosion risk.

Hazardous thermal decomposition products: On burning: release of toxic and corrosive gases/vapors (hydrofluoric acid, carbon monoxide - carbon dioxide, carbonylfluoride). Reacts with (some) acids.

5.3 Advice for firefighters

Special protective actions for fire-fighters: Exposure to fire/heat evacuation. Cool tanks/drums with water spray/remove them into safety. Physical explosion risk: cool from behind cover. Do not move the load if exposed to heat. After cooling: persistent risk of physical explosion. Dilute toxic gases with water spray.

Special protective equipment for fire-fighters: Heat/fire exposure: compressed air/oxygen apparatus.
NFPA Aerosol Level 1

Section 6	ACCIDENTAL RELEASE MEASURES
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6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel: Insulating gloves. Protective clothing. Large spills/in enclosed spaces: compressed air apparatus. Keep upwind. Mark the danger area. Seal off low-lying areas. Close doors and windows of adjacent premises. No naked flames. Carry out specific temperature controls. Wash contaminated clothes. Large spills/in confined spaces: consider evacuation.

For emergency responders: Equip cleanup crew with proper protection.

6.2 Environmental precautions Ventilate area. Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3 Methods and materials for containment and cleaning up

For containment: Contain released substance, pump into suitable containers. Plug the leak, cut off the supply. Tip the container on one side to stop the leakage. Do not spray water on unheated tank walls.

Methods for cleaning up: Damaged/cooled tanks must be emptied.

6.4 Reference to other sections

See Section 1 for emergency contact information.

See Section 8 for information on appropriate personal protective equipment.

See Section 13 for additional waste treatment information.

Section 7	HANDLING AND STORAGE
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The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

7.1 Precautions for safe handling

Protective measures: Pressurized container: Do not pierce or burn, even after use. Comply with the legal requirements. Handle and open the container with care. Thoroughly clean/dry the installation before use. Keep away from naked flames/heat.

Advice on general occupational hygiene: Observe normal hygiene standards. Carry operations in the open/under local exhaust/ventilation or with respiratory protection. Measure the oxygen concentration in the air.

7.2 Conditions for safe storage, including any incompatibilities:

Storage conditions: Keep only in the original container in a cool, well ventilated place away from naked flames/heat. Keep container closed when not in use.

Incompatible products: Strong bases. Strong acids.

Incompatible materials: Sources of ignition. Direct sunlight.

Storage temperature: < 50 °C

Heat-ignition: KEEP SUBSTANCE AWAY FROM: heat sources. Prohibitions on mixed storage: KEEP SUBSTANCE AWAY FROM: (strong) acids.

Storage area: Store in a cool area. Keep out of direct sunlight. Ventilation at floor level. Above ground. Meet the legal requirements.

Special rules on packaging: SPECIAL REQUIREMENTS: with pressure relief valve. clean. correctly labeled. Meet the legal requirements.

Packaging materials: SUITABLE MATERIAL: No data available. MATERIAL TO AVOID: No data available.

7.3 Specific end use(s)

Recommendations: Lowers surface temperature on PCB to locate hot or defective areas.

Industrial sector specific solutions: Filtered to 0.2 microns

Section 8 EXPOSURE CONTROL / PERSONAL PROTECTION

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

8.1 Control parameters

Occupational exposure limits

Occupational exposure limits

ingredient name	OSHA TWA	ACGIH TLV	NIOSH TWA	WEL UK
1,1,1,2 Tetrafluoroethane	2.5 Mg/m ³	2.5 Mg/m ³	No data	No data

Recommended monitoring procedures

DNELs/DMELs: No DNELs/DMELs available.

PNECs: No PNECs available

8.2 Exposure controls

8.2.1 Appropriate engineering controls: Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

8.2.2 Personal protective equipment Gloves. Safety glasses. Avoid all unnecessary exposure



8.2.2.1 Eye/face protection: Safety glasses.

8.2.2.2 Skin protection

Hand protection: GIVE GOOD RESISTANCE: neoprene. nitrile rubber. butyl rubber. Insulated gloves.

Body protection: Protective clothing.

Other protection: Do not eat, drink or smoke during use.

8.2.2.3 Respiratory protection High vapor/gas concentration: self-contained respirator.

8.2.2.4 Thermal hazards: No data

In case of large spill: Section 13 for waste disposal.

Section 9	PHYSICAL AND CHEMICAL PROPERTIES
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Appearance	Colorless gas [Liquefied compressed gas]
Odor	Faint ethereal odor
pH	Neutral
Melting point/freezing point	-101°C (-149.8°F)
Initial boiling point and boiling range	-26°C (-14.8°F)
Flash point and method	Product does not sustain combustion.
Critical temperature	>101°C
Self ignition temperature	>743°C
Decomposition temperature	368°C
Evaporation rate (H ₂ O=1)	Not applicable
Flammability (solid, gas, liquid)	Not flammable
Upper/lower flammability or explosive limits	Not applicable
Vapor pressure	5720 hPa
Critical pressure	40560 hPa
Vapor density (air=1)	3.5 (Air = 1)
Relative density	1.2 (-27°C)
Water solubility.	Poorly soluble in water. Soluble in ethanol. Soluble in ether. Soluble in hexane. Water: 0.15 g/100ml (25 °C)
Partition coefficient: n-octanol/water	1.06
Kinematic Viscosity	Not available
Dynamic viscosity	Not available
Explosive properties	Not available
Log Kow	No data
VOC	0% CARB (See section 15)

Section 10	STABILITY AND REACTIVITY
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10.1 Reactivity: On burning: release of toxic and corrosive gases/vapours (hydrofluoric acid, carbon monoxide - carbon dioxide, carbonylfluoride). Reacts with (some) acids.

10.2 Chemical stability: The product is stable.

10.3 Possibility of hazardous reactions: Not established

10.4 Conditions to avoid: Direct sunlight. Extremely high or low temperatures.

10.5 Incompatible Materials: Strong acids. Strong bases.

10.6 Hazardous decomposition products: Fume. Carbon monoxide. Carbon dioxide

Hazardous polymerization: Under normal conditions of storage and use, hazardous polymerization will not occur.

Section 11	TOXICOLOGY INFORMATION
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11.1 Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
1,1,1,2 - tetrafluoroethane	LC50 Inhalation	Rat	2000 mg/l	---
	LC50 Inhalation	Rat	359300 ppm	4 hours

Skin corrosion / irritation: Not classified

Serious eye damage / irritation: Not classified

Respiratory or skin sensitization: Not classified

Mutagenicity: Not classified based on available data, the classification criteria are not met

Carcinogenicity: Not classified

Reproductive toxicity: Not classified based on available data, the classification criteria are not met

Teratogenicity: Not available

Specific target organ toxicity (single exposure): Not classified

Specific target organ toxicity (repeated exposure): Not classified based on available data, the classification criteria are not met

Aspiration hazard: Not classified based on available data, the classification criteria are not met

Information on the likely routes of exposure: Not available.

Potential acute health effects

Eye contact: Not applicable.

Inhalation : EXPOSURE TO HIGH CONCENTRATIONS: Accelerated heart action. Disturbances of heart rate. Coordination disorders. Feeling of weakness. Respiratory difficulties. Vomiting. Nausea. Disturbances of consciousness. Risk of lung oedema. Respiratory collapse.

Skin contact : Red skin. Blisters. Frostbites0.

Ingestion : Not applicable.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact: Adverse symptoms may include the following: frostbite

Inhalation : No specific data..

Skin contact : Adverse symptoms may include the following: frostbite.

Ingestion : Adverse symptoms may include the following: frostbite

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects: Not available.

Potential delayed effects: Not available.

Long term exposure

Potential immediate effects: Not available.

Potential delayed effects: Not available.

Potential chronic health effects: Not available.

General: No known significant effects or critical hazards.

Carcinogenicity: No known significant effects or critical hazards.

Mutagenicity: No known significant effects or critical hazards.

Teratogenicity: No known significant effects or critical hazards.

Developmental effects: No known significant effects or critical hazards.

Fertility effects: No known significant effects or critical hazards.

Other information: No known significant effects or critical hazards.

Section 12	ECOLOGICAL INFORMATION
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12.1 Toxicity

Ecology - general : No environmental hazard.

Ecology - air : TA-LuftKlasse 5.2.5.

Ecology - water : Mild water pollutant (surface water). Maximum concentration in drinking water: 1.5 mg/l (fluoride) (Directive 98/83/EC). Slightly harmful to fishes (LC50(96h) 100-1000 mg/l). Slightly harmful to invertebrates (Daphnia) (EC50 (48h): 100 - 1000 mg/l).

Product/ingredient name	
1,1,1,2 - tetrafluoroethane	
LC50 fish 1	450 mg/l 96 h; Salmogairdneri (Oncorhynchusmykiss)
EC50 Daphnia 1	980 mg/l (48 h; Daphnia magna)

12.2 Persistence and degradability

Product/ingredient name	
1,1,1,2 - tetrafluoroethane	Not readily biodegradable in water.

12.3 Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
1,1,1,2 - tetrafluoroethane	1.06 (OECD 107: Partition Coefficient (n-octanol/water): Shake Flask Method)	5 - 58 (Estimated value)	Low potential for bioaccumulation (BCF < 500).

12.4 Mobility in soil

Soil/water partition coefficient (K_{oc}): Not available.

Mobility: Not available.

12.5 Results of PBT and vPvB assessment

PBT: Not available.

vPvB: Not available.

12.6 Other adverse effects: Avoid release to the environment.

Section 13 DISPOSAL CONSIDERATIONS

Do not puncture, incinerate or compact aerosol can.

When contents are depleted continue to depress button until all gas is expelled.

RCRA 40 CFR 261 Classifications: As packaged and after use, it does not meet the criteria of a hazardous waste as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261, since it has neither the characteristics of Subpart C nor is listed in Subpart D.

Federal, State, and Local laws governing disposal of material can differ.
Ensure proper disposal compliance with proper authorities before disposal.

LWCA (the Netherlands): KGA category 06. Hazardous waste according to Directive 2008/98/EC.

Section 14 TRANSPORTATION INFORMATION

Special Provisions: DOT-SP 15146: In accordance with this special permit, the product container is marked with DOT-SP15146 instead of 2Q. This packaging is approved for shipping as a Consumer Commodity

	Proper Shipping Name	Hazard Class	Packing Group	UN number	Limitations
US DOT ground	Consumer Commodity	ORM-D	NA	NA	75 kg rail
US DOT air	Consumer Commodity	ORM-D	NA	NA	75kg passenger aircraft 150 kg cargo aircraft
IATA	1,1,1,2-Tetrafluoroethane Non-flammable compressed gas	2.2	NA	3159	Y203
IMDG	1,1,1,2-Tetrafluoroethane Non-flammable compressed gas	2.2	NA	3159	Y203
RID	1,1,1,2-Tetrafluoroethane Non-flammable compressed gas	2.2	NA	3159	Y203
ADN	1,1,1,2-Tetrafluoroethane Non-flammable compressed gas	2.2	NA	3159	Y203

Section 15	REGULATORY INFORMATION
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US Federal Regulations: SDS complies with the OSHA Hazard Communication Rule, 29 CFR 1910.1200.

CERCLA/Superfund, 40 CFR 117. 302: **---None of the chemicals have a reportable quantity---**

SARA Superfund and Reauthorization Act of 1986 Title III sections 302, 311, 312 and 313:

Section 302 – Extremely hazardous substances (40 CFR 355): **---None of the chemicals are Section 302 hazards**

Section 311/312 – (40 CFR 370): :

Chemical Name	Fire	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
1,1,1,2 Tetrafluoroethane		X			

Section 313 – List of Toxic Chemicals (40CFR 372): This product **does not** contain any chemicals on the 313 list of Toxic Chemicals.

Toxic Substance Control Act (TSCA): **All substances are TSCA listed.**

Resource Conservation and Recovery Act (RCRA 40 CFR 261) Subpart C & D: Refer to Section 13

Federal Water Pollution Control Act, Clean Water Act, 40 CFR 401.15 (formerly section 307) 40 CFR 116 (formerly section 311): This product contains no chemicals which are listed

California Proposition 65: **--- None of the chemicals are on the Proposition 65 list---**

In accordance with current California Air Resources Board (CARB) regulations regarding VOC content, this item is exempt based on its usage & product labeling.

STATE REGULATIONS:

This SDS contains specific health and safety data is applicable for state requirements. For details on your regulatory requirements you should contact the appropriate agency in your state.

California Proposition 65: Chemicals in this product are not on the list.

Chemical Name	New Jersey	Massachusetts	Pennsylvania
1,1,1,2 Tetrafluoroethane		X	X

INTERNATIONAL REGULATIONS:

Canada WHMIS: Class A –Compressed Gas

15.1 Safety, health and environmental regulations / legislation specific for the substance or mixture

EUROPEAN UNION: European Union: Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work.

SDS complies with Regulation (EU) No. 2015/830 [CLP/GHS]

Regulation (EC) No 1005/2009 Ozone-depleting substances (ODS): Not chemicals listed.

Regulation (EC) No 649/2012, Annex 1, Chemicals subject to PIC: No chemicals listed

Regulation (EC) No 850/2004, Annex 1: No persistent organic pollutants present.

Directive 96/82/EC Seveso III, Annex 1:

Part 1- This product is not categorized as a dangerous substance.

Part 2- No chemicals listed.

REACH Directive EC1907/2006 Annex II and GHS requirements: To the best of our ability, this SDS is written in accordance to the requirements. This product is not subject to REACH restrictions. It does not contain substances that are candidates on the SvHC.

15.2 Chemical Safety Assessment: No chemical safety assessment has been carried out

Sections 16	OTHER INFORMATION
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HMIS HAZARD RATING:

Health: Irritation or minor reversible injury possible.

1	HEALTH
0	FLAMMABILITY
1	PHYSICAL HAZARD
B	PROTECTIVE EQUIPMENT

Flammability: Materials that must be preheated before ignition will occur. Includes liquids, solids and semi solids having a flash point above 200 °F (93 °C)

Physical Hazard: Materials which are normally stable, but can become unstable at high temperatures and pressures

Protective Equipment: Consult your supervisor and read the SDS, use safety glasses and gloves.

NFPA HEALTH HAZARD

Health: Exposure could cause irritation but only minor residual injury even if no treatment is given.

Flammability: Materials that will not burn.

Reactivity: Normally stable, but can become unstable at elevated temperatures and pressures or may react with water with some release of energy, but not violently.

Special Hazards: None



REVISION DATES, SECTIONS, REVISED BY:

19-Aug-13	Original Preparer: Steve Allen
09-OCT-13	Review, mkb
10-Jan-14	Changed name and part#, mkb
05-May-20	Updated all sections, mkb

ABBREVIATIONS USED IN THIS DOCUMENT:

NE – Not Established, NA – Not Applicable, NIF – No Information Found, ND – Not Determined

ABRIDGED LIST OF REFERENCES:

Code of Federal Regulations (CFR)
The Sigma-Aldrich Library of Regulatory and Safety Data
Chemical Guide and OSHA Hazardous Communication Standard
The Environmental Protection Agency (www.epa.gov)
http://oehha.ca.gov/prop65/prop65_list
<http://orise.orau.gov/emi/hazards-assessment/files/resources/epa-title3.pdf>

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