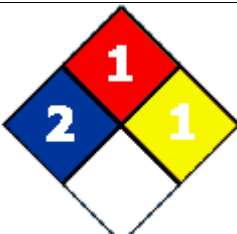




Material Safety Data Sheet

NFPA	HMIS	PPE	Transport Symbol						
	<table border="1"> <tr> <td>Health Hazard</td> <td>2*</td> </tr> <tr> <td>Fire Hazard</td> <td>1</td> </tr> <tr> <td>Reactivity</td> <td>1</td> </tr> </table>	Health Hazard	2*	Fire Hazard	1	Reactivity	1		
Health Hazard	2*								
Fire Hazard	1								
Reactivity	1								

Issuing Date 27-Feb-2007

Revision Date 03-May-2011

Revision Number 5

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name	Component A for Touch 'n Foam Professional System 15 / 200 / 600 (std) Touch 'n Seal Foam Kit 15 / 110 / 120 / 200 / 600 (std)
Product ID No:	MSDS – A Side Reg
Recommended Use	Insulation
Supplier Address	Convenience Products, Division of Clayton Corp. 866 Horan Drive Fenton, MO 63026-2416 USA TEL: (636) 349-5855
Emergency Telephone Number	Chemtrec 1-800-424-9300 (703) 527-3887 outside US

2. HAZARDS IDENTIFICATION

WARNING!

Emergency Overview

Contents under pressure.
May be harmful if swallowed, inhaled.
May cause allergic skin reaction
May cause allergic respiratory reaction.
Persons allergic to isocyanates, and particularly those suffering from asthma or other respiratory conditions, should not work with isocyanates.
Vapors may be irritating to eyes, nose, throat, and lungs.
May cause drowsiness and dizziness.

Appearance Pale Amber

Physical State Liquid

Odor Faint hydrocarbon

Potential Health Effects

Principle Routes of Exposure

Inhalation, Skin contact, Eye contact.

Acute Toxicity

Eyes

Irritating to eyes. May cause slight temporary corneal injury due to adhesive character.

Skin

Prolonged or repeated exposure may cause slight skin irritation. Material will stick to skin causing irritation upon removal. Animal studies have shown that skin contact with isocyanates may play a role in causing respiratory sensitization. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons.

Skin Absorption

A single prolonged exposure is unlikely to result in the material being absorbed in harmful amounts.

Inhalation	Maintain local exhaust ventilation system during use. If large concentrations of vapors build up they could cause upper respiratory tract and lung irritation. May cause allergic respiratory reaction. Inhalation of vapors in high concentration may cause shortness of breath (lung edema).
Ingestion	May be harmful if swallowed. May cause additional affects as listed under "Inhalation". Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Product may cure in the gastrointestinal tract and form an obstruction. May cause adverse cardiac effects, blood disturbances, and metabolic acidosis.
Chronic Effects	Tissue injury in the upper respiratory tract and lungs has been observed in laboratory animals after repeated excessive exposures to MDI / Polymeric MDI aerosols. Intentional misuse by deliberately concentrating and inhaling contents may be harmful or fatal. Repeated or prolonged contact causes sensitization, asthma and eczemas.
Aggravated Medical Conditions	Allergies. Skin disorders. Respiratory disorders. Central nervous system. Preexisting eye disorders. Kidney disorders. Liver disorders.
Aggravated Medical Conditions	Allergies. Skin disorders. Respiratory disorders. Preexisting eye disorders. Kidney disorders. Liver disorders.
Interactions with Other Chemicals	Irritants. Sensitizers. Epoxies. Use of alcoholic beverages may enhance toxic effects.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS-No	Weight %
1,1,1,2 – Tetrafluoroethane (HFC-134a, Fluorocarbon)	811-97-2	7-14
Polymethylene polyphenylene isocyanate	9016-87-9	30-60
Methylene bisphenyl isocyanate (MDI)	101-68-8	30-60
Methylenediphenyl diisocyanate	26447-40-5	5-10

4. FIRST AID MEASURES

General Advice	If emergency warrants call 911 or emergency medical service. Show this safety data sheet to the doctor in attendance. Remove and wash soiled clothing before reuse.
Eye Contact	Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Keep eye wide open while rinsing. Obtain medical attention, preferably from an ophthalmologist.
Skin Contact	Remove contaminated clothing; wash before reuse. Foam will stick to skin; studies demonstrate that cleaning very soon after exposure with corn oil or nail polish remover is most effective. If foam dries on skin, apply generous amounts of petroleum jelly or lanolin, put on plastic gloves and wait 1 hour. With a clean cloth, firmly wipe off petroleum jelly and repeat process if necessary. Do not attempt to remove dried foam with solvents.
Inhalation	Move victim to fresh air. Apply artificial respiration if victim is not breathing. If breathing is difficult, oxygen should be administered by qualified personnel. Call a physician or transport to a medical facility.
Ingestion	Call a physician or Poison Control Center immediately. May produce an allergic reaction. Do not induce vomiting unless directed to do so by medical personnel. Drink plenty of water. Never give anything by mouth to an unconscious person.

Notes to Physician	Maintain adequate ventilation and oxygenation of the patient. May cause asthma-like (reactive airways) symptoms. May cause respiratory sensitization or asthma-like symptoms. Respiratory symptoms, including pulmonary edema, may be delayed. Exposure may increase "myocardial irritability". No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.
Protection of First-aiders	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. FIRE-FIGHTING MEASURES

Flammable Properties	Foam cylinders exposed to fire can rupture.
Flash Point	None
Suitable Extinguishing Media	Isolate fire and deny unnecessary entry. Use an extinguishing agent suitable for type of surrounding fire. Dry chemical, CO ₂ , water spray, fog or regular foam. Stay upwind. Keep out of low areas where gases fumes can accumulate. Move containers from fire area if you can do it without risk. Damaged cylinders should be handled only by specialists.
Unsuitable Extinguishing Media	Do not scatter spilled material with high pressure water streams.
Explosion Data	
Sensitivity to mechanical impact	None
Sensitivity to static discharge	None

Specific Hazards Arising from the Chemical
 Ruptured cylinders may rocket.

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.

NFPA	Health Hazard 2	Flammability 1	Stability 1	Physical and Chemical Hazards -
HMIS	Health Hazard 2*	Flammability 1	Stability 1	Personal Precautions -B

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions	Do not touch or walk through spilled material. Use appropriate safety equipment. Evacuate area. Keep personnel out of low areas, confined or poorly ventilated areas. Keep upwind of spill. Ensure adequate ventilation. No smoking in area. Only trained and properly protected personnel must be involved in clean-up operations.
Methods for Containment	If possible, turn leaking containers so that gas escapes rather than liquid. Allow substance to evaporate. Contain spilled materials if possible without risk. Absorb with materials such as Sawdust, dirt, and vermiculite. Collect in suitable and properly labeled open containers. Do not place in sealed containers. Wash what is left of the spill site with large quantities water.
Methods for Cleaning Up	Soak up with inert absorbent material. Sweep up and shovel into suitable containers for disposal. Do not direct water at spill or source of leak.
Other Information	Ventilate the area. Curing foam gives off HFC-134a. Do not put curing foam in a sealed drum.

7. HANDLING AND STORAGE

Handling Avoid contact with skin, eyes and clothing. Wear personal protective equipment. Remove and wash contaminated clothing before re-use. Do not breathe vapors or spray mist. Do not eat, drink or smoke when using this product. Use only in area provided with appropriate exhaust ventilation. Avoid breathing vapors or mists. Contents under pressure. Do not puncture or incinerate cylinders. Container, even those that have been emptied, can contain vapors. Do not stick pin or any other sharp object into opening on top of cylinder.

Storage Keep containers tightly closed in a cool, well-ventilated place. Keep in properly labeled containers. Keep in an area equipped with sprinklers. Keep out of the reach of children. Ideal storage temperature is 16-32 °C / 60 – 90 °F. Storage above 32 °C / 90 °F will reduce its shelf-life. Never keep at temperatures above 48.8 °C / 120 °F.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Methylene bisphenyl isocyanate (MDI)	TWA: 0.005 ppm	Ceiling: 0.02 ppm Ceiling: 0.2 mg/m ³	75 mg/m ³

NIOSH IDLH: Immediately Dangerous to Life or Health

Engineering Measures Showers
Eyewash stations
Ventilation systems

Personal Protective Equipment
Eye/Face Protection Tightly fitting safety glasses with side-shields.

Skin and Body protection Lightweight protective clothing. Impervious gloves.

Respiratory Protection Atmospheric levels of PMDI should be maintained below the exposure guidelines. If exposure limits are exceeded or irritation is experienced, use a NIOSH/MSHA approved air-purifying respirator equipped with an organic vapor absorbent and a particle filter. For situations where the atmospheric levels exceed the level for which an air-purifying respirator is effective, use a positive-pressure air-supplied respirator. Respiratory protection must be provided in accordance with current local regulations.

Hygiene Measures When using, do not eat, drink or smoke. Maintain regular cleaning of equipment, work area and clothing.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Pale Amber	Odor	Faint hydrocarbon
Odor Threshold	No information available	Physical State	Liquid (Frothable)
pH	No information available		
Flash Point	None	Autoignition Temperature	Not applicable
Decomposition temperature	No data available	Boiling Point/Range	-26°C / -15°F for HFC-134a
Melting Point/Range	No data available		
Flammability Limits in Air	No data available	Explosion Limits	No data available
Specific Gravity	1.2	Water Solubility	Not Compatible
Solubility	No data available	Evaporation Rate	No data available
Vapor Pressure	No data available	Vapor Density	No data available
VOC Content	Not applicable	EPA VOC (g/l)	0
Partition Coefficient (n-octanol/water)	No data available		

10. STABILITY AND REACTIVITY

Stability	Stable under recommended storage conditions
Conditions to Avoid	Keep away from open flames, hot surfaces and sources of ignition. Temperatures above 48.8 °C / 120 °F.
Incompatible Products	Water. Alcohols. Strong bases. Strong oxidizing agents. Finely powdered metals.
Hazardous Decomposition Products	Carbon monoxide (CO), Carbon dioxide (CO ₂), Nitrogen oxides (NO _x), Hydrogen cyanide.
Hazardous Polymerization	Hazardous polymerization does not occur.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Sensitization - Skin Skin contact may cause an allergic skin reaction. Animal studies have shown that skin contact with isocyanates may play a role in respiratory sensitization.

Sensitization – Respiratory May cause allergic respiratory response. MDI concentrations below the exposure guidelines may cause allergic respiratory reactions in individuals already sensitized. Asthma-like symptoms may include coughing, difficult breathing and a feeling of tightness in the chest. Occasionally, breathing difficulties may be life threatening.

Product Information

Component Information

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Polymethylene polyphenylene isocyanate	49 g/kg (Rat)	9400 mg/kg (Rabbit)	490 mg/m ³ (Rat) 4 h
Methylene bisphenyl isocyanate (MDI)	9200 mg/kg (Rat)		

Methylenediphenyl diisocyanate	6200 mg/kg (Rabbit)	0.369 mg/L (Rat) 4 h
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Chronic Toxicity

Chronic Toxicity Repeated or prolonged exposure may cause central nervous system damage. Tissue injury in the upper respiratory tract and lungs has been observed in laboratory animals after repeated excessive exposures to MDI/polymeric MDI aerosols. Repeated or prolonged contact causes sensitization, asthma and eczemas. Repeated or prolonged contact may causes sensitization, asthma and eczemas.

Carcinogenicity There are no known carcinogenic chemicals in this product

Mutagenicity Contains no known mutagenetic chemicals

Reproductive Toxicity This product does not contain any known or suspected reproductive hazards

Target Organ Effects Contains component(s) that have been reported to cause effects on the following organs in animals: Kidney, Liver, Bone marrow.

Endocrine Disruptor Information This product does not contain any known or suspected endocrine disruptors

12. ECOLOGICAL INFORMATION

Ecotoxicity

Ecotoxicity effects.

Chemical Name	Toxicity to Algae	Toxicity to Fish	Microtox	Daphnia Magna (Water Flea)
Methylenediphenyl diisocyanate	EC50 = 3230 mg/L 96 h			EC50 > 1000 mg/L 24 h

Chemical Name	Log Pow
1,1,1,2,-Tetrafluoroethane HFC-134a	1.06

13. DISPOSAL CONSIDERATIONS

Waste Disposal Method This material, as supplied, is not a hazardous waste according to Federal regulations (40 CFR 261). Should not be released into the environment. Dispose of in accordance with local regulations. Allow foam to cure before disposal.

Contaminated Packaging Dispose of in accordance with local regulations.

14. TRANSPORT INFORMATION

DOT

UN-No UN1956
Proper Shipping Name Compressed gas, n.o.s. (Fluorinated Hydrocarbon, Nitrogen)
Hazard Class 2.2
ERG Code Guide 126
Description Nonflammable gas (Fluorinated Hydrocarbon, Nitrogen)
 (Foam Kit 15 aerosol UN-No is UN1950 LTD QTY)

TDG

UN-No UN1956
Proper Shipping Name Compressed gas, n.o.s. (Fluorinated Hydrocarbon, Nitrogen)
Hazard Class 2.2
Description Nonflammable gas (Fluorinated Hydrocarbon, Nitrogen)
 (Foam Kit 15 aerosol UN-No is UN1950)

MEX

14. TRANSPORT INFORMATION

UN-No UN1956
Proper Shipping Name Compressed gas, n.o.s. (Fluorinated Hydrocarbon, Nitrogen)
Hazard Class 2.2
Description Nonflammable gas (Fluorinated Hydrocarbon, Nitrogen)
(Foam Kit 15 aerosol UN-No is UN1950)

ICAO

UN-No UN1956
Proper Shipping Name Compressed gas, n.o.s. (Fluorinated Hydrocarbon, Nitrogen)
Hazard Class 2.2
Description Nonflammable gas (Fluorinated Hydrocarbon, Nitrogen)
(Foam Kit 15 aerosol UN-No is UN1950)

IATA

UN-No UN1956
Proper Shipping Name Compressed gas, n.o.s. (Fluorinated Hydrocarbon, Nitrogen)
Hazard Class 2.2
ERG Code 2L
Description Nonflammable gas (Fluorinated Hydrocarbon, Nitrogen)
(Foam Kit 15 aerosol UN-No is UN1950 LTD QTY)

IMDG/IMO

UN-No UN1956
Proper Shipping Name Compressed gas, n.o.s. (Fluorinated Hydrocarbon, Nitrogen)
Hazard Class 2.2
EmS No. F-D, S-U
Description Nonflammable gas, n.o.s. (Fluorinated Hydrocarbon, Nitrogen)
(Foam Kit 15 aerosol UN-No is UN1950 LTD QTY)

RID

UN-No UN1956
Proper Shipping Name Compressed gas, n.o.s. (Fluorinated Hydrocarbon, Nitrogen)
Hazard Class 2
Classification Code 5A
Description Nonflammable gas (Fluorinated Hydrocarbon, Nitrogen)
ADR/RID-Labels 2
(Foam Kit 15 aerosol UN-No is UN1950)

ADR

UN-No UN1956
Proper Shipping Name Compressed gas, n.o.s. (Fluorinated Hydrocarbon, Nitrogen)
Hazard Class 2
Classification Code 5A
ADR/RID-Labels 2
(Foam Kit 15 aerosol UN-No is UN1950)

ADN

UN-No UN1956
Proper Shipping Name Compressed gas, n.o.s. (Fluorinated Hydrocarbon, Nitrogen)
Hazard Class 2
Classification Code 5A
Special Provisions 63, 190, 191, 277, 913
Description Nonflammable gas (Fluorinated Hydrocarbon, Nitrogen)
Hazard Labels 2
(Foam Kit 15 aerosol UN-No is UN1950)

15. REGULATORY INFORMATION

International Inventories

DSL	Complies
EINECS/ELINCS	Complies
ENCS	Complies
CHINA	Complies
KECL	Complies
PICCS	Complies
AICS	Complies

U.S. Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372:

Chemical Name	CAS-No	Weight %	SARA 313 - Threshold Values
Polymethylene polyphenylene isocyanate	9016-87-9	30-60	1.0
Methylene bisphenyl isocyanate (MDI)	101-68-8	30-60	1.0
Methylenediphenyl diisocyanate	26447-40-5	5-10	1.0

SARA 311/312 Hazard Categories

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

Clean Water Act

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).

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302).

Chemical Name	Hazardous Substances RQs	Extremely Hazardous Substances RQs
Methylene bisphenyl isocyanate (MDI)	5000 lb	

U.S. State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

Chemical Name	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Methylene bisphenyl isocyanate (MDI)	X	X	X	X	X
Chlorodifluoromethane	X	X	X		X

International Regulations

Mexico - Grade

The exposure limits values for 101-68-8 are listed under two synonyms:
 Diphenylmethane diisocyanate - 0.02 ppm TWA; 0.2 mg/m³ TWA
 Methylene bisphenyl isocyanate - 0.005 ppm TWA; 0.051 mg/m³ TWA

Chemical Name	Carcinogen Status	Exposure Limits
Methylene bisphenyl isocyanate (MDI)		Mexico: TWA= 0.2 mg/m ³ Mexico: TWA= 0.02 ppm
Diphenylmethane diisocyanate		Mexico: TWA= 0.005 ppm Mexico: TWA= 0.051 mg/m ³

Canada

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

WHMIS Hazard Class

A Compressed gases
 D2B Toxic materials



Chemical Name	NPRI
Methylene bisphenyl isocyanate (MDI)	X
Polymethylene polyphenylene isocyanate	X
1,1,1,2- Tetrafluoroethane, HFC-134a	X

Legend

- NPRI - National Pollutant Release Inventory
- WHMIS – Workplace Hazardous Materials Information System
- TSCA – Toxic Substance Control Act
- DSL – Domestic Substance List
- EINECS – European Inventory of Existing Commercial Chemical Substances
- ENCS – Japan, Existing and New Chemical Substances
- KECL- Korean Existing Chemical List
- PICS – Philippine Inventory of Chemicals and Chemical Substances
- AICS – Australian Inventory of Chemical Substances
- TDG – Transportation of Dangerous Goods Act
- ICAO – International Civil Aviation Organization
- IATA – International Maritime Dangerous Goods Code
- IMDG – International Maritime Dangerous Goods Code

16. OTHER INFORMATION




Issuing Date 27-Feb-2007
Revision Date 03-May-2011
Revision Note Revised format. Revised by Clayton Corporation EHS Department

Disclaimer

The information provided on this MSDS is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

End of MSDS

Material Safety Data Sheet

NFPA	HMIS	PPE	Transport Symbol						
	<table border="1"> <tr> <td>Health Hazard</td> <td>1</td> </tr> <tr> <td>Fire Hazard</td> <td>1</td> </tr> <tr> <td>Reactivity</td> <td>0</td> </tr> </table>	Health Hazard	1	Fire Hazard	1	Reactivity	0		
Health Hazard	1								
Fire Hazard	1								
Reactivity	0								

Issuing Date 27-Feb-2007

Revision Date 10-May-2011

Revision Number 5

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name	Component B for Touch 'n Foam Professional Foam Kit 15 / 200 / 600 (std) Touch 'n Seal Foam Kit 15 / 110 / 120 / 200 / 600 (std)
Recommended Use	Insulation
Product ID No:	MSDS / B Side Reg
Supplier Address	Convenience Products, division of Clayton Corp. 866 Horan Drive Fenton, MO 63026-2416 USA TEL: (636) 349-5855
Emergency Telephone Number	Chemtrec 1-800-424-9300 (703) 527-3887 outside US

2. HAZARDS IDENTIFICATION

Emergency Overview

Contents under pressure.
May cause drowsiness and dizziness.

Appearance Pale Amber

Physical State Liquid

Odor Faint hydrocarbon

Potential Health Effects

Principle Routes of Exposure Inhalation, Skin contact, Eye contact.

Acute Toxicity

Eyes May cause slight irritation. Avoid contact with eyes.

Skin May cause skin irritation and/or dermatitis. Avoid contact with skin and clothing.

Skin Absorption A single prolonged exposure is unlikely to result in the material being absorbed in harmful amounts.

Inhalation Maintain local exhaust ventilation system during use. If large concentrations of vapors build up they could cause upper respiratory tract and lung irritation. Inhalation of vapors in high concentration may cause shortness of breath (lung edema). Avoid breathing vapors or mists.

Ingestion Not an expected route of exposure. No known effect based on information supplied.

Birth / Developmental Effects: No known effect based on information supplied

Chronic Effects No known effect based on information supplied

Aggravated Medical Conditions Central nervous system.

Interactions with Other Chemicals Oxidizing agents. Strong acids. Strong Bases.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS-No	Weight %
1,1,1,2 – Tetrafluoroethane (HFC-134a, Fluorocarbon)	811-97-2	10-30
Proprietary Polyol Blend	Proprietary mixture	60-90

4. FIRST AID MEASURES

General Advice	If emergency warrants call 911 or emergency medical service. Show this safety data sheet to the doctor in attendance. Remove and wash soiled clothing before reuse.
Eye Contact	Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Keep eye wide open while rinsing. Obtain medical attention, preferably from an ophthalmologist.
Skin Contact	Wash off immediately with plenty of water for at least 15 minutes. Remove soiled clothing; wash before reuse.
Inhalation	Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, oxygen should be administered by qualified personnel. Call a physician or transport to a medical facility.
Ingestion	Clean mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Drink plenty of water. Never give anything by mouth to an unconscious person.
Notes to Physician	Maintain adequate ventilation and oxygenation of the patient. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.
Protection of First-aiders	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. FIRE-FIGHTING MEASURES

Flammable Properties	Pressurized cylinders exposed to fire can rupture.
Flash Point	None
Suitable Extinguishing Media	Isolate fire and deny unnecessary entry. Use an extinguishing agent suitable for type of surrounding fire. Dry chemical, CO ₂ , water spray, fog or regular foam. Stay upwind. Keep out of low areas where gases fumes can accumulate. Move containers from fire area if you can do it without risk. Damaged cylinders should be handled only by specialists.
Unsuitable Extinguishing Media	Do not scatter spilled material with high pressure water streams.
Explosion Data	
Sensitivity to mechanical impact	None
Sensitivity to static discharge	None
Specific Hazards Arising from the Chemical	Ruptured cylinders may rocket.
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.

NFPA	Health Hazard 1	Flammability 1	Stability 0	Physical and Chemical Hazards -
HMIS	Health Hazard 1	Flammability 1	Stability 0	Personal Precautions -B

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions	Do not touch or walk through spilled material. Use appropriate safety equipment. Evacuate area. Keep personnel out of low areas, confined or poorly ventilated areas. Keep upwind of spill. Ensure adequate ventilation. No smoking in area. Only trained and properly protected personnel must be involved in clean-up operations.
Methods for Containment	If possible, turn leaking containers so that gas escapes rather than liquid. Allow substance to evaporate. Contain spilled materials if possible without risk. Absorb with materials such as Sawdust, dirt, and vermiculite. Collect in suitable and properly labeled open containers. Do not place in sealed containers. Wash what is left of the spill site with large quantities water.
Methods for Cleaning Up	Soak up with inert absorbent material (sand, silica sawdust). Sweep up and shovel into suitable containers for disposal. Do not direct water at spill or source of leak.

7. HANDLING AND STORAGE

Handling	Avoid contact with skin, eyes and clothing. Wear personal protective equipment. Remove and wash soiled clothing before re-use. Do not breathe vapors or spray mist. Do not eat, drink or smoke when using this product. Use only in area provided with appropriate exhaust ventilation. Contents under pressure. Do not puncture or incinerate cylinders. Container, even those that have been emptied, can contain vapors. Do not stick any other sharp object into opening on top of cylinder.
Storage	Keep containers tightly closed in a cool, well-ventilated place. Keep in properly labeled containers. Keep in an area equipped with sprinklers. Keep out of the reach of children. Ideal storage temperature is 16-32 °C / 60 – 90 °F. Storage above 32 °C / 90 °F will reduce its shelf-life. Never keep at temperatures above 48.8 °C / 120 °F. Protect the container from physical abuse.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
1,1,1,2 – Tetrafluoroethane (HFC-134a, Fluorocarbon)	None-established	None-established	None-established

NIOSH IDLH: Immediately Dangerous to Life or Health

Engineering Measures	Showers Eyewash stations Ventilation systems
Personal Protective Equipment	
Eye/Face Protection	Tightly fitting safety glasses with side-shields.
Skin and Body protection	Lightweight protective clothing. Impervious gloves.
Respiratory Protection	No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.
Hygiene Measures	When using, do not eat, drink or smoke. Maintain regular cleaning of equipment, work area and clothing.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Pale Amber	Odor	Faint hydrocarbon
Odor Threshold	No information available	Physical State	Liquid (Frothable)
pH	No information available		
Flash Point	None	Autoignition Temperature	Not applicable
Decomposition temperature	No data available	Boiling Point/Range	-42°C / -44°F
Melting Point/Range	No data available		
Flammability Limits in Air	No data available	Explosion Limits	No data available
Specific Gravity	1.1	Water Solubility	Not Compatible
Solubility	No data available	Evaporation Rate	No data available
Vapor Pressure	No data available	Vapor Density	No data available
VOC Content	Not applicable	EPA VOC (g/l)	0
Partition Coefficient (n-octanol/water)	No data available		

10. STABILITY AND REACTIVITY

Stability	Stable under recommended storage conditions
Conditions to Avoid	Keep away from open flames, hot surfaces and sources of ignition. Temperatures above 48.8 °C / 120 °F.
Incompatible Products	Oxidizing agents. Strong acids. Strong bases.
Hazardous Decomposition Products	Thermal decomposition can lead to release of irritating gases and vapors, Carbon monoxide (CO), Carbon dioxide (CO ₂).
Hazardous Polymerization	Hazardous polymerization does not occur.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Product Information No acute toxicity information is available for this product.

Component Information

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
1,1,1,2 – Tetrafluoroethane (HFC-134a, Fluorocarbon)	Non-established	Non-established	Non-established

Chronic Toxicity No Chronic toxicity information is available for this product

Carcinogenicity There are no known carcinogenic chemicals in this product

Mutagenicity No known mutagens

Reproductive Toxicity This product does not contain any known or suspected reproductive hazards

Target Organ Effects Contains component(s) that have been reported to cause effects on the following organs in animals: (CNS) Kidney, Liver.

Endocrine Disruptor Information This product does not contain any known or suspected endocrine disruptors

12. ECOLOGICAL INFORMATION

Ecotoxicity

Ecotoxicity effects.

Chemical Name	Toxicity to Algae	Toxicity to Fish	Microtox	Daphnia Magna (Water Flea)
1,1,1,2 – Tetrafluoroethane (HFC-134a, Fluorocarbon)	None-established			None-established

Chemical Name	Log Pow
1,1,1,2,-Tetrafluoroethane HFC-134a	1.06

13. DISPOSAL CONSIDERATIONS

Waste Disposal Method This material, as supplied, is not a hazardous waste according to Federal regulations (40 CFR 261). Should not be released into the environment. Dispose of in accordance with local regulations.

Contaminated Packaging Dispose of in accordance with local regulations.

14. TRANSPORT INFORMATION

DOT

UN-No UN1956
Proper Shipping Name Compressed gas, n.o.s. (Fluorinated Hydrocarbon, Nitrogen)
Hazard Class 2.2
ERG Code Guide 126
Description Nonflammable gas, (Fluorinated Hydrocarbon, Nitrogen) (Foam Kit 15 aerosol UN-No is UN1950 LTD QTY)

TDG

UN-No UN1956
Proper Shipping Name Compressed gas, n.o.s. (Fluorinated Hydrocarbon, Nitrogen)
Hazard Class 2.2
Description Nonflammable gas, (Fluorinated Hydrocarbon, Nitrogen) (Foam Kit 15 aerosol UN-No is UN1950)

MEX

UN-No UN1956
Proper Shipping Name Compressed gas, n.o.s. (Fluorinated Hydrocarbon, Nitrogen)
Hazard Class 2.2
Description Nonflammable gas, (Fluorinated Hydrocarbon, Nitrogen) (Foam Kit 15 aerosol UN-No is UN1950)

ICAO

UN-No UN1956
Proper Shipping Name Compressed gas, n.o.s. (Fluorinated Hydrocarbon, Nitrogen)
Hazard Class 2.2
Description Nonflammable gas, (Fluorinated Hydrocarbon, Nitrogen) (Foam Kit 15 aerosol UN-No is UN1950)

14. TRANSPORT INFORMATION

IATA

UN-No	UN1956
Proper Shipping Name	Compressed gas, n.o.s. (Fluorinated Hydrocarbon, Nitrogen)
Hazard Class	2.2
ERG Code	2L
Description	Nonflammable gas, (Fluorinated Hydrocarbon, Nitrogen) (Foam Kit 15 aerosol UN-No is UN1950 LTD QTY)

IMDG/IMO

UN-No	UN 1956
Proper Shipping Name	Compressed gas, n.o.s. (Fluorinated Hydrocarbon, Nitrogen)
Hazard Class	2.2
EmS No.	F-D, S-U
Description	Nonflammable gas, (Fluorinated Hydrocarbon, Nitrogen) (Foam Kit 15 aerosol UN-No is UN1950 LTD QTY)

RID

UN-No	UN 1956
Proper Shipping Name	Compressed gas, n.o.s. (Fluorinated Hydrocarbon, Nitrogen)
Hazard Class	2
Classification Code	5A
Description	Nonflammable gas, (Fluorinated Hydrocarbon, Nitrogen)
ADR/RID-Labels	2 (Foam Kit 15 aerosol UN-No is UN1950)

ADR

UN-No	UN1956
Proper Shipping Name	Compressed gas, n.o.s. (Fluorinated Hydrocarbon, Nitrogen)
Hazard Class	2
Classification Code	5A
ADR/RID-Labels	2 (Foam Kit 15 aerosol UN-No is UN1950)

ADN

UN-No	UN1956
Proper Shipping Name	Compressed gas, n.o.s. (Fluorinated Hydrocarbon, Nitrogen)
Hazard Class	2
Classification Code	5A
Special Provisions	63, 190, 191, 277, 913
Description	Nonflammable gas (Fluorinated Hydrocarbon, Nitrogen)
Hazard Labels	2 (Foam Kit 15 aerosol UN-No is UN1950)

15. REGULATORY INFORMATION

International Inventories

DSL	Complies
EINECS/ELINCS	Complies
ENCS	Complies
CHINA	Complies
KECL	Complies
PICCS	Complies
AICS	Complies

U.S. Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372:

Chemical Name	CAS-No	Weight %	SARA 313 - Threshold Values
1,1,1,2 - Tetrafluoroethane (HFC-134a, Fluorocarbon)	811-97-2	10-30	1.0

SARA 311/312 Hazard Categories

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

Clean Water Act

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).

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302).

U.S. State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

Chemical Name	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
1,1,1,2 – Tetrafluoroethane (HFC-134a, Fluorocarbon)		X	X		X

International Regulations

Canada

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

WHMIS Hazard Class

A Compressed gases



Chemical Name	NPRI
1,1,1,2- Tetrafluoroethane, HFC-134a	X

Legend

NPRI - National Pollutant Release Inventory
WHMIS – Workplace Hazardous Materials Information System
TSCA – Toxic Substance Control Act
DSL – Domestic Substance List
EINECS – European Inventory of Existing Commercial Chemical Substances
ENCS – Japan, Existing and New Chemical Substances
KECL- Korean Existing Chemical List
PICS – Philippine Inventory of Chemicals and Chemical Substances
AICS – Australian Inventory of Chemical Substances
TDG – Transportation of Dangerous Goods Act
ICAO – International Civil Aviation Organization
IATA – International Maritime Dangerous Goods Code
IMDG – International Maritime Dangerous Goods Code
IECS - Inventory of Existing Chemical Substances (China)
NZ CLSC – New Zealand Interim Inventory of Chemicals.

16. OTHER INFORMATION

Issuing Date	27-Feb-2007
Revision Date	10-May-2011
Revision Note	Revised DOT section

Disclaimer

The information provided on this MSDS is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

End of MSDS