



Safety Data Sheet

acc. to 29 CFR 1910.1200 App D

Sub-Zero Auto A/C Recharge High Mileage Refrigerant R-134a

Version number: 7.1
Replaces version of: 2022-07-13 (6)

Revision: 2023-09-11

SECTION 1: Identification

1.1 Product identifier

Trade name **Sub-Zero Auto A/C Recharge High Mileage Refrigerant R-134a**
Alternative number(s) 048168051434, 048168450244

1.2 Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses General use

1.3 Details of the supplier of the safety data sheet

Energizer Manufacturing, Inc.
25225 Detroit Rd.
Westlake OH 44145
United States

Telephone: 800-383-7323; 314-985-2000 (USA / CANADA)
e-mail: Autocare.regulatory@energizer.com
Website: <http://data.energizer.com>

Energizer Trading Ltd.
Sword House, Totteridge Road, High Wycombe, HP13 6DG, UK

Telephone: +44(0)8000353376
e-mail: ConsumerServiceEU@energizer.com

1.4 Emergency telephone number

Emergency information service FOR EMERGENCY in USA & Canada CALL +1 800 255-3924 / For International CALL +1 813 248 0585
This number is only available during the following office hours: Mon-Fri 09:00 AM - 05:00 PM

SECTION 2: Hazard(s) identification

2.1 Classification of the substance or mixture

Classification acc. to OSHA "Hazard Communication Standard" (29 CFR 1910.1200)

Section	Hazard class	Category	Hazard class and category	Hazard statement
B.5	gases under pressure	C	Press. Gas C	H280

For full text of abbreviations: see SECTION 16.

The most important adverse physicochemical, human health and environmental effects

Contains gas under pressure; may explode if heated.

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2.2 Label elements

Labelling acc. to OSHA "Hazard Communication Standard" (29 CFR 1910.1200)

- Signal word warning

- Pictograms

GHS04



- Hazard statements

H280 Contains gas under pressure; may explode if heated.

- Precautionary statements

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.
P410+P403 Protect from sunlight. Store in a well-ventilated place.

2.3 Other hazards

Hazards not otherwise classified

Harmful to aquatic life with long lasting effects (GHS category 3: aquatic toxicity - acute and/or chronic).
Causes mild skin irritation (GHS category 3: irritant to skin).

Results of PBT and vPvB assessment

Does not contain a PBT-/vPvB-substance in a concentration of $\geq 0.1\%$.

Endocrine disrupting properties

Does not contain an endocrine disruptor (EDC) in a concentration of $\geq 0.1\%$.


SECTION 3: Composition/information on ingredients

3.1 Substances

Not relevant (mixture)

3.2 Mixtures

Description of the mixture

Name of substance	Identifier	Wt%	Classification acc. to GHS	Pictograms
R-134a	CAS No 811-97-2	≥ 90	Press. Gas C / H280	

For full text of abbreviations: see SECTION 16.



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Legend: Press. Gas
Press. Gas C: Gas under pressure: compressed gas
Press. Gas L: Gas under pressure: liquefied gas
Press. Gas R: Gas under pressure: refrigerated liquefied gas
Press. Gas D: Gas under pressure: dissolved gas.

SECTION 4: First-aid measures

4.1 Description of first-aid measures

General notes

Do not leave affected person unattended. Remove victim out of the danger area. Keep affected person warm, still and covered. Take off immediately all contaminated clothing. In all cases of doubt, or when symptoms persist, seek medical advice. In case of unconsciousness place person in the recovery position. Never give anything by mouth.

Following inhalation

If breathing is irregular or stopped, immediately seek medical assistance and start first aid actions. Provide fresh air.

Following skin contact

Thaw frosted parts with lukewarm water. Do not rub affected area.

Following eye contact

Remove contact lenses, if present and easy to do. Continue rinsing. Irrigate copiously with clean, fresh water for at least 10 minutes, holding the eyelids apart.

Following ingestion

Rinse mouth with water (only if the person is conscious). Do NOT induce vomiting.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms and effects are not known to date.

4.3 Indication of any immediate medical attention and special treatment needed

none

SECTION 5: Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media

Water spray, BC-powder

Unsuitable extinguishing media

Water jet

5.2 Special hazards arising from the substance or mixture

Contact with the product can cause burns and/or frostbite. Contains gas under pressure; may explode if heated.

Hazardous combustion products

Carbon monoxide (CO), Carbon dioxide (CO₂)



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5.3 Advice for firefighters

In case of fire and/or explosion do not breathe fumes. Coordinate firefighting measures to the fire surroundings. Do not allow firefighting water to enter drains or water courses. Collect contaminated firefighting water separately. Fight fire with normal precautions from a reasonable distance.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Remove persons to safety.

For emergency responders

Wear breathing apparatus if exposed to vapors/dust/aerosols/gases.

6.2 Environmental precautions

Keep away from drains, surface and ground water. Retain contaminated washing water and dispose of it. If substance has entered a water course or sewer, inform the responsible authority.

6.3 Methods and material for containment and cleaning up

Advice on how to contain a spill

Covering of drains

Other information relating to spills and releases

Place in appropriate containers for disposal. Ventilate affected area.

6.4 Reference to other sections

Hazardous combustion products: see section 5. Personal protective equipment: see section 8. Incompatible materials: see section 10. Disposal considerations: see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Recommendations

- Measures to prevent fire as well as aerosol and dust generation

Use local and general ventilation. Use only in well-ventilated areas.

Advice on general occupational hygiene

Wash hands after use. Do not eat, drink and smoke in work areas. Remove contaminated clothing and protective equipment before entering eating areas. Never keep food or drink in the vicinity of chemicals. Never place chemicals in containers that are normally used for food or drink. Keep away from food, drink and animal feedingstuffs.

7.2 Conditions for safe storage, including any incompatibilities

Level 1 Aerosol.



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Managing of associated risks

- Flammability hazards

Protect from sunlight.

- Packaging compatibilities

Only packagings which are approved (e.g. acc. to the Dangerous Goods Regulations) may be used.

7.3 Specific end use(s)

See section 16 for a general overview.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limit values (Workplace Exposure Limits)
this information is not available

Relevant DNELs of components of the mixture

Name of substance	CAS No	End-point	Threshold level	Protection goal, route of exposure	Used in	Exposure time
R-134a	811-97-2	DNEL	13,936 mg/m ³	human, inhalatory	worker (industry)	chronic - systemic effects

Relevant PNECs of components of the mixture

Name of substance	CAS No	End-point	Threshold level	Organism	Environmental compartment	Exposure time
R-134a	811-97-2	PNEC	0.1 mg/l	aquatic organisms	freshwater	short-term (single instance)
R-134a	811-97-2	PNEC	0.01 mg/l	aquatic organisms	marine water	short-term (single instance)
R-134a	811-97-2	PNEC	73 mg/l	aquatic organisms	sewage treatment plant (STP)	short-term (single instance)
R-134a	811-97-2	PNEC	0.75 mg/kg	aquatic organisms	freshwater sediment	short-term (single instance)

8.2 Exposure controls

Appropriate engineering controls

General ventilation.



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Individual protection measures (personal protective equipment)

Eye/face protection

Wear eye/face protection.

Skin protection

- Hand protection

Wear protective gloves.

- Other protection measures

Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended. Wash hands thoroughly after handling.

Respiratory protection

During spraying wear suitable respiratory equipment.

Environmental exposure controls

Use appropriate container to avoid environmental contamination. Keep away from drains, surface and ground water.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state	aerosol (spray aerosol)
Color	not determined
Particle	not relevant (aerosol)
Odor	characteristic

Other safety parameters

pH (value)	not determined
Melting point/freezing point	not determined
Initial boiling point and boiling range	not determined
Flash point	not determined
Evaporation rate	Not determined
Flammability (solid, gas)	



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Vapor pressure	5.74 bar at 20 °C
Density	not determined
Vapor density	this information is not available
Relative density	Information on this property is not available
Solubility(ies)	not determined

Partition coefficient

- n-octanol/water (log KOW)	this information is not available
Auto-ignition temperature	>743 °C (auto-ignition temperature (liquids and gases))
Viscosity	not relevant (aerosol)
Explosive properties	none
Oxidizing properties	none

9.2 Other information

Propellant content	91.67 %
Temperature class (USA, acc. to NEC 500)	T1 (maximum permissible surface temperature on the equipment: 450°C)

SECTION 10: Stability and reactivity

10.1 Reactivity

Concerning incompatibility: see below "Conditions to avoid" and "Incompatible materials". The mixture contains reactive substance(s). Gas under pressure.

If heated:

Danger of explosion, Gas under pressure, Danger of bursting container

10.2 Chemical stability

See below "Conditions to avoid".

10.3 Possibility of hazardous reactions

No known hazardous reactions.

10.4 Conditions to avoid

There are no specific conditions known which have to be avoided.



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Hints to prevent fire or explosion

Protect from sunlight.

10.5 Incompatible materials

Oxidizers

10.6 Hazardous decomposition products

Reasonably anticipated hazardous decomposition products produced as a result of use, storage, spill and heating are not known. Hazardous combustion products: see section 5.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Test data are not available for the complete mixture.

Classification procedure

The method for classification of the mixture is based on ingredients of the mixture (additivity formula).

Classification acc. to OSHA "Hazard Communication Standard" (29 CFR 1910.1200)

Acute toxicity

Shall not be classified as acutely toxic.

Skin corrosion/irritation

Shall not be classified as corrosive/irritant to skin.

Serious eye damage/eye irritation

Shall not be classified as seriously damaging to the eye or eye irritant.

Respiratory or skin sensitization

Shall not be classified as a respiratory or skin sensitizer.

Germ cell mutagenicity

Shall not be classified as germ cell mutagenic.

Carcinogenicity

Shall not be classified as carcinogenic.

Reproductive toxicity

Shall not be classified as a reproductive toxicant.

Specific target organ toxicity - single exposure

Shall not be classified as a specific target organ toxicant (single exposure).

Specific target organ toxicity - repeated exposure

Shall not be classified as a specific target organ toxicant (repeated exposure).

Aspiration hazard

Shall not be classified as presenting an aspiration hazard.



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SECTION 12: Ecological information

12.1 Toxicity

Harmful to aquatic life with long lasting effects.

Aquatic toxicity (acute) of components of the mixture

Name of substance	CAS No	Endpoint	Value	Species	Exposure time
R-134a	811-97-2	LC50	560 mg/l	fish	24 h
R-134a	811-97-2	EC50	960 mg/l	aquatic invertebrates	24 h

Aquatic toxicity (chronic) of components of the mixture

Name of substance	CAS No	Endpoint	Value	Species	Exposure time
R-134a	811-97-2	EC50	>730 mg/l	microorganisms	6 h

12.2 Persistence and degradability

Data are not available.

12.3 Bioaccumulative potential

Data are not available.

12.4 Mobility in soil

Data are not available.

12.5 Results of PBT and vPvB assessment

According to the results of its assessment, this substance is not a PBT or a vPvB. Does not contain a PBT-/vPvB-substance in a concentration of $\geq 0.1\%$.

12.6 Endocrine disrupting properties

Does not contain an endocrine disruptor (EDC) in a concentration of $\geq 0.1\%$.

12.7 Other adverse effects

Data are not available.



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SECTION 13: Disposal considerations

13.1 Waste treatment methods

Sewage disposal-relevant information

Do not empty into drains. Avoid release to the environment. Refer to special instructions/safety data sheets.

Waste treatment of containers/packages

Only packagings which are approved (e.g. acc. to DOT) may be used. Completely emptied packages can be recycled. Handle contaminated packages in the same way as the substance itself.

Remarks

Please consider the relevant national or regional provisions. Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities.

SECTION 14: Transport information

14.1 UN number

DOT	UN 3159
IMDG-Code	UN 3159
ICAO-TI	UN 3159

14.2 UN proper shipping name

DOT	1,1,1,2-Tetrafluoroethane
IMDG-Code	1,1,1,2-TETRAFLUOROETHANE
ICAO-TI	1,1,1,2-Tetrafluoroethane

14.3 Transport hazard class(es)

DOT	2.2
IMDG-Code	2.2
ICAO-TI	2.2

14.4 Packing group

not assigned

14.5 Environmental hazards

non-environmentally hazardous acc. to the dangerous goods regulations

14.5.1 Additional information

DOT-SP 10232

14.6 Special precautions for user

There is no additional information.

14.7 Transport in bulk according to IMO instruments

The cargo is not intended to be carried in bulk.



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Information for each of the UN Model Regulations

Transport of dangerous goods by road or rail (49 CFR US DOT) - Additional information

Particulars in the shipper's declaration	UN3159, 1,1,1,2-Tetrafluoroethane, 2.2
Reportable quantity (RQ)	15,900,636 lbs (7,218,889 kg) (phosphoric acid)
Danger label(s)	2.2



Special provisions (SP)	T50, DOT-SP 10232
ERG No	126

International Maritime Dangerous Goods Code (IMDG) - Additional information

Particulars in the shipper's declaration	UN3159, 1,1,1,2-TETRAFLUOROETHANE, 2.2
Marine pollutant	-
Danger label(s)	2.2



Special provisions (SP)	-
Excepted quantities (EQ)	E1
Limited quantities (LQ)	120 mL
EmS	F-C, S-V
Stowage category	A

International Civil Aviation Organization (ICAO-IATA/DGR) - Additional information

Particulars in the shipper's declaration	UN3159, 1,1,1,2-Tetrafluoroethane, 2.2
Danger label(s)	2.2



Excepted quantities (EQ)	E1
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SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations specific for the product in question

National regulations (United States)

Toxic Substance Control Act (TSCA)

all ingredients are listed (ACTIVE) or exempt from listing

Superfund Amendment and Reauthorization Act (SARA TITLE III)

- The List of Extremely Hazardous Substances and Their Threshold Planning Quantities (EPCRA Section 302, 304)

none of the ingredients are listed

- Specific Toxic Chemical Listings (EPCRA Section 313)

none of the ingredients are listed

Clean Air Act

none of the ingredients are listed

California Environmental Protection Agency (Cal/EPA): Proposition 65 - Safe Drinking Water and Toxic Enforcement Act of 1987

none of the ingredients are listed

Drug precursors, Chemicals designated within the Controlled Substances Act, 21 U.S.C. § 802, paragraphs 34 (list I) and 35 (list II)

none of the ingredients are listed

Industry or sector specific available guidance(s)

NPCA-HMIS® III

Hazardous Materials Identification System. American Coatings Association.

Category	Rating	Description
Chronic	/	none
Health	0	no significant risk to health
Flammability	1	material that must be preheated before ignition can occur
Physical hazard	0	material that is normally stable, even under fire conditions, and will not react with water, polymerize, decompose, condense, or self-react. Non-explosive
Personal protection	-	

NFPA® 704

National Fire Protection Association: Standard System for the Identification of the Hazards of Materials for Emergency Response (United States).



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Category	Degree of hazard	Description
Flammability	1	material that must be preheated before ignition can occur
Health	3	material that, under emergency conditions, can cause serious or permanent injury
Instability	0	material that is normally stable, even under fire conditions
Special hazard		

National inventories

Country	Inventory	Status
AU	AIIC	all ingredients are listed
CA	DSL	not all ingredients are listed
CA	NDSL	not all ingredients are listed
CN	IECSC	all ingredients are listed
EU	ECSI	not all ingredients are listed
EU	REACH Reg.	not all ingredients are listed
JP	CSCL-ENCS	not all ingredients are listed
JP	ISHA-ENCS	not all ingredients are listed
KR	KECI	all ingredients are listed
MX	INSQ	not all ingredients are listed
NZ	NZIoC	all ingredients are listed
PH	PICCS	not all ingredients are listed
TR	CICR	not all ingredients are listed
TW	TCSI	all ingredients are listed
US	TSCA	all ingredients are listed (ACTIVE)
VN	NCI	all ingredients are listed

Legend

AIIC	Australian Inventory of Industrial Chemicals
CICR	Chemical Inventory and Control Regulation
CSCL-ENCS	List of Existing and New Chemical Substances (CSCL-ENCS)
DSL	Domestic Substances List (DSL)
ECSI	EC Substance Inventory (EINECS, ELINCS, NLP)
IECSC	Inventory of Existing Chemical Substances Produced or Imported in China
INSQ	National Inventory of Chemical Substances
ISHA-ENCS	Inventory of Existing and New Chemical Substances (ISHA-ENCS)
KECI	Korea Existing Chemicals Inventory
NCI	National Chemical Inventory
NDSL	Non-domestic Substances List (NDSL)



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Legend

NZIoC	New Zealand Inventory of Chemicals
PICCS	Philippine Inventory of Chemicals and Chemical Substances (PICCS)
REACH Reg.	REACH registered substances
TCSI	Taiwan Chemical Substance Inventory
TSCA	Toxic Substance Control Act

15.2 Chemical Safety Assessment

Chemical safety assessments for substances in this mixture were not carried out.

SECTION 16: Other information, including date of preparation or last revision

Indication of changes (revised safety data sheet)

Section	Former entry (text/value)	Actual entry (text/value)	Safety-relevant
2.3	Other hazards: of no significance	Other hazards	yes
2.3		Hazards not otherwise classified	yes
2.3		Hazards not otherwise classified: change in the listing (table)	yes
2.3		Results of PBT and vPvB assessment: Does not contain a PBT-/vPvB-substance in a concentration of $\geq 0.1\%$.	yes
2.3		Endocrine disrupting properties: Does not contain an endocrine disruptor (EDC) in a concentration of $\geq 0.1\%$.	yes
3.2		Legend: Press. Gas: Press. Gas C: Gas under pressure: compressed gas Press. Gas L: Gas under pressure: liquefied gas Press. Gas R: Gas under pressure: refrigerated liquefied gas Press. Gas D: Gas under pressure: dissolved gas.	yes
6.2	Environmental precautions: Keep away from drains, surface and ground water. Retain contaminated washing water and dispose of it.	Environmental precautions: Keep away from drains, surface and ground water. Retain contaminated washing water and dispose of it. If substance has entered a water course or sewer, inform the responsible authority.	yes
8.1	Control parameters: This information is not available.	Control parameters: Occupational exposure limit values (Workplace Exposure Limits) this information is not available	yes
12.1	Toxicity: Shall not be classified as hazardous to the aquatic environment.	Toxicity: Harmful to aquatic life with long lasting effects.	yes



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Section	Former entry (text/value)	Actual entry (text/value)	Safety-relevant
12.1		Aquatic toxicity (acute) of components of the mixture: change in the listing (table)	yes
12.1		Aquatic toxicity (chronic) of components of the mixture: change in the listing (table)	yes
12.5	Results of PBT and vPvB assessment: Data are not available.	Results of PBT and vPvB assessment: According to the results of its assessment, this substance is not a PBT or a vPvB. Does not contain a PBT-/vPvB-substance in a concentration of $\geq 0.1\%$.	yes
12.6	Endocrine disrupting properties: None of the ingredients are listed.	Endocrine disrupting properties: Does not contain an endocrine disruptor (EDC) in a concentration of $\geq 0.1\%$.	yes
14.2	DOT: Refrigerant gas R 134a	DOT: 1,1,1,2-Tetrafluoroethane	yes
14.2	ICAO-TI: Refrigerant gas R 134a	ICAO-TI: 1,1,1,2-Tetrafluoroethane	yes
14.7	Particulars in the shipper's declaration: UN3159, Refrigerant gas R 134a, 2.2	Particulars in the shipper's declaration: UN3159, 1,1,1,2-Tetrafluoroethane, 2.2	yes
14.7	Particulars in the shipper's declaration: UN3159, Refrigerant gas R 134a, 2.2	Particulars in the shipper's declaration: UN3159, 1,1,1,2-Tetrafluoroethane, 2.2	yes
15.1	Toxic Substance Control Act (TSCA): all ingredients are listed	Toxic Substance Control Act (TSCA): all ingredients are listed (ACTIVE) or exempt from listing	yes
15.1		National inventories: change in the listing (table)	yes

Abbreviations and acronyms

Abbr.	Descriptions of used abbreviations
49 CFR US DOT	49 CFR U.S. Department of Transportation
CAS	Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)
DGR	Dangerous Goods Regulations (see IATA/DGR)
DNEL	Derived No-Effect Level
DOT	Department of Transportation (USA)
EC50	Effective Concentration 50 %. The EC50 corresponds to the concentration of a tested substance causing 50 % changes in response (e.g. on growth) during a specified time interval



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Abbr.	Descriptions of used abbreviations
EINECS	European Inventory of Existing Commercial Chemical Substances
ELINCS	European List of Notified Chemical Substances
EmS	Emergency Schedule
ERG No	Emergency Response Guidebook - Number
GHS	"Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations
IATA	International Air Transport Association
IATA/DGR	Dangerous Goods Regulations (DGR) for the air transport (IATA)
ICAO	International Civil Aviation Organization
ICAO-TI	Technical instructions for the safe transport of dangerous goods by air
IMDG	International Maritime Dangerous Goods Code
IMDG-Code	International Maritime Dangerous Goods Code
LC50	Lethal Concentration 50%: the LC50 corresponds to the concentration of a tested substance causing 50 % lethality during a specified time interval
NLP	No-Longer Polymer
NPCA-HMIS® III	National Paint and Coatings Association: Hazardous Materials Identification System - HMIS® III, Third Edition
OSHA	Occupational Safety and Health Administration (United States)
PBT	Persistent, Bioaccumulative and Toxic
PNEC	Predicted No-Effect Concentration
Press. Gas	Gas under pressure
Press. Gas C	Compressed gas
Press. Gas D	Dissolved gas
Press. Gas L	Liquefied gas
Press. Gas R	Refrigerated liquefied gas
RTECS	Registry of Toxic Effects of Chemical Substances (database of NIOSH with toxicological information)
vPvB	Very Persistent and very Bioaccumulative

Key literature references and sources for data

OSHA Hazard Communication Standard (HCS), 29 CFR 1910.1200.

Transport of dangerous goods by road or rail (49 CFR US DOT). International Maritime Dangerous Goods Code (IMDG). Dangerous Goods Regulations (DGR) for the air transport (IATA).



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Classification procedure

Physical and chemical properties: The classification is based on tested mixture.

Health hazards, Environmental hazards: The method for classification of the mixture is based on ingredients of the mixture (additivity formula).

List of relevant phrases (code and full text as stated in section 2 and 3)

Code	Text
H280	Contains gas under pressure; may explode if heated.

Disclaimer

This information is based upon the present state of our knowledge. This SDS has been compiled and is solely intended for this product.