SAFETY DATA SHEET

Rearming Kit for Inflatable Life Vests

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier

Product Name	Rearming Kit for Inflatable Life Vests

Other means of identification

Synonyms	Inflatable Life Vest Rearming Kit; PFD Rearming Kit; Inflatable Man-Overboard Rescue System Rearming Kit Revere Kit Part Nos. 10-51101-101; 45-RAKM; 45-RAKA; 45-61116-101; 45-61236-101. Revere Kit Model Nos. 51101; 61026; 61027; 61116; 61236. Revere Life Vest CO2 Cylinder Part Nos. 95-323-024; 95-323-025; 95-323-033; 95-61014-101.

Recommended use of the chemical and restrictions on use

Recommended Use	Components used to rearm, repair, or replace the CO2 inflation system on marine or aviation type inflatable life vests.
Uses advised against	No information available

Details of the supplier of the safety data sheet

Supplier Name	UST Brands
Supplier Address	7720 Philips Highway Jacksonville Florida 32256 USA
Supplier Phone Number	Phone:904-786-0033 Fax:904-786-0890
Supplier Email	sales@ustbrands.com

Emergency telephone number

INFOTRAC USA or Canada: 1-800-535-5053 International: 1-352-323-3500

2. HAZARDS IDENTIFICATION

Classification of the substance or mixture

Hazard Class	Gas Under Pressure
Hazard Category	High Pressure Liquefied Gas

Label elements

Using the Toxicity Data listed in Section 11 and 12 the product is labeled as follows.

WARNING

Hazard Statements:

H280 – Contains gas under pressure; may explode if heated.

[Prevention]:

None listed

[Response]:

None listed

[Storage]:

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

[Disposal]:

None listed

Other hazards which do not result in classification

This material is a simple asphyxiant. May displace or reduce oxygen available for breathing especially in confined spaces.
Contact with gas or liquefied gas will cause burns, severe injury and/or frostbite.
Mixtures containing carbon dioxide can increase respiration and heart rate. (OSHA HCS 2012 / CLP)

Under United States Regulations (29 CFR 1910.1200 - Hazard Communication Standard), this product is considered hazardous. According to Regulation (EC) No. 1272/2008 (CLP) this material is considered hazardous.
This product is not considered dangerous under the European Directive 67/548/EEC.
In Canada, the product mentioned above is considered hazardous under the Workplace Hazardous Materials Information System (WHMIS).

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substances

Chemical Name	Identifiers	Weight %	Classifications	Notes
Carbon Dioxide	CAS: 124-38-9 EC No: 204-696-9	> 99%	Compressed Gas OSHA: Nonflammable Gas	

Mixtures

Product does not meet the criteria of a mixture

4. FIRST AID MEASURES

Description of first aid measures

Inhalation	If a person breathes large amounts of this chemical, move the exposed person to fresh air at once. Administer oxygen if breathing is difficult. If breathing has stopped, perform mouth-to-mouth resuscitation. Keep the affected person warm and at rest. Get medical attention as soon as possible.
Eyes	If eye tissue is frozen, seek medical attention immediately. If tissue is not frozen, immediately and thoroughly flush the eyes with large amounts of water for at least 15 minutes, occasionally lifting the lower and upper eyelids. If irritation, pain, swelling, lacrimation, or photophobia (abnormal visual intolerance to light) persist, get medical attention as soon as possible.
Skin	If frostbite has occurred, seek medical attention immediately; do NOT rub the affected area(s) or flush them with water. In order to prevent further tissue damage, do NOT attempt to remove frozen clothing from frostbitten areas. If frostbite has not occurred, immediately and thoroughly wash contaminated skin with soap and water.
Ingestion	If frostbite has occurred, seek medical attention immediately; do NOT rub the affected area(s) or flush them with water. Never give anything by mouth to an unconscious person. Do NOT induce vomiting.

Most important symptoms and effects, both acute and delayed

Inhalation	Carbon dioxide gas is an asphyxiant with effects due to lack of oxygen. It is also physiologically active, affecting circulation and breathing. Moderate concentrations may cause headache, drowsiness, dizziness, stinging of the nose and throat, excitation, rapid breathing and heart rate, excess salivation, vomiting, and unconsciousness. Lack of oxygen can kill.
Eyes	No harm expected from vapor. Cold gas, or liquid or solid Carbon Dioxide may cause severe frostbite.
Skin	No harm expected from vapor. Cold gas, or liquid or solid Carbon Dioxide may cause severe frostbite.
Ingestion	An unlikely route of exposure. This product is a gas at normal temperature and pressure.
Other	Damage to retinal or ganglion cells and central nervous system may occur.

Indication of any immediate medical attention and special treatment needed

Notes to Physician	All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

Other information

Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.
RESCUERS SHOULD NOT ATTEMPT TO RETRIEVE VICTIMS OF EXPOSURE TO GASES WITHOUT ADEQUATE PERSONAL PROTECTIVE EQUIPMENT.
At a minimum, Self-Contained Breathing Apparatus must be worn. Victim(s) who experience any adverse effect after overexposure to this gas mixture must be taken for medical attention. Rescuers should be taken for medical attention if necessary. Take a copy of the label and the SDS to physician or other health professional with victim(s).

5. FIRE-FIGHTING MEASURES

Extinguishing media

Use extinguishing agent suitable for type of surrounding fire.

Special hazards arising from the substance or mixture

Unusual Fire and Explosion Hazards	Carbon Dioxide cannot catch fire. Heat of fire can build pressure in cylinder and cause it to rupture. Ruptured cylinders may rocket.
Hazardous Combustion Products	No data available

Advice for fire-fighters

Structural firefighters' protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations where direct contact with the substance is possible.
Always wear thermal protective clothing when handling refrigerated/cryogenic liquids.
Wear positive pressure self-contained breathing apparatus (SCBA).
Move containers from fire area if you can do it without risk.
FIRE: If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions.
FIRE INVOLVING TANKS: Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
FIRE INVOLVING TANKS: Cool containers with flooding quantities of water until well after fire is out.
FIRE INVOLVING TANKS: Do not direct water at source of leak or safety devices; icing may occur.
FIRE INVOLVING TANKS: Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
FIRE INVOLVING TANKS: ALWAYS stay away from tanks engulfed in fire.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions	Carbon dioxide is an asphyxiant. Lack of oxygen can kill. Evacuate all personnel from danger area. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Do not touch or walk through spilled material. Ventilate the area before entry.
Emergency Procedures	Stop leak if you can do it without risk. Keep unauthorized personnel away. Keep out of low areas. Stay upwind. Do not direct water at spill or source of leak. LARGE SPILL: Consider initial downwind evacuation for at least 500 meters (1/3 mile)

Environmental precautions

No special environmental precautions necessary.

Methods and material for containment and cleaning up

Stop leak if you can do it without risk.
Do not direct water at spill or source of leak.
Use water spray to reduce vapors; do not put water directly on leak, spill area or inside container.
If possible, turn leaking containers so that gas escapes rather than liquid.
Isolate area until gas has dispersed. Ventilate the area. Test for sufficient oxygen, especially in confined spaces, before allowing reentry.
Discard any product, residue, disposable container or liner in an environmentally acceptable manner, in full compliance with federal, state, and local regulations. If necessary, call your local disposal authority for assistance.

7. HANDLING AND STORAGE

Precautions for safe handling

Use only with adequate ventilation. Ventilate closed spaces before entering. Be aware of any signs of dizziness or fatigue, especially if work is done in a poorly ventilated area; exposures to fatal concentrations of this gas mixture could occur without any significant warning symptoms, due to olfactory fatigue or oxygen deficiency. Cylinders should be firmly secured to prevent falling or being knocked-over. Do not attempt to repair, adjust, or in any other way modify cylinders. If there is a malfunction or another type of operational problem, contact nearest distributor immediately. Empty containers retain product residue and can be hazardous. Do not cut, weld, puncture or incinerate container. Do not modify or erase marks or other items on cylinders. Do not peel off labels on cylinders.

Conditions for safe storage, including any incompatibilities

Keep compressed gas cylinder away from fire and spark sources. Do not store cylinders near electric lines or grounding.
Store cylinders in a dry and well-ventilated area.
Keep cylinders away from corrosive fluid.
Keep cylinders away from direct sunlight at an ambient temperature of 0 to 40°C (32 to 104°F).
Do not expose cylinders to rough handling or falling.
Control oxygen concentration in storage areas at 18% volume or more.

Specific end use(s)

No data available.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

Exposure Limit						
Ingredient	**Result**	**ACGIH**	**Canada Ontario**	**Canada Quebec**	**NIOSH**	**OSHA**
Carbon Dioxide (124-38-9)	STEL	30000 ppm STEL	30000 ppm STEL	30000 ppm STEL; 54000 mg/m3 STEV	30000 ppm STEL; 54000 mg/m3 STEL	Not Established
	TWA	5000 ppm TWA	5000 ppm TWA	5000 ppm TWAEV; 9000 mg/m3 TWAEV	5000 ppm TWA; 9000 mg/m3 TWA	5000 ppm TWA; 9000 mg/m3 TWA

Exposure Controls

Engineering Measures/Controls	Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Personal Protective Equipment

Respiratory	Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or symptoms are experienced.
Eyes / Face	Wear safety glasses.
Skin	Wear leather gloves when handling cylinders.
Environmental Exposure Controls	Follow best practice for site management and disposal of waste. Controls should be engineered to prevent release to the environment, including procedures to prevent spills, atmospheric release and release to waterways.

Key to abbreviations

STEL = Short Term Exposure Limits are based on 15-minute exposures
STEV = Short Term Exposure Value
TWA = Time-Weighted Averages are based on 8h/day, 40h/week exposures
ACGIH = American Conference of Governmental Industrial Hygiene
NIOSH = National Institute of Occupational Safety and Health
OSHA = Occupational Safety and Health Administration

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical description	Colorless, odorless gas; dense vapor
pH	N/A
Melting point / freezing point	-57°C (-71°F) at 4000 mmHg
Initial boiling point and boiling range	-78.4°C (-109.12°F)
Flash Point	N/A
Evaporation rate (Ether = 1)	N/A
Flammability (solid, gas)	Non-flammable gas
Upper/lower flammability or explosive limits	Not Applicable
Vapor pressure (kPa at 20°C)	5720
Vapor Density (air = 1)	1.53
Specific Gravity	1.56
Solubility in Water (ml/100ml at 20°C)	88
Partition coefficient n-octanol/water (Log Kow)	Not Measured
Auto-ignition temperature	Not Measured
Decomposition temperature	N/A
Viscosity (cSt)	N/A

Other information

No other relevant information.

10. STABILITY AND REACTIVITY

Reactivity

No dangerous reaction known under conditions of normal use.

Chemical Stability

Stable under normal temperatures and pressures.

Possibility of hazardous reactions

Hazardous polymerization will not occur.

Conditions to avoid

Excess heat.

Incompatible materials

Dusts of various metals, such as magnesium, zirconium, titanium, aluminum, chromium & manganese are ignitable and explosive when suspended in carbon dioxide. Forms carbonic acid in water.

Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced. Carbon dioxide produces toxic carbon monoxide when heated above 1700°C.

11. TOXICOLOGICAL INFORMATION

Information on toxicological effects

Carbon Dioxide (gas) 124-38-9								
Test Type	**Dosage**	**Route**	**Species**	**Duration**	**Results**	**Test Class**	**Target Organs**	**Comments**
Acute Toxicity	470000 ppm	Inhalation	Rat	30 Minute(s)	LC50	NDA	NDA	NDA
Reproductive	2 pph	Inhalation	Mouse	8 Hour(s)	TCLo	NDA	NDA	NDA
Reproductive	13 pph	Inhalation	Rabbit	4 Hour(s)	TCLo	NDA	NDA	NDA
Reproductive	6 pph	Inhalation	Rat	24 Hour(s)	TCLo	NDA	NDA	NDA

GHS Properties	Classification
Acute toxicity	EU/CLP • Classification criteria not met OSHA HCS 2012 • Classification criteria not met
Aspiration Hazard	EU/CLP • Classification criteria not met OSHA HCS 2012 • Classification criteria not met
Carcinogenicity	EU/CLP • Classification criteria not met OSHA HCS 2012 • Classification criteria not met
Germ Cell Mutagenicity	EU/CLP • Classification criteria not met OSHA HCS 2012 • Classification criteria not met
Skin corrosion/Irritation	EU/CLP • Classification criteria not met OSHA HCS 2012 • Classification criteria not met

Skin sensitization	EU/CLP • Classification criteria not met OSHA HCS 2012 • Classification criteria not met
STOT-RE	EU/CLP • Classification criteria not met OSHA HCS 2012 • Classification criteria not met
STOT-SE	EU/CLP • Classification criteria not met OSHA HCS 2012 • Classification criteria not met
Toxicity for Reproduction	EU/CLP • Classification criteria not met OSHA HCS 2012 • Classification criteria not met
Respiratory sensitization	EU/CLP • Classification criteria not met OSHA HCS 2012 • Classification criteria not met
Serious eye damage/Irritation	EU/CLP • Classification criteria not met OSHA HCS 2012 • Classification criteria not met

Route(s) of entry/exposure Inhalation, Skin, and Eyes

Potential Health Effects

Inhalation

Acute (Immediate) If this material is released in a small, poorly ventilated area (i.e. an enclosed or confined space), an oxygen-deficient environment may occur. Individuals breathing such an atmosphere may experience symptoms which include headaches, ringing in ears, dizziness, drowsiness, unconsciousness, nausea, vomiting, and depression of all the senses. Under some circumstances of over-exposure, death may occur. The following effects associated with decreased levels of oxygen: increase in breathing and pulse rate, emotional upset, abnormal fatigue, nausea, vomiting, collapse, loss of consciousness, convulsive movements, respiratory collapse and death.

Chronic (Delayed) No data available

Skin

Acute (Immediate) Contact with rapidly expanding gas may cause burns or frostbite.

Chronic (Delayed) Under normal conditions of use, no health effects are expected.

Eye

Acute (Immediate) Contact with rapidly expanding gas may cause burns or frostbite.

Chronic (Delayed) Under normal conditions of use, no health effects are expected.

Ingestion

Ingestion is not anticipated to be a likely route of exposure to this product.

Mutagenic Effects

This substance is not expected to cause mutagenic effects.

Carcinogenic Effects

The components of this material are not found on the following lists: FEDERAL OSHA Z LIST, NTP and IARC; therefore, they are not considered to be, nor suspected to be, cancer-causing agents by these agencies.

Key to abbreviations

TC= Toxic Concentration
LC = Lethal Concentration

12. ECOLOGICAL INFORMATION

Toxicity

FISH TOXICITY: 150000 ug/L 48 day(s) (Mortality) Brown trout (Salmo trutta)

Persistence and degradability

Material data lacking.

Bioaccumulative potential

Material data lacking.

Mobility in soil

Material data lacking.

Results of PBT and vPvB assessment

PBT and vPvB assessment has not been conducted for this material.

Other adverse effects

Material data lacking.

13. DISPOSAL CONSIDERATIONS

Waste Treatment Methods

Disposal of Carbon Dioxide:

Gradually release in open air, because if released indoors, it may cause simple suffocation, even though the toxicity is low.

Disposal of Cylinders:

If gas remains in cylinders, release gas with proper equipment and dispose of cylinders as incombustible waste.
For empty cylinders, check for a puncture hole or threaded opening in the cylinder to confirm it is empty. Then dispose of as incombustible waste.
Do not dispose of cylinders without first checking that all gas has been released. Empty cylinder shells are 100% recyclable steel or aluminum.

14. TRANSPORT INFORMATION

	DOT	TDG	IMO / IMDG	ICAO/IATA
UN number	UN1013	UN1013	UN1013	UN1013
UN proper shipping name	Carbon Dioxide	Carbon Dioxide	Carbon Dioxide	Carbon Dioxide
Transport hazard class(es)	2.2	2.2	2.2	2.2
Packing group	No Data Available	No Data Available	No Data Available	No Data Available

See 49 CFR 172.101 and 49 CFR 173.306 for exceptions of labeling.
The compressed gas cylinders used comply with prescribed US DOT regulations regarding Carbon Dioxide in cylinders of not more than 4 fluid ounces (7.22 cubic inches/118.3 ml) capacity. Refer to 49 CFR 173.306(a)(1) “Limited Quantities of Compressed Gas.”

Environmental hazards

No data available.

Special precautions for user

Consists of a steel cylinder of Carbon Dioxide gas under pressure which may discharge or rupture under extreme temperatures. Keep away from heat sources, flame, or flame producing sources.

Cylinders should be transported in a secure position, in a well-ventilated vehicle. The transportation of compressed gas cylinders in automobiles or in closed-body vehicles can present serious safety hazards. If transporting these cylinders in vehicles, ensure these cylinders are not exposed to extremely high temperatures (as may occur in an enclosed vehicle on a hot day). Additionally, the vehicle should be well-ventilated during transportation.

Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Not Applicable

15. REGULATORY INFORMATION

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

State Right to Know				
Component	**CAS**	**MA**	**NJ**	**PA**
Carbon dioxide	124-38-9	Yes	Yes	Yes

Inventory				
Component	**CAS**	**Canada DSL**	**Canada NDSL**	**TSCA**
Carbon dioxide	124-38-9	Yes	No	Yes

Canada

Canada WHMIS Classifications of Substances

Carbon dioxide 124-38-9 > 99% A; Uncontrolled product according to WHMIS classification criteria (solid)

Canada WHMIS Ingredient Disclosure List

Carbon dioxide 124-38-9 > 99% 1 %

United States

TSCA 8(b) inventory:

Carbon Dioxide

SARA 302/304/311/312 hazardous chemicals:

Carbon Dioxide

SARA 311/312 MSDS distribution - chemical inventory - hazard identification:

Carbon Dioxide: Sudden Release of Pressure, Immediate (Acute) Health Hazard, Delayed (Chronic) Health Hazard

Chemical Safety Assessment

No Chemical Safety Assessment has been carried out.

16. OTHER INFORMATION

HAZARD RATING SYSTEMS:

NFPA Ratings

Health = 1
Flammability = 0
Reactivity = 0 Special = SA (CGA recommends this rating to designate Simple Asphyxiant.)

HMIS Ratings

Health = 0
Flammability = 0
Reactivity = 0

Revision F is the first version in the GHS SDS format. Listings of changes from previous versions in other formats are not applicable.

Disclaimer Liability: Since conditions or methods of use are beyond our control, we do not assume any responsibility and expressly disclaim any liability for any use of this product. The information contained in this SDS is believed to be true and accurate. All statements or suggestions are made without warranty, express of implied, regarding the accuracy of the information, the hazards connected with the use of the product, or the results to be obtained from the use thereof. Compliance with all federal, state, and local laws and regulations remains the responsibility of the user.

User Responsiblity: This SDS cannot cover all possible situations which the distributor, retailer, or end user may experience during transport, storage, processing, or use. The user should examine each aspect of his operation and determine if additional precautions should be taken. All health and safety information contained in this SDS should be provided to the user's employees or customers. It is the user's responsibility to use this information to develop appropriate work practice guidelines and employee training programs for his operation.

End of Safety Data Sheet