1 IDENTIFICATION OF THE SUBSTANCE

Trade Name : I

MSDS No : CS 001

Chemical Formula : Contains a small CO_2 cylinder to inflate the lifejacket
May contain lithium batteries (if marine safety light is fitted to lifejacket)

Company Identification : Survitec Service & Distribution Ltd
Survitec House, Lederle Lane, Gosport, Hampshire
PO13 0FZ
England

Emergency Phone Numbers : +44 (0) 1329 820000 (for lifejacket manufacturer)
+43 1 406 43 43 (CO_2 cylinder emergency information)
+(852) 3583 2821 (for lithium battery emergency information)

2 HAZARDS IDENTIFICATION

CO_2 Cylinder : The inflatable lifejacket contains a small cylinder of compressed Carbon Dioxide CO_2 gas that may vent from the cylinder or inflate the life jacket. The cylinder may explode if heated, or under fire conditions.

: CO_2 is non-toxic, non flammable and heavier than air. In high concentrations may cause asphyxiation. Cylinders contain 33g, 38g or a maximum of 60g of CO_2 gas.

Lithium Battery : The inflatable lifejacket may contain a marine s
battery. The Lithium battery can explode or leak if heated, disassembled, shorted, recharged, exposed to fire or high temperature or inserted incorrectly.

: Eye contact with battery contents may cause irritation.

: Skin contact with battery contents may cause ir ritation.

: I
leaking batteries may cause respiratory and eye irritation.

: ngestion is not anticipated for larger batteries due to the size.

3 COMPOSITION / INFORMATION ON INGREDIENTS

CO_2 cylinder does not contain any other components / impurities which could affect the classification of this product.

Substance name	Contents	CAS No	Classification
Carbon Dioxide	>99%	124-38-9	Press.Gas (Liq) H280

Lithium powered marine safety light. The battery cells are hermetically sealed. Pressurised primary lithium/sulphur dioxide and as supplied are electronically protected from external environment by a moulded and sealed plastic casing.

Substance name	Contents	CAS No	Classification
Manganese Dioxide	15-45%	1313-13-9	Not defined
1,2-Dimethoxyethane	5-10%	110-71-4	Not defined
Propylene Carbonate	1-10%	108-32-7	Not defined
Lithium	1-5%	7439-93-2	Not defined
Lithium Trifluoromethane Sulfonate	0-5%	33454-82-9	Not defined
Carbon Black	0-5%	1333-86-4	Not defined
Ethylene Carbonate	0-5%	96-49-1	Not defined

4 FIRST AID MEASURES

The life saving appliance presents no hazards in general that require first aid measures.

First aid measures for contact with the contents of the CO_2 cylinder detailed below:

Eyes	:	Immediately flush eyes thoroughly with water for at least 15 minutes.
Skin	:	Spray any cold burns immediately with water for at least 15 minutes. Cover with sterile dressing. Consult a doctor.
Inhalation	:	Remove victim to uncontaminated area wearing self-contained respiratory equipment. Keep victim warm and rested.
Ingestion	:	Ingestion is not considered a possible route of exposure.

First aid measures for contact with the contents of the lithium battery:

Eyes	:	Flush thoroughly with copious amounts of running water for 30 minutes. Seek immediate medical attention.
Skin	:	Remove any contaminated clothing and flush exposed skin with copious amounts of running water for at least 15 minutes. If irritation, injury or pain persists, seek medical attention.
Inhalation	:	Contents may be irritating to respiratory passages. Move to fresh air. If irritation persists, seek medical attention.
Ingestion	:	Wash out mouth thoroughly with water and give plenty of water to drink. Obtain medical attention
Further treatment	:	All cases of eye contamination, persistent skin irritation and casualties who have swallowed this substance or been affected by breathing its vapours should be seen by a doctor. If the cell vents, personnel should be evacuated from contaminated areas. Other materials are either inert or have low hazard associated with their exposure.

5 FIRE-FIGHTING MEASURES

Fire fighting measures for C02 cylinder

Specific hazards	:	Exposure to fire may cause CO_2 container to rupture/explode.
Hazardous combustion products	:	May form harmful fumes under fire conditions; use air ventilated mask and protective clothing when fire fighting.
Extinguishing media	:	Carbon dioxide, water mist, dry chemical powder – or AFF
Personal protection	:	Move away from the cylinder and cool with water from a protected position. Use air ventilated breathing apparatus and protective clothing.

Fire fighting measures for lithium light

Specific hazards	:	Batteries may burst and release hazardous decomposition products when exposed to a fire situation.
Hazardous combustion products	:	Thermal degradation may produce hazardous fumes of lithium and manganese; hydrofluoric acid, oxides of carbon and sulfur and other toxic by-products.
Extinguishing media	:	Use dry chemical, alcohol foam, water or carbon dioxide as appropriate for the surrounding fire. For incipient fires, carbon dioxide extinguishers are more effective than water.
Personal protection	:	Move away from fire exposed batteries and cool to prevent rupture from a protected position. Use air ventilated breathing apparatus and protective clothing.

6 ACCIDENTAL RELEASE MEASURES

Lifejackets present no hazards in general that require safety measures.
Safety measures for the accidental release of the contents of the CO_2 cylinder and/or lithium battery are detailed below.

Personal precautions	:	In the event of CO2 cylinder or battery rupture, evacuate area. Wear self-contained breathing apparatus when entering area unless atmosphere is proved to be safe. Ensure adequate air ventilation. Remove ignition sources. Avoid skin contact.
Environmental precautions	:	Conduct a risk assessments of work areas or activities relating to the use of the lifejacket and risks associated. Implement controls to reduce/remove the risk of exposure.
Clean up methods	:	Ventilate area. Remove spilled battery liquid with absorbent and contain for disposal.

7 HANDLING AND STORAGE

The lifejacket presents no hazards in general requiring safety measures during handling and storage.

Storage	:	Keep CO_2 container below 40°C in a well ventilated place.
Handling	:	Use only properly specified equipment which is suitable for this product, its supply pressure and temperature.

8 EXPOSURE CONTROLS / PERSONAL PROTECTION

The lifejacket presents no hazards in general requiring exposure control or PPE.

Personal protection	:	In the event of rupture of the CO_2 cylinder or lithium battery, ensure adequate ventilation; refer to sections 4 & 6 or the MSDS for the CO_2 cylinder or Lithium battery.

9 PHYSICAL AND CHEMICAL PROPERTIES

The physical and chemical properties detailed below refer to the CO_2 cylinder used to inflate the lifejacket.

Colour	:	The cylinder contains carbon dioxide, a colourless gas
Odour	:	No odour warning properties.
Molecular mass [g/mol]	:	44
Relative density. Gas (air=1)	:	1.52
Critical temperature [°C]	:	31.0

The physical and chemical properties detailed below refer to the lithium battery.

Appearance	:	Light in hermetically sealed plastic housing
Flash Point (°F)	:	29 (-2°C)

10 STABILITY AND REACTIVITY

C02 Cylinder

Reactivity	:	Stable under normal conditions but avoid intense heat and fire.
Chemical Stability	:	Stable under normal conditions.
Possibility of Hazardous Reactions	:	None
Conditions to avoid	:	None
Incompatible materials	:	None

Lithium Light

Reactivity	:	Hazardous materials are housed within a hermetically sealed unit. Under normal conditions this unit is non-hazardous.
Chemical Stability	:	Stable under normal conditions.
Possibility of Hazardous Reactions	:	Stable under normal conditions.
Conditions to avoid	:	Thermal decomposition may produce hazardous fumes of lithium and manganese; hydrofluoric acid, oxides of carbon and sulfer and other toxic by-products.
Incompatible materials	:	Contents are incompatible with strong oxidizing agents. Do not heat, crush, and disseminate, short circuit or recharge.

11 TOXICOLOGICAL INFORMATION

CO_2 Cylinder	:	In high concentrations may cause rapid circulatory deterioration even at normal level of oxygen concentration. Symptoms are headache, nausea and vomiting, which may lead to unconsciousness and even death.
Lithium Light	:	The chemicals in this product are contained in a hermetically sealed unit and exposure does not occur during normal handling and use. No chronic effects would be expected from handling a leaking battery. Carbon Black is classified by IARC as Possibly Carcinogenic to Humans (Group 2B). None of the other components of this product are listed as carcinogens by ACGIH, IARC, NTP or OSHA.

12 ECOLOGICAL INFORMATION

CO_2 Cylinder (empty)	:	Depending on the technical specification of the chromate layer which protects the cylinders zinc plating may contain chromium in the oxidation state of VI. No other ecological damage is caused by this product.
Lithium Light	:	No ecotoxicity data is available. This product is not expected to present an environmental hazard.
Lifejacket	:	Remove as domestic waste

13 DISPOSAL CONSIDERATIONS

CO_2 Cylinder (empty)	:	Disposal should be in accordance with federal, state/provincial and local regulations. Do not discharge the CO_2 from the cylinder into any place where its accumulation could be dangerous (only in well-ventilated place). Dispose of empty cylinders only. Empty cylinders should always be recycled. Never dispose of cylinders in an uncontrolled manner.
Lithium Light	:	Disposal should be in accordance with Federal, state/provincial and local regulations. Large quantities of open batteries should be treated as hazardous waste. Do not incinerate except for disposal in a controlled incinerator. Some communities offer recycling or collection of batteries – contact your local government for disposal practices in your area.

14 TRANSPORT INFORMATION

The classification for **ADR, IATA, IMDG** & **RID** is the same:

Class	:	Class 9 (these items are not subject to the transport regulations of provision UN 2990 if the guidelines of special provisions referenced below are adhered too).
UN/ID Number	:	UN 2990
Proper Shipping Name	:	LIFE-SAVING APPLIANCES, SELF- INFLATING
Label	:	If fitted with Lithium Battery ≤2g, a lithium handling label must be affixed to package. If fitted with Lithium Battery >2g, a Class 9 label.

Further information : Refer to PI955 IATA 64th edition 2024
Special Provision 188 of ADR & IMDG as amended

Special Provision 296 of ADR as amended
Special provision 296 of IMDG Code as amended

Avoid transport on vehicles where the load space is not separated from the driver's compartment. Ensure vehicle driver is aware of the potential hazards of the load and knows what to do in the event of an accident.

15 REGULATORY INFORMATION

Restrictions on use : None

National Regulations : Ensure that all national / local regulations are observed

16 OTHER INFORMATION

User must be familiar with this safety data sheet (SDS). The purpose of the SDS is to describe the product in terms of its health, safety and environmental requirements only. It should not be construed as guaranteeing any specific property of the product.

The data given here is based on current knowledge and experience. Whilst proper care has been taken in the preparation of this document, no liability for injury or damage resulting from its use can be accepted.

Recommended uses and restrictions: This SDS is for information purposes only and is subject to change without notice.