



# Jinwon Electronics Co., Ltd

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## SECURITY DATA SHEET

*Emission date: 03/30/2018*

### 1.PRODUCT AND COMPANY IDENTIFICATION

1.1) Trade name: **Helper Floating Neck Bracelet, Self-Inflating**

1.2) Materials used in the product:

1.2-1) Upper cover of the Body: Latex fabric material

1.2-2) Lower cover of the Body: Latex fabric material

1.2-3) Tube embedded in the Body: TPU coated on 100% with Nylon fabric material

1.2-4) Activation device in the body: CO2 (Carbon Dioxide) cartridge + Detonator device

1.2-5) Handgrip : Plastic

1.2-6) Whistle : Plastic

1.3 Application: Helper Floating Neck Bracelet, Self-Inflating as a life-saving safety precaution appliance gives additional buoyancy in emergency situation for the swimmer and prevent swimmer's head from going under water and is thus able to keep a swimmer afloat.

1.4) Exporter (Sales Company): **Helper Device Corp**

1.4-1) Address: (Janghang-Dong, "M" city tower),  
3007, Baekma-Ro 195, ILSandong-Gu,  
Goyang-City, Gyeonggi- Do,  
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1.4-2) Tel: +82-31-907-12-09

1.4-3) Fax: +82-31-908-12-09

1.4-4) Website: [www.helperdevice.com](http://www.helperdevice.com)

1.5) Supplier / Manufacturer: **Jinwon Electronics Co., Ltd**

1.5-1) Address: 45, Shinheungro 416 beon-Gil,  
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## **2) HAZARD IDENTIFICATION**

2.1 Toxicity may occur in case of not following recommendations and damaging the embedded tube or CO2 gas cylinder (cartridge): occupational exposure standard (OES) 5000 vpm. Asphyxiant vapor.

Danger to life at 10-20 %v/v in air. Danger to persons lying on the floor as the vapor is heavier than air.

■ Cartridge pressure is as follows :

- 1) CO2 input pressure 60 Kgf /cm<sup>2</sup> → 50.0 atm
- 2) CO2 output pressure 450 Kgf /cm<sup>2</sup> → 435.5 atm
- 3) CO2 gas storage pressure (based on 20 degrees Celsius) → 70.0 atm

■ Cartridge weight is as follows:

1) Weight when CO2 gas is filled → 40.89 gram (40.89 gram ~ 40.85 gram)

2) Weight when CO2 gas is exhausted → 29.80 gram ~ 30.6 gram

※ CO2 gas liquid weight (filling-discharge) → 11.87 gram

(A few cartridges have a difference of 10.8 gram to 11.87 gram)

Note: Carbon Dioxide cannot exist as a liquid at atmospheric pressure.

Slightly corrosive in the presence of moisture.

Solid carbon dioxide or cold vapour may cause cold burns or frost bite.

## **3) COMPOSITION OF THE PRODUCT AND PACKAGING INSTRUCTIONS**

3.1) Upper cover of the Body

3.2) Lower cover of the Body

3.3) Tube embedded in the Body

3.4) Activation device with 12 gr of CO2 gas cylinder (cartridge) in the body

3.5) Handgrip

3.6) Whistle

3-7) The product packed according to the product size.

3-8) Printed in the box outside appearance about how to use, storage, handling method, and warranty.

3-9) The manual made per country language and bundled with the product as a booklet inside the box.

3-10) Products are packaged and shipped according to IMO (International Maritime Organization) and

## IATA (International Air Transport Association) regulations

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

### **4) FIRST AID MEASURES**

4.1 It is recommended the users to read all instructions and precautions carefully before use of the product. Misuse of the device's equipment and device malfunction may cause damage and injury to the body (If user is not familiar with the instructions and precautions).

- There is a risk of damaging the tube with sharp materials.
- Helper Floating Neck Bracelet is supposed for use on the neck only.
- This device contains compressed CO<sub>2</sub> cartridge.
- Recommended to not expose the product to direct sunlight, puncture it, or store it at high temperature; to not inhale the contents of the CO<sub>2</sub> cartridge, or discharge it toward the face or body. The contents may cause illness, skin and eye inflammation concerns and it can cause frostbite.

#### 4.2 Inhalation:

- ❖ Minimizing personal risk, immediately remove victim to uncontaminated area or remove exposed person to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular, or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation
- ❖ If breathing is weak or stopped, apply artificial respiration with simultaneous administration of oxygen, preferably using oxygen resuscitator.
- ❖ Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband

#### 4.3 Contact with skin:

- ❖ Carbon dioxide is harmless at atmospheric pressure. Flush contaminated skin with plenty of water for five minutes.
- ❖ Remove contaminated clothing and shoes. Apply a sterile dressing and treat as a thermal burn.
- ❖ Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse. Seek medical advice and ensure that the possibility of severe internal burns from exposure to very low temperature is clearly understood.

#### 4.4 Contact with eyes:

- ❖ Carbon dioxide is harmless at atmospheric pressure. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs.

#### 4.5 Ingestion:

- ❖ Refer to the inhalation section.



Respiratory Protection: In case of insufficient ventilation, wear suitable respiratory equipment.

Ventilation: Use local exhaust or general dilution ventilation to control exposure with applicable limits.

8.2) General hygiene considerations:

Do not eat, drink or smoke when using this product. Handle in accordance with good industrial hygiene and safety practice.

## **9) PHYSICAL AND CHEMICAL PROPERTIES**

\* Appearance

9.1) Physical state at 20°C / 101.3kPa : CO<sub>2</sub> Gas

9.2) Colour: Colourless

9.3) Smell: No smell warning properties.

9.4) Smell threshold: Odour threshold is subjective and inadequate to warn of

9.5) Overexposure. pH value : Not applicable.

9.6) Molar mass: 44 g/mol

9.7) Melting point: -78.5°C

9.8) Boiling point: -56.6°C (s)

9.9) Flash point: Not applicable for gases

9.10) And gas mixtures, Critical temperature [°C]: 30°C

9.11) Evaporation rate (ether=1): Not applicable for gases

9.12) And gas mixtures. Flammability range: Nonflammable.

9.13) Vapour pressure[20°C]: 57.3

9.14) Bar(a) Vapour pressure [50°C]: Not

9.15) Applicable. Relative density, gas (air=1) : 1.52

9.16) Relative density, liquid (water=1): 0.82

9.17) Solubility in water: 2000 mg/l Completely soluble.

9.18) Partition coefficient n-octanol/water [log Kow]: 0.83

9.19) Auto-ignition temperature: Not applicable.

9.20) Viscosity [20°C]: Not applicable.

9.21) Explosive Properties: Not applicable.

9.22) Oxidizing Properties: None.

Description	Model and specification of CO2 cartridge		
	10g	12g	14g
Overall Length (approx..)	61mm	83mm	79mm
Body diameter	22mm	18mm	22mm
Neck diameter	8.8mm	7.2mm	8.8mm
Burst Pressure of Cylinder	500bar	500bar	500bar
Design Pressure	250bar	250bar	250bar
Gas Capacity	10.64ml	14ml	14.79ml
Mass of Gas	10.3±0.4g	12±1g	14.3±0.4
Cylinder N.W.	28.5±0.3g	30.7±0.3g	52.7±0.3g
Filling Pressure	72bar	72 bar	72bar
Filling Density	0.75kg/l Max	0.75kg/l Max	0.75kg/l Max
Cap Piercing Force	40N Min 300N Max	40N Min 300N Max	40N Min 300N Max

## **10) STABILITY AND REACTIVITY**

- 10.1. Chemical Stability: Stable under normal storage and handling conditions.
- 10.2. Reactivity: No data available
- 10.3. Possibility of hazardous reactions: Hazardous polymerization does not occur.
- 10.4. Conditions to Avoid: Humidity, incompatible materials, sea (salted) water.
- 10.5. Incompatible Materials: Strong acids/alkaline.
- 10.6. Hazardous decomposition products: None

## **11) TOXICOLOGICAL INFORMATION**

- 11.1) Carbon dioxide (which is normally present in atmosphere air at the level of approximately 350 vpm (0.035%)), regulates the breathing function and an increase in concentration will cause increased breathing rate. Prolonged exposure at this level for several hours may cause a headache and a feeling of exhaustion. At high concentrations carbon dioxide may cause asphyxiation. Breathing an atmosphere rich in carbon dioxide can cause immediate loss of consciousness. Symptoms of asphyxiation may include rapid and gasping respiration, rapid fatigue, nausea, vomiting, cyanosis and may lead to loss of consciousness or death from anoxia.
- 11.2) Therefore, should not forcibly open carbon dioxide from the tube and drink it directly.

## **12) ECOLOGICAL INFORMATION**

- 12.1) The tubes were coated with nylon 100% fabric with TPU to prevent carbon dioxide from escaping.
- 12.2) The outer body is a soft latex material that does not harm the skin.
- 12.3) The components in the inside of the tube are safe as a small plastic material.

### **13) DISPOSAL CONSIDERATIONS OF THE PRODUCT**

- 13.1) Never dump at sea.
- 13.2) Inform waste disposal contractor of material to be disposed of renewable company or general waste garbage contractor.
- 13.3) Never dispose of a filled CO2 cylinder.
- 13.4) If gas remains in cylinders, release gas with proper equipment and recycle cylinders as recyclable steel.
- 13.5) Verify for puncture hole.
- 13.6) Do not dispose or recycle without first checking that all gas has been released and there is a puncture hole on the cylinder.

### **14) TRANSPORTATION INFORMATION**

#### **14.1) Packing instruction (Ocean Transportation)**

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary risk	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC	
						Limited quantity	Excepted quantity	Instructions	Provisions	Instructions	Provisions
2990	LIFE-SAVING APPLIANCES, SELF-INFLATION	9	-	-	296	0	E0	P905	-	-	-

\* Part 4 – Packing and tank provisions of Dangerous Goods list, special provisions and exceptions

\* This instruction applies to UN Nos. 2990 and 3072. Any suitable packing is authorized, provided the general provisions of 4.1.1 and 4.1.3 are met, except that packaging need not conform to the provisions of part. When the life-saving appliances are constructed to incorporate or are contained in rigid outer weatherproof casings (such as for lifeboats), they may be transported unpackaged.

#### 14.1-1) Additional provisions:

All dangerous substances and articles contained as equipment within the appliances shall be secured to prevent inadvertent movement and in addition:

- (a) Signal devices of class 1 shall be packed in plastics or fiberboard inner packaging;
- (b) Gases (class 2.2) shall be contained in cylinders as specified by the competent authority, which may be connected to the appliance;
- (c) Electric storage batteries (class 8) and lithium batteries (class 9) shall be disconnected or electrically isolated and secured to prevent any spillage or liquid; and
- (d) Small quantities of other dangerous substances (for example in classes 3, 4.4 and 5.2) shall be packed in strong inner packaging.

14.1-2) Preparation for transport and packaging shall include provisions to prevent any accidental inflation of the appliance.

14.1-3) Life-saving appliances packed in strong rigid outer packaging with a total maximum gross weight or 40 kg, containing no dangerous goods other than Division 2.2 compressed or liquefied gases with no subsidiary risk in receptacles with a capacity not exceeding 120 mL,

installed solely for the purpose of the activation of the appliance, are not subject to these Regulations when carried as cargo.

#### 14.2) Packing instruction (Air Transportation)

UN/ ID no	Proper shipping Name/Description	Class or Div. (Sub Risk)	Hazard Label(s)	Passenger and Cargo Aircraft				Cargo Aircraft only		S.P See 4.4	ERG Code	
				EQ See 2.6	Limited Q'ty		Pkg inst	Max Net Qty/Pkg	Pkg inst			Max Net Q'ty/Pkg
					Pkg inst	Max Net Q'ty/Pkg						
3072	Life-saving appliance, not self- inflating	9	Miscellaneous	E0	Forbidden		955	No limit	955	No limit	A48 A87 A182	9L
2990	Life-saving appliance, self- inflating	9	Miscellaneous	E0	Forbidden		955	No limit	955	No limit	A48 A87	9L

#### 14.2-1) Part 4 – Dangerous Goods Regulations

##### \* PACKING INSTRUCTION 955

- a. First aid kits which may be packed so that they cannot be accidentally activated, in strong outer packaging and except for life-vests, the dangerous goods must be in inner packaging packed so as to prevent movement. The dangerous goods must be an integral part of the appliance without which it would not be operational and in quantities which do not exceed those appropriate for the actual appliance when in use.
- b. Life-saving appliances packed in strong rigid outer packaging with a total maximum gross weight or 40 kg, containing no dangerous goods other than Division 2.2 compressed or liquefied gases with no subsidiary risk in receptacles with a capacity not exceeding 120 mL, installed solely for the purpose of the activation of the appliance, are not subject to these Regulations when carried as cargo.

#### 14.2-2) Co2 cartridge capacity of compressed CO2 Cartridge

14.2-2-1) UN No: 2990

14.2-2-1) 3072 (Class 9)

14.2-3) This UN No is inflated product or completed product about "Helper Neck Floating Bracelet, Self-inflating".

These entries apply to life-saving appliances such as life rafts, personal flotation devices and self-inflating slides. UN 2990 applies to self-inflating appliances. UN 3072 applies to life-saving appliances that are not self-inflating. Life-saving appliances may contain:

Life-saving appliances packed in strong rigid outer packaging with a total maximum gross mass of 40 kg, containing no dangerous goods other than class 2.2 compressed or liquefied gases with no subsidiary risk in receptacles with a capacity not exceeding 120 ml, installed solely for the purpose of the activation of the appliance, are not subject to the provision of this Code.

14.2-4) This instruction applies to UN 2990, Life-saving appliances, self-inflating and UN 3072,



Life saving appliances, not inflating on passenger aircraft and Cargo Aircraft only.

The term "life-saving appliances" applies to articles such as life rafts, life vests, aircraft survival kits or aircraft evacuated slides.

The description "Life-saving appliances, self-inflating" (UN 2990) is intended to apply to life-saving appliances that present a hazard if the self-inflating device is activated accidentally.

Life-saving appliances, may only contain the dangerous goods listed below: (a) Division 2.2 gases, must be contained in cylinders which conform to the requirements of the appropriate national authority of the country in which they are approved and filled. Such cylinders may be connected to the life-saving appliance. These cylinders may include installed actuating cartridges (cartridges, power device of Division 1.4C and 1.4S) provided the aggregate quantity of deflagrating (propellant) explosives does not exceed 3.2 g per unit.

When the cylinders are shipped separately, they must be classified as appropriate for the Division 2.2 gas contained and need not be marked, labeled or described as explosive articles;

These cylinders may include installed actuating cartridges (cartridges, power device of Division 1.4C and 1.4S) provided the aggregate quantity of deflagrating (propellant) explosives which does not exceed 3.2 g per unit.

When the cylinders are shipped separately, they must be classified as appropriate for the Division 2.2 gas contained and need not be marked, labeled or described as explosive articles.

## **15) REGULATORY INFORMATION**

- 15.1) Regulatory references: Gas-cylinders comply with the requirements of the CEN standards (EN 395, 396, 399, sections 4.7 & 7.2) for life-jackets and also the requirements for Inflation Medium Containers in the proposed third Edition of UL 1191.

## **16) OTHER INFORMATION, INCLUDING DATE OF PREPARATION OF THE LAST REVISION**

Statistics show that thousands of cases are recorded yearly in the world where it is precisely those who can swim (both adults and children) that perish due to whirlpools or undercurrents which take them away from the shore. There are also numerous cases where swimming in cold water causes seizures in the limbs, making it difficult for a person to swim ashore.

Drowning in water is also caused by illness: heart attacks during swimming, epileptic seizures, sudden weakness, dizziness, etc.

Statistics also suggest that among all drowning people, young men from 15 to 30 years are registered most often. Also, a huge percentage of deaths from drowning occur in children aged 1 to 14 years, left unattended even for a couple of minutes.

Helper Floating Neck Bracelet, Self-Inflating is a mean of insurance, self-rescue and first aid in the water which gives extra buoyancy to the body in emergency situations (like the ones described above) and in many others, that are difficult to imagine, which one can suddenly find in.

Helper Floating Neck Bracelet, Self-Inflating as a safety precaution device is suitable to be worn for swimming, sailings, surfing, fishing, camping and can also be a floating-aid in swimming classes.

In case of emergency all one must do is pull the red hand grip down calmly to activate the inflation of an internal air bag. Helper Floating Neck Bracelet, Self-Inflating will enhance your ability to float on water and in the span of a few seconds, it will lift your head above the water surface.

Revision date: 03/30/2018.

Revision note: Updated formatting, first edition.

Disclaimer: The information contained herein is presented in good faith and believed to be accurate as of the effective date shown above. This information is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determination of suitability and completeness of information from all sources to assure proper use of these materials and health of employees.

Any use of this data and information must be determined by the user to be in accordance with applicable federal, state and local laws and regulations.

End of Safety Data Sheet.

Jinwon Electronics Co., Ltd

Kang, In Hyun / President :

