

**MATERIAL SAFETY DATA SHEET***Prepared to Commission Directive 91/155/EEC, 1991 and US OSHA Standards*

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**WHAT IS THE PRODUCT AND WHAT INFORMATION IS REQUIRED IN AN EMERGENCY?****SECTION 1 – IDENTIFICATION OF SUBSTANCE AND OF THE COMPANY****Product Name:** SOLO Aerosol Smoke Detector Tester**Part Number:** SOLO A3 – XXX; SOLO A4 – XXX**Manufacturer:** No Climb Products Ltd, Edison House, 163 Dixons Hill Road, Welham Green, Hertfordshire, AL9 7JE, UK  
Tel +44 (0) 1707 282760; Fax +44 (0) 1707 282777**SECTION 2 – COMPOSITION/INFORMATION ON COMPONENTS**

Components	CAS No.	Approx. wt. %	EC Risk phrase/class
Mixture of alcohols	Mixture	1-20	R36, R11, F
HFC 134a (1,1,1,2-Tetrafluoroethane)	811-97-2	80-99	None
% Flammable components	Mixture	≤ 20%	

**SECTION 3 – HAZARD IDENTIFICATION****OVER-EXPOSURE:**

The most significant route of exposure for this product is by inhalation, eye or skin contact:

**Inhalation:**

- ☐ Inhalation of vapour mists or sprays of this product can cause mild to moderate irritation of the tissue of the nose, throat and upper respiratory system;
- ☐ Over-exposure (as a result of using several cans in a short period of time in a poorly ventilated area) can lead to headache, nausea, general anaesthetic effects and could result in an oxygen-deficient atmosphere due to the vapours of the spray being a lot heavier than air.

**Skin and eyes:**

- ☐ Eye contact with the spray may cause mild irritation;
- ☐ Sustained spraying directly onto skin may cause localised rapid cooling of tissue resulting in frostbite-type symptoms.

**FIRE AND EXPLOSION HAZARDS:**

- ☐ This product is classed as a non-flammable aerosol;
- ☐ As with all pressurised aerosol containers, cans may burst if heated to over 50°C (122°F).

**WHAT SHOULD BE DONE IF A HAZARDOUS SITUATION OCCURS?****SECTION 4 – FIRST AID MEASURES****Eyes:**

- ☐ Lifting eyelids, flush with plenty of water; Obtain medical assistance if irritation persists;

**Skin:**

- ☐ Wash with soap and water; If irritation persists, seek medical attention;

**Ingestion:**

- ☐ Unlikely to happen as the product is a vapour/mist at room temperature; If product enters mouth, rinse mouth out with water and avoid swallowing;

**Inhalation:**

- ☐ Get to supply of fresh air; If irregular breathing occurs, qualified personnel should administer artificial respiration; Seek medical assistance if symptoms persist.

## **SECTION 5 – FIRE FIGHTING MEASURES**

### **Unusual Fire and Explosion hazards:**

- ☐ Under the normal conditions of use and when subjected to various flame/explosion tests defined by the relevant EC Directives and US DOT criteria, this product does not readily support combustion and is as such, classed non-flammable. However, it does contain a maximum of 20% flammable substances. Consequently, the product may present a slight flammability hazard if the canisters are involved in a fire or the flammable components fractionate (through a leak), producing compositions that are flammable.

### **Extinguishing Media:**

- ☐ For large fires, use alcohol resistant foam, CO<sub>2</sub> or dry chemical powder;

### **Unsuitable Extinguishing Agent:**

- ☐ Water with full jets;

### **Special Fire Fighting Procedures:**

- ☐ Use water sprays to keep containers that are near a fire cool and vapours down;
- ☐ Move cans way from fire area if it can be done without risk to personnel;
- ☐ Fire fighters must wear self-contained breathing apparatus to guard against being overwhelmed by the products of combustion.

### **Special exposure hazards:**

- ☐ None.

## **SECTION 6 – ACCIDENTAL RELEASE (SPILL AND LEAK) MEASURES:**

### **Person-related safety precautions:**

- ☐ With uncontrollable releases (i.e., release from several cans at once), evacuate affected area and ventilate;

### **Environmental Protection:**

- ☐ Prevent run-offs from entering public watercourses;

### **Measures for cleaning:**

- ☐ Ensure adequate ventilation to allow for evaporation of volatile components;
- ☐ Eliminate all sources of ignition before spill clean-up begins;
- ☐ Monitor area for combustible vapours and the level of oxygen;
- ☐ Absorb any remaining liquid components with liquid binding material and place in suitable container.

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## **HOW CAN HAZARDOUS SITUATIONS BE PREVENTED FROM OCCURRING?**

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## **SECTION 7 – PRECAUTIONS FOR SAFE HANDLING, STORAGE & USE**

### **Safe handling:**

- ☐ Good practices include keeping product away from heat, sparks and other ignition sources;
- ☐ Contents are under pressure- do not puncture or force open cans even when empty- cans may contain residual liquid or vapours which may be flammable;

### **Safe Storage:**

- ☐ Observe official regulations on storing packaging with pressure containers;
- ☐ Store containers in cool, dry locations away from direct sunlight and do not store at temperatures exceeding 50°C (122°F) (e.g. passenger or back seat of a car in summer months);
- ☐ Do not store together with strong acids or oxidising agents;

### **Safe Use:**

- ☐ As with all chemicals, avoid getting this product IN YOU- do not eat and drink whilst handling chemicals;
- ☐ Ensure good ventilation/mechanical exhaustion at workplace- if this is not possible, take regular breaks from use;
- ☐ Do not deliberately concentrate or inhale vapours;
- ☐ Follow label directions carefully; use only with SOLO dispenser.



## **SECTION 8 – EXPOSURE CONTROLS**

### **Respiratory Protection:**

- ☐ No protective device is required during normal use of product;
- ☐ Mechanical ventilation is recommended where product is used in confined spaces- if this is not possible, take regular breaks in fresh air.

### **Personal Protection:**

- ☐ Wear PPE (personal protective equipment) appropriate to the task and the environment.

## **SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES**

### **Physical & Chemical properties:**

The following information is for 1,1,1,2- Tetrafluoroethane, the main component of this product:

Vapour density (air = 1)	5.26 kg/m <sup>3</sup> (0.328 lb/ft <sup>3</sup> )
Solubility in water (25°C, 77 °F)	67 m/L;
Melting point	101°C (214 °F)
Boiling point (760 mm Hg)	-25.6°C (-14.08 °F)
Flash point	Non-flammable
Vapour pressure (20°C, 68 °F)	70 psig

The information given immediately below is pertinent to the aerosol product as a whole:

Form:	Aerosol (liquid released under pressure);
Colour:	Colourless, clear;
Residue formation:	Clean, non-greasy, fast evaporating;
Odour:	Faint sweet pleasant odour;
Pressure	@ 20°C (68 °F) ~6 bar (~ 87 psig); @ 50°C (122 °F)~11 bar (~159 psig);
Product Density	@ 20°C (68 °F)~1.02 g/ml (63.67 lb/ft <sup>3</sup> );
Flashpoint of liquid	12°C (~ 54 °F);
Vapour density (air = 1)	Greater than 1;
Solubility in water	Partly miscible;
Aerosol flammability	Not flammable; Not self-igniting.

## **SECTION 10- STABILITY & REACTIVITY**

### **Stability:**

- ☐ Product is stable between 0 and 40°C (32 - 104 °F) and atmospheric pressures;

### **Conditions to avoid:**

- ☐ Extreme heat, direct sunlight;

### **Materials to avoid:**

- ☐ Strong oxidisers, strong acids, bases, alkali metals;

### **Hazardous decomposition products:**

- ☐ On ignition, this product will decompose to produce oxides of carbon;

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## **WHAT IS THE IMPACT OF THIS PRODUCT ON HEALTH AND THE ENVIRONMENT?**

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## **SECTION 11 – \*TOXICOLOGICAL INFORMATION**

Under normal usage, this product should pose little risks to the health of the user.

### **PRIMARY IRRITANT EFFECT:**

#### **Skin, Eyes and Respiratory system:**

- ☐ Irritant effect through absorption and rapid evaporation of liquid.

### **ACUTE TOXICITY:**

- ☐ Over-exposure to this product can moderately irritate skin, eyes and mucus membranes;
- ☐ Inhalation over-exposure in poorly ventilated environments may cause nausea, headache, vomiting and general loss of co-ordination.

**CHRONIC TOXICITY:**

- ☐ Similarly, repeated inhalation over-exposure in poorly ventilated environments may cause some respiratory disorders such as pharyngitis;
- ☐ Pre-existing medical conditions in liver, kidney and heart may be aggravated by repeated over-exposure.

**Additional information:**

- ☐ 8 hr TWA OEL- UK for HFC 134a: 1000 ppm

**SECTION 12 – ECOLOGICAL INFORMATION****Environmental Mobility:**

- ☐ Over 90% of the product is volatile and is expected to dissipate rapidly into well ventilated areas; the rest is water soluble and will remain primarily in water;

**Environmental Degradability:**

- ☐ This product biodegrades rapidly once in the environment;
- ☐ The propellants do not contain chlorine, are readily degradable in the troposphere and do not deplete the ozone.

**Eco-toxicity:**

- ☐ Low acute toxicity to aquatic life is expected. There is no data for long term adverse effects on aquatic life.

**Other information:**

	GWP 100 yr. time horizon Relative to CO <sub>2</sub> = 1	ODP	Atm. life time	VOC
HFC 134a	1300	0	14	No

**SECTION 13 – DISPOSAL CONSIDERATIONS****Waste disposal method:**

- ☐ Consult local and national regulations;
- ☐ Do not puncture or incinerate containers.

*+The information provided here has been expanded upon from technical literature obtained from suppliers of the product's ingredients.*

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**WHAT INFORMATION DO I NEED TO KNOW REGARDING THE TRANSPORTATION, CLASSIFICATION, PACKAGING AND LABELLING OF THIS PRODUCT?**

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**SECTION 14 – TRANSPORT INFORMATION****Designation of goods/Proper shipping name:**

- ☐ Aerosols, non-flammable; Aerosols, non-flammable, (USA); ORM-D when transported in limited quantities (< 30kg or 66lb gross weight). (USA only)

**UN- Number:**

- ☐ 1950;

**Land Transport (ADR/RID):**

- ☐ ADR/RID class: 2.2 gasses that are compressed, liquefied or dissolved under pressure;
- ☐ ADR Item Number/Letter: 5°A;

**Maritime Transport (IMDG)/Land-Sea Interface:**

- ☐ IMDG Reference (Issue 2000) Vol.2 page 93, UN1950; Aerosols.

**Air Transport (ICAO-TI/IATA):**

- ☐ ICAO/IATA class: 2.2.

**SECTION 15- REGULATORY INFORMATION****Designation according to EC Guidelines**

This product has been classified and labelled in accordance with relevant EC Directives and national laws.



**Code and hazard designation of product:**

- ☐ Not applicable

**Risk R- Phrases:**

- ☐ 36/37 – Irritating to eyes and respiratory system.

**Safety S- Phrases:**

- ☐ 2 – Keep out the of reach of children;  
☐ 3 – Keep in a cool place;  
☐ 24/25 – Avoid contact with skin and eyes;  
☐ 51 – Use only in well-ventilated areas.  
☐ 26 – In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

**Designation according to US Code of Federal Regulations**

MSDS complies with OSHA's Hazard Communication Rule, 29 CFR 1910.1200.

**U.S Superfund and Reauthorization Act (SARA) Title III, 1986 reporting requirements:**

- ☐ Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)/SUPERFUND – Reportable quantities (40 CFR 117.302). None of the chemicals used appear in 40 CFR table 117.3  
☐ Section 302/304- Extremely Hazardous Substances (40 CFR 355). None of the ingredients are Section 302/304 hazards.  
☐ Section 311/312- Material Safety Data Sheet Requirements (40 CFR 370). By our hazard evaluation, the product should be reported under the following EPA Hazard:  
- Immediate (acute) Health Hazard (irritant);  
- Sudden Release of Pressure (compressed gas).  
☐ Section 313- Toxic Chemical Release Reporting (Specific chemical toxic listings 40 CFR 372). This product does not contain any chemicals found on the list of toxic chemicals.

**U.S Toxic Substances Control Act (TSCA).**

All ingredients are TSCA listed.

**Federal Water Pollution Control Act** (40 CFR 401.15).

This product does not contain any chemicals found on the list of toxic pollutants.

**Marine Pollutant** (49 CFR 172.101, Appendix B).

The components of this aerosol are not classified by the DOT as marine pollutants.

**California Proposition 65.**

None of the ingredients of this product is on the California Proposition 65 list.

**NFPA Hazard rating.**

(1) Fire; (1) Health; (1) Reactivity

**SECTION 16 – OTHER INFORMATION**

**References:**

Commission Directive 91/155/EEC, 1991; Statutory Instruments- The Chemicals (Hazard Information and Packaging for Supply) CHIP 3 Regulations July 2002; COSHH Regulations 1989; Hazard Communication Rule, 29 CFR 1910.1200; DOT 49 CFR; 40 CFR - Protection of the Environment; NFPA 704- Standard System for the Identification of Hazards of Materials for Emergency Response 1996

**Revision Status:**

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|---|----------|
| 1. New Material Safety Data Sheet   | 17/01/01 |
| 2. Composition information, Maritime transport information corrected  | 06/07/01 |
| 3. Flash point corrected  | 24/07/01 |
| 4. a) Deletion of reference 20 and n.o.s. to section 14 (IATA revision 43)<br>b) IMDG (section 14) amended to state Vol: 2 page 93, UN1950; Aerosols<br>c) Addition of country code suffix to MSDS Reference No | 25/04/02 |
| 5. CHIP 3 amendment review (section 16)   | 25/06/03 |
| 6. Change of Address  | 10/12/03 |
| 7. Section 2 deletion of reference to R38 Section 8 Include PPE statement<br>Section 15 R phrases remove irritating to skin. S phrases add reference S26  | 18/08/05 |

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