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## Safety Data Sheet

### 1: Identification

**Name:** GSPR-2

**Class:** Flammable gas (2.1)

For the detection of gun shot powder residues.



### 2: Composition/Information on Ingredients

**Appearance:** Aerosol contains yellowish liquid, characteristic odor, soluble in water.

**Composition:**

<u>Ingredients</u>	<u>Percent w/w</u>
DMSO {000067-68-5}	45
TBAH {002052-49-5}	3-3.5
Ethanol {000064-17-5}	3-5
Methanol {000067-56-1}	5
Collection enhancer agent	>0.2
Propellant (LPG) {068476-85-7}	40-45

### 3: Hazards Identification

**Extremely flammable.**

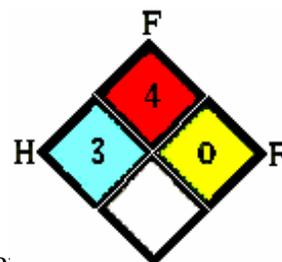
**Causes burns.**

**Irritating to eyes, respiratory system and skin.**

**Harmful if swallowed.**

**Carcinogenicity:** For Ethanol :  
ACGIH A4 – Not classifiable as a human carcinoge

**IDLH:** 3300 ppm NIOSH 1995 (Ethanol)  
2000 ppm NIOSH 1995 (LPG)  
6000 ppm NIOSH 1995 (Methanol)



For more information about symptoms in exposure – see paragraph 4.  
For more data about chemical reaction and incompatibles – see paragraph 10.  
Health (H) Flammability (F)  
Reactivity (R) in scale 0 (not hazardous)  
till 4 (extremely hazardous).

#### **4: First Aid Measures**

- Symptoms:** Causes burns on contact, irritating to eyes, respiratory tract and skin. Harmful if swallowed.
- Skin:** Remove immediately contaminated clothing and shoes unless stuck to the skin.  
Rinse with large amounts of water and mild soap for at least 10 minutes.  
Locate possible signs of burns and refer to medical attention if necessary.
- Eyes:** Rinse opened eyes under running water for at least 15 minutes. Water must be at body temperature. Refer to medical attention from fear of delayed damage.
- Ingestion:** Do NOT induce vomiting. If victim is conscious, have him drink water. Refer for medical attention as necessary. Do not administer liquids to unconscious persons.
- Inhalation:** Using protective gear, evacuate victim from site of exposure. Have victim lie or sit comfortably. If he has difficulty breathing, have him sit with back straight and administer oxygen, if possible. If victim is unconscious, perform resuscitation and immediately transfer to medical personnel.

#### **5: Fire-Fighting Measures**

**Danger of fire or combustion.**

**Extinguishing media:** CO<sub>2</sub>, foam, sand.

Use water spray to keep fire-exposed- containers cool, long after the fire is out.

Vapors are flammable and much heavier than air (heavy gas), may travel long distances along ground before igniting and flashing back to vapor source, or may explode. In case of fire, use full protective gear and a self-contained breathing apparatus.

#### **6: Accidental Release Measures**

Spills from aerosols cans are unlikely and are generally of small volume. In case of actual spill or rupture wear full protective gear including self-contained breathing apparatus. Avoid possible contact with the material. Ventilate the area. Flammable liquid. Keep away from possible sources of ignition, heat and sparks. Stop the leakage if you can do it without risk. Absorb the chemical onto sand, vermiculite or absorption sleeves, scoop into containers for disposal, according to local regulations. Wash the spill area with water and soap.

#### **7. Handling and Storage**

Keep away from incompatible materials (see section 10).

Contains combustible gas. Keep away from sources of fire, sparks, static electricity, friction or any other heat source that may cause ignition.

Keep in ventilated area. In areas of storage and use, it is advisable that the electrical system will be adjusted to working in an explosive atmosphere. In areas of storage of gas cylinders or tanks, it is advisable to setup sprinklers system to cool the containers in case of fire. Do not pungent, or damage pressurized packages, even if it is small packages.

### Safety phrases:

Keep containers in a well-ventilated place.

Keep away from sources of ignition. NO SMOKING!

Do not breathe gas or fumes or spray.

Avoid contact with skin and eyes.

Wear suitable protective clothing.

Do not expose to temperatures exceeding 50°C. Store in a cool place.

Do not store in metal containers. Do not incinerate aerosol cans.

## **8: Exposure Control and Personal Protection**

**Thresholds:** Exposure limits (LPG)  
PEL-OSHA for 8 hours 1000 ppm (TWA)  
TLV-ACGIH for 8 hours 1000 ppm (TWA)  
REL-NIOSH for 8 hours 1000 ppm (TWA)

Exposure limits (Ethanol)  
PEL-OSHA for 8 hours 1000 ppm (TWA)  
TLV-ACGIH for 8 hours 1000 ppm (TWA)  
REL-NIOSH for 8 hours 1000 ppm (TWA)

Exposure limits (Methanol)  
PEL-OSHA for 8 hours 200 ppm (TWA) for short time 250 ppm (STEL), skin  
TLV-ACGIH for 8 hours 200 ppm (TWA) for short time 250 ppm (STEL), skin  
REL-NIOSH for 8 hours 200 ppm (TWA) for short time 250 ppm (STEL), skin

**Protective equipment:** Generally, personal protection is a function of exposure. It is recommended to use safety spectacles or goggles, working shoes, working clothes or lab coat. Working should be done in a well-ventilated area. In addition: mask and filter, full protective gear for corrosive material: protective cloth, boots, gloves and breathing apparatus- according to the level of exposure.

**In case of an emergency:** Full protective gear and a breathing apparatus should be used, according to the severity

## **9: Physical and Chemical Properties:**

**Boiling point °C:** 0-100 (liquid phase)

**Melting point °C:** <-10

**Molecular weight:** Mixture

**Density gr/cm<sup>3</sup>:** ~1

**Evaporation rate (Butyl acetate):** >1

**Vapor density (air=1):** >1

**Vapor pressure (mm Hg):** 2400 @ 20°C

**Solubility (in water):** Soluble

**pH:** 13.5 Basic

**Flash point °C:** -74 (LPG)

**LEL:** 1.8% (LPG) **UEL:** 8.4% (LPG)

## **10: Stability and Reactivity**

**Hazardous polymerization:** Will not occur.

**Chemical reactivity:** Extremely flammable. Easily ignites in contact with sources of heat, sparks or flame. Incompatible with strong oxidizing materials, acids and metal powder.

**Hazardous decomposition products:** On fire emits nitrous oxides, sulfur oxides and irritating fumes.

## **11: Toxicological Information**

For Ethanol:

LD50 (oral rat) 7060 mg/kg

LD50 (oral mouse) 3450 mg/kg

LDLo (oral human) 1400 mg/kg

LDLo (oral man) 700 mg/kg

For Methanol:

LD50 (oral rat) 5628 mg/kg

LD50 (dermal rabbit) 15800 mg/kg

LD50 (intraperitoneal rat) 75259 mg/kg

LC50 (inhalation rat) 64000 ppm (240 minutes)

For DMSO:

LD50 (oral rat) 14500 mg/kg

LD50 (oral mouse) 7920 mg/kg

LD50 (intraperitoneal rat) 8200 mg/kg

LD50 (intravenous rat) 5360 mg/kg

## **12: Ecological Information**

**Environmental hazards:** The gas (LPG) may affect the greenhouse effect. The material is slightly toxic to aquatic organisms.

**Biodegradability:** The gas (LPG) does not bioaccumulate. It slowly oxidizes in air. The liquid phase leaches in soil and may contaminate groundwater.

### **13: Disposal Considerations**

According to the Israeli regulations, a holder of this waste must evacuate it as soon as possible and not later than 6 months after the production of the waste, to the Ramat-Hovav waste site. The waste should be packed and transported according to the regulations. For packing group and transport classification of the waste refer to section 14.

According to the Israeli regulations, industrial spillage into the sewage system will not contain: any solid, liquid or gas, which may cause fire or explosion terms in the sewage system; Liquid which has level of pH below 6 or higher than 9. For additional information, check local regulations.

### **14: Transport Information**

**RID/ADR:** UN 1950; AEROSOL, containing flammable gas. Class 2.1

**UN recommendations:** UN 1950; AEROSOL, containing flammable gas. Class 2.1;  
**LABEL 'FLAMMABLE GAS'; HAZCHEM:** 2WE (ORANGE BOOK 12).

**IMCO:** UN 1950; AEROSOL, containing flammable gas. Class 2.1

Transport of flammable gas in quantity over 200 liters or kilograms, is subject to the Israeli transport law 1997, and transport regulations 2001.

### **15: Regulatory Information**

Listed in the Israeli Hazardous Material regulations under "Liquefied petroleum gas". This hazardous material, when in quantity less than 8000 kg is classified as Hazmat type B. According to the Israeli dangerous goods regulations of 1996 and dangerous goods law of 1993, holders of poison type A, or up to 40 type B hazardous materials are not subject to some of the regulations concerning toxic-permit and hazardous material registrations. For further details refer to the dangerous substances law and regulations.

For this material, no ejection regularity was found.

Ethanol is listed in the Israeli Hazardous Material regulations under "Ethanol".

This hazardous material, when in concentration below or equal to 80%, is classified as Hazmat type A.

This hazardous material, when in quantity less than 200 kg is classified as Hazmat type B. According to the Israeli dangerous goods regulations of 1996 and dangerous goods law of 1993, holders of poison type A, or up to 40 type B hazardous materials are not subject to some of the regulations concerning toxic-permit and hazardous material registrations. For further details refer to the dangerous substances law and regulations.

According to the agreement between the Ministry of the environment and the Israeli Industrial union concerning the emission of toxins to air, the material is classified as dangerous volatile organic compound of type C. Max permitted emission rate 3 kg/hour; Max permitted conc. 150 mg/m<sup>3</sup>.

Methanol is listed in the Israeli Hazardous Material regulations under "Alcohols, liquid". This hazardous material, when in quantity less than 100 kg is classified as Hazmat type B. According to the Israeli dangerous goods regulations of 1996 and dangerous goods law of 1993, holders of poison type A, or up to 40 type B hazardous materials are not subject to

some of the regulations concerning toxic-permit and hazardous material registrations. For further details refer to the dangerous substances law and regulations.

According to the agreement between the Ministry of the environment and the Israeli Industrial union concerning the emission of toxins to air, the material is classified as dangerous volatile organic compound of type C. Max permitted emission rate 3 kg/hour; Max permitted conc. 150 mg/m<sup>3</sup>.

Possession of flammable gas in quantity over 250 liters (water volume), requires from the holder to have an emergency plan, according to the Israeli business' license law and regulations of 1993.

## **16: Other Information**

Risk phrases: ***R12, R34, R36/37/38, R22***

Safety phrases: ***S09, S16, S23, S24/25, S36***

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The information herein is based on the present state of our knowledge. It is believed to be correct but is not necessarily all inclusive and shall be used only as a guide. Mistral Detection Ltd. and Haz-Mat Ltd. shall not be held liable for any damage resulting from handling or from contact with the above product. For further information, contact Mistral Detection Ltd, at the telephone given in the 1<sup>st</sup> section, or contact Haz-Mat at [hazmat@hazmat.co.il](mailto:hazmat@hazmat.co.il)