

# CYTOSPRAY

## MATERIAL SAFETY DATA SHEET



**Class A – Compressed gas**  
**Class B – Flammable material**  
**Class D2B – Toxic (No effects expected under normal conditions of use.)**

### SECTION 1 - PRODUCT INFORMATION

**Supplier:**

Pharmascience Inc.  
6111 Royalmount Avenue  
Montreal, Quebec, H4P 2T4  
1-(888) 550-6060

**Manufacturer:**

Assured Packaging Inc.  
6080 Vipond Drive  
Mississauga, Ontario, L5T-2V4  
(905) 565-1410

**Trade name:** Cytospray

**Chemical name:** Mixture of ethyl alcohol & isobutane

**Product use:** Water-soluble aerosol fixative for use in exfoliative cytology

**Formula number:** 020-401

**WHMIS classification:** A (compressed gas), B-5 (flammable aerosol), D2B (toxic – temporary effects)

### SECTION 2 - HAZARDOUS INGREDIENTS<sup>1</sup>

INGREDIENT	CAS #	PIN (UN)	% WEIGHT	EXPOSURE LIMITS (route, species)
ethyl alcohol (ethanol)	64-17-5	1170	40-50%	LD50: 14 g/kg (oral, rat) LD50: >20g/kg (dermal, rabbit) LC50: 21700 ppm 21.8hr (inhalation, rat) TLV: 1000 ppm
isobutane (methylpropane) (propellant)	75-28-5	1075	40-50%	The oral and dermal LD50 are not known. TLV: 1000 ppm

LD50 = Lethal dose in 50% of animals tested

LC50 = Lethal concentration in 50% of animals tested

TLV = Threshold limit values (the amount of chemicals in the air that almost all healthy adult workers are predicted to be able to tolerate without adverse effects averaged over an 8-hour workday/40 hour work week)

### SECTION 3 - PHYSICAL DATA<sup>1</sup>

The following physical data are approximate only and do not represent specification values. They should only be used in the context of this material safety data sheet.

**Physical state:** Mixture of liquid and propellants (gas)

**Appearance and odour:** Clear liquid, with alcohol odour

**Odour threshold (level at which it can be smelled):** N/A

**Specific gravity (water=1):** 0.710

**Vapour pressure (at 21°C):** 30-40 psig

Vapour density (air=1): >1  
Evaporation rate: < 1  
Boiling point (°C): N/A  
Freezing point: N/A  
pH: 6.0 - 7.0  
Coefficient of water/oil distribution: N/A  
Solubility in water (% by weight): 65%  
% volatile by volume: 95%

#### SECTION 4 - FIRE OR EXPLOSION HAZARD<sup>1</sup>

**WHMIS flammability classification:** Class B Division 5: flammable aerosol

**Flammability (determined by flame projection):**

- Zero cm (non-flammable)
- 0 - 15 cm (caution)
- 15 - 45 cm (warning)
- Over 45 cm (danger)

**Conditions of flammability:** Spraying near flames or arcs will ignite the spray mist.

**Means of extinction:** Dry chemical, CO<sub>2</sub>, foam, class B fire extinguisher. Water from fogging nozzles may be used to cool closed containers to prevent pressure build up if exposed to extreme temperatures.

**Flash point:** < -73 °C **Method used:** Estimated (propellant only)

The flash point is the lowest temperature at which a fuel-air mixture present above the surface of a liquid will ignite if an ignition source is introduced.

**Flammable limits in air (% by volume):** Lower: 1.8 - 2.2 Upper: 8.4 - 9.5

The Lower Flammable Limit (also known as the Lower Explosive Limit or LEL) is the minimum concentration of the fuel in the oxidizer (usually air) that is sufficient to allow burning to occur. Below the Lower Flammable Limit, the fuel-oxidizer mixture is too lean and no burning will occur. The Upper Flammable Limit (also known as the upper explosive limit or UEL) is the maximum concentration of the fuel in the oxidizer (usually air) that is sufficient to allow burning to occur. Above the Upper Flammable Limit, the fuel-oxidizer mixture is too rich and no burning will occur.

**Auto-ignition temperature:** N/A

**Hazardous combustion products:** Hydrocarbon fumes and smoke, CO, where combustion is incomplete

**Explosion data:**

Containers may explode if exposed to temperatures > 50°

**Sensitivity to shock:** Sensitive to shock, handle with care, do not drop.

**Sensitivity to static discharge:** Sensitive to static discharge.

#### SECTION 5 - REACTIVITY DATA<sup>1</sup>

**Chemical stability:** This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure. Hazardous polymerization will not occur. Avoid storage in hot, unventilated areas.

**Incompatibility:** May react with strong oxidizing agents, such as chlorates, nitrates, peroxides etc.

**Conditions of reactivity:** Avoid storage in hot, unventilated areas. Avoid shock, static discharge, & incompatibles.

**Hazardous decomposition products (combustion):** Hydrocarbon fumes and smoke, CO, where combustion is incomplete.

## SECTION 6 - TOXICOLOGICAL PROPERTIES<sup>1-4</sup>

### Possible routes of entry:

- Inhalation (breathing)
- Skin/eye contact (localized irritation)
- Skin/eye absorption (systemic) – minimal risk – product evaporates rapidly
- Ingestion (systemic) - unlikely

### Effects of acute exposure:

**Cytospray:** dizziness, nausea, irritation to skin and eyes.

*By individual component:*

**Ethanol:** Acute exposure to ethanol by inhalation can cause dizziness, nausea, and headache. Ethanol vapours may irritate the eyes, respiratory system and skin and cause shortness of breath.

**Isobutane:** Because it evaporates quickly, direct contact can cause local cooling of tissues, and possible frostbite. Acute exposure to isobutene by inhalation can cause irritation, nausea, dizziness, vomiting, and headache. Exposure to high concentrations can cause symptoms of asphyxiation (by displacement of air) including rapid breathing, rapid fatigue, excessive salivation, and disorientation and eventual fainting.

### Effects of chronic exposure:

**Ethanol:** Little or no systemic exposure is expected under normal conditions of use. Repeated contact to ethanol can irritate and dry the skin, with cracking, peeling and itching.

**Isobutane:** Little or no systemic exposure is expected under normal conditions of use.

**Exposure limits:** TWA: 1000ppm

**Irritancy of product:** May irritate the eyes, nose, throat, lungs and skin if exposed to high concentrations of vapours, or by direct contact.

**Sensitization to product:** Presently unknown

**Carcinogenicity of product:** Presently unknown

**Reproductive toxicity:** N/A

**Teratogenicity:** N/A

**Mutagenicity:** N/A

**Synergistic products:** Presently unknown

## SECTION 7 – PREVENTIVE MEASURES<sup>1</sup>

Recommendations listed in this section indicate the type of equipment, which will provide protection against over-exposure to this product. Conditions of use, adequacy of engineering or other control measures and actual exposures will dictate the need for specific protection devices at your workplace.

### PERSONAL PROTECTIVE EQUIPMENT (PPE):

**Protective gloves:** Not normally required

**Eye protection:** Not normally required

**Other protective equipment:** Not normally required

**Ventilation:** Mechanical, if used indoors on a continuous basis.

**Specific engineering controls to be used:** Provide mechanical ventilation if used indoors on a continuous basis.

**Steps to be taken in case material is released or spilled:** Remove all source of ignition. Use inert absorbent material and non-sparking to avoid breathing fumes. Ventilate area. Prevent from entering sewers, streams, or other bodies of water.

**Waste disposal method:** Dispose of in accordance with local, provincial and federal regulations.

**Handling procedures and equipment:** This material is considered stable under normal ambient and anticipated handling conditions of temperature and pressure. Avoid shock, static discharge, & strong oxidizing agents. No special equipment is required for handling.

**Storage requirements:** This material is considered stable under normal storage temperature and pressure conditions. Store in a cool, well-ventilated area not to exceed 50°C. Avoid shock, static discharge, & strong oxidizing agents.

Do not puncture or incinerate containers even when empty.

**Special shipping information:** Avoid storage in hot, unventilated areas. Avoid shock, static discharge, & incompatibles.  
**UN Product Identification Number (PIN) (Transportation of Dangerous Goods Act):** UN1950

## SECTION 8 – FIRST AID MEASURES<sup>1-4</sup>

No adverse effects are expected under normal conditions of use.

**Inhalation:** Remove patient to fresh air. Get medical attention immediately if showing symptoms of asphyxiation (rapid breathing, rapid fatigue, excessive salivation, and disorientation.)

**Skin contact:** Flush exposed skin and eyes with copious amounts of water (lukewarm). Get medical attention if significant irritation or frostbite occurs.

**Eye contact:** Flush exposed skin and eyes with copious amounts of water. Get medical attention immediately.

**Ingestion:** If ingested do not induce vomiting. Get medical attention immediately. Contact your local poison control centre.

## SECTION 9 – PREPARATION INFORMATION

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The above data are offered in good faith as typical values, not as a product specification. No warranty, either expressed or implied, is made. The recommended handling procedures are believed to be generally applicable. The information contained in this form is based on data from sources considered technically reliable and has been prepared in good faith in accordance with the available material. It is provided as a service to the persons using the product but conditions of use and handling may involve other and additional considerations beyond the control of Pharmascience Inc. Each user should review these recommendations in the specific context of intended use.

### References:

<sup>1</sup> Cytospray, Material safety data sheet. Assured Packaging. January 5, 2006

<sup>2</sup> Ethanol alcohol (absolute), Material safety data sheet. Sigma-Aldrich. May 24, 2004

<sup>3</sup> Isobutane, Material safety data sheet. Air Liquide Canada Inc. April 19, 2005

<sup>4</sup> Isobutane, Material safety data sheet. Aeropres Corporation. May, 2005