

# SAFETY DATA SHEET

29B Kripes Rd, E. Granby, CT 06026

Product Information: 800.922.9037

Emergency Assistance (CHEMTREC):

1.800.424.9300 (USA)

+1.703.527.3887 (INT)

Revision Date 19-Jan-2015

Version 2

## 1. Identification

**Product Name** CYTOCOOL II  
**Cat No. :** LPCTC  
**Synonyms** 1,1,1,2-Tetrafluoroethane; HFC 134a.  
**Recommended Use** Laboratory chemicals.  
**Uses advised against** No Information available  
**Details of the supplier of the safety data sheet**

**Company**  
LabPulse Medical  
29B Kripes Road  
East Granby, CT 06026  
Tel: 800-922-9037

**Emergency Telephone Number**  
Chemtrec US: (800) 424-9300  
Chemtrec EU: 001 (202) 483-7616

## 2. Hazard(s) identification

### Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Gases under pressure

### Label Elements

#### Signal Word

Warning

#### Hazard Statements

Contains gas under pressure; may explode if heated



#### Precautionary Statements

##### Storage

Protect from sunlight  
Store in a well-ventilated place

##### Disposal

Dispose of contents/container to an approved waste disposal plant

#### Hazards not otherwise classified (HNOC)

None identified

### 3. Composition / information on ingredients

Component	CAS-No	Weight %
1,1,1,2-Tetrafluoroethane	811-97-2	100

### 4. First-aid measures

<b>General Advice</b>	Immediate medical attention is not required. Show this safety data sheet to the doctor in attendance. No hazards which require special first aid measures.
<b>Eye Contact</b>	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Obtain medical attention. If eye irritation persists, consult a specialist.
<b>Skin Contact</b>	Wash off immediately with plenty of water for at least 15 minutes. Get medical attention immediately if symptoms occur.
<b>Inhalation</b>	Move to fresh air. If breathing is difficult, give oxygen. Get medical attention immediately if symptoms occur. Vapors are heavier than air and can cause suffocation by reducing oxygen available for breathing. Immediately give oxygen if victim turns blue (lips, ears, fingernails). If not breathing, give artificial respiration. Call a physician or Poison Control Center immediately.
<b>Ingestion</b>	Not an expected route of exposure. Do not induce vomiting. Obtain medical attention. Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Consult a physician if necessary.
<b>Most important symptoms/effects Notes to Physician</b>	No information available. Treat symptomatically

### 5. Fire-fighting measures

<b>Suitable Extinguishing Media</b>	Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
<b>Unsuitable Extinguishing Media</b>	No information available
<b>Flash Point</b>	Not applicable
<b>Method -</b>	No information available
<b>Autoignition Temperature</b>	395 °C / 743 °F
<b>Explosion Limits</b>	
<b>Upper</b>	No data available
<b>Lower</b>	No data available
<b>Sensitivity to Mechanical Impact</b>	No information available
<b>Sensitivity to Static Discharge</b>	No information available

#### Specific Hazards Arising from the Chemical

Cylinders exposed to fire may vent and release toxic and/or corrosive gas through pressure relief devices. Containers may explode when heated.

#### Hazardous Combustion Products

Hydrogen fluoride Thermal decomposition can lead to release of irritating gases and vapors

#### Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

#### NFPA

**Health**  
2

**Flammability**  
1

**Instability**  
0

**Physical hazards**  
N/A

## 6. Accidental release measures

<b>Personal Precautions</b>	Use personal protective equipment. Ensure adequate ventilation. Avoid contact with skin, eyes and clothing.
<b>Environmental Precautions</b>	Should not be released into the environment. Prevent further leakage or spillage if safe to do so. See Section 12 for additional ecological information.
<b>Methods for Containment and Clean Up</b>	Provide adequate ventilation. Prevent further leakage or spillage if safe to do so.

## 7. Handling and storage

<b>Handling</b>	Wear personal protective equipment. Ensure adequate ventilation. Avoid breathing dust/fume/gas/mist/vapours/spray. Avoid contact with skin, eyes and clothing. Contents under pressure. Keep away from open flames, hot surfaces and sources of ignition. Keep away from acids.
<b>Storage</b>	Store in cool/well-ventilated place. Keep away from heat and sources of ignition. Keep out of the reach of children. Keep containers tightly closed in a dry, cool and well-ventilated place.

## 8. Exposure controls / personal protection

<b><u>Exposure Guidelines</u></b>	This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.
<b>Engineering Measures</b>	Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.
<b><u>Personal Protective Equipment</u></b>	
<b>Eye/face Protection</b>	Avoid contact with eyes. Tightly fitting safety goggles.
<b>Skin and body protection</b>	Lightweight protective clothing.
<b>Respiratory Protection</b>	Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.
<b>Hygiene Measures</b>	Handle in accordance with good industrial hygiene and safety practice. Keep away from food, drink and animal feeding stuffs. When using, do not eat, drink or smoke. Keep working clothes separately.

## 9. Physical and chemical properties

<b>Physical State</b>	Gas
<b>Appearance</b>	Clear
<b>Odor</b>	Petroleum distillates
<b>Odor Threshold</b>	No information available
<b>pH</b>	No information available
<b>Melting Point/Range</b>	No data available
<b>Boiling Point/Range</b>	-26.5 °C / -15.7 °F
<b>Flash Point</b>	Not applicable
<b>Evaporation Rate</b>	No information available
<b>Flammability (solid,gas)</b>	No information available
<b>Flammability or explosive limits</b>	
Upper	No data available
Lower	No data available
<b>Vapor Pressure</b>	96 psia @ 25 °C

Vapor Density	3.6 @ 25 °C
Relative Density	1.21 (H <sub>2</sub> O=1)
Solubility	Insoluble in water
Partition coefficient; n-octanol/water	No data available
Autoignition Temperature	395 °C / 743 °F
Decomposition Temperature	No information available
Viscosity	No information available
Molecular Formula	CH <sub>2</sub> FCF <sub>3</sub>
Molecular Weight	102.0076

## 10. Stability and reactivity

<b>Reactive Hazard</b>	None known, based on information available
<b>Stability</b>	Stable under normal conditions.
<b>Conditions to Avoid</b>	Incompatible products. Heat, flames and sparks. Temperatures above 52°C.
<b>Incompatible Materials</b>	Strong oxidizing agents, Metals
<b>Hazardous Decomposition Products</b>	Hydrogen fluoride, Thermal decomposition can lead to release of irritating gases and vapors
<b>Hazardous Polymerization</b>	Hazardous polymerization does not occur.
<b>Hazardous Reactions</b>	None under normal processing.

## 11. Toxicological information

### Acute Toxicity

#### Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
1,1,1,2-Tetrafluoroethane	Not listed	Not listed	1500 g/m <sup>3</sup> ( Rat ) 4 h

**Toxicologically Synergistic Products** No information available

### Delayed and immediate effects as well as chronic effects from short and long-term exposure

**Irritation** No information available

**Sensitization** No information available

**Carcinogenicity** The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	CAS-No	IARC	NTP	ACGIH	OSHA	Mexico
1,1,1,2-Tetrafluoroethane	811-97-2	Not listed	Not listed	Not listed	Not listed	Not listed

**Mutagenic Effects** No information available

**Reproductive Effects** Experiments have shown reproductive toxicity effects on laboratory animals.

**Developmental Effects** No information available.

**Teratogenicity** Teratogenic effects have occurred in experimental animals.

**STOT - single exposure** None known

**STOT - repeated exposure** None known

**Aspiration hazard** No information available

**Symptoms / effects, both acute and delayed** No information available

<b>Endocrine Disruptor Information</b>	No information available
<b>Other Adverse Effects</b>	Tumorigenic effects have been reported in experimental animals. See actual entry in RTECS for complete information.

## 12. Ecological information

### Ecotoxicity

No information available.

<b>Persistence and Degradability</b>	No information available
<b>Bioaccumulation/ Accumulation</b>	No information available.
<b>Mobility</b>	No information available.

## 13. Disposal considerations

<b>Waste Disposal Methods</b>	Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.
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## 14. Transport information

### DOT

<b>UN-No</b>	UN3159
<b>Proper Shipping Name</b>	1,1,1,2-TETRAFLUOROETHANE
<b>Hazard Class</b>	2.2

### TDG

<b>UN-No</b>	UN3159
<b>Proper Shipping Name</b>	1,1,1,2-TETRAFLUOROETHANE
<b>Hazard Class</b>	2.2

### IATA

<b>UN-No</b>	UN3159
<b>Proper Shipping Name</b>	1,1,1,2-TETRAFLUOROETHANE
<b>Hazard Class</b>	2.2

### IMDG/IMO

<b>UN-No</b>	UN3159
<b>Proper Shipping Name</b>	1,1,1,2-TETRAFLUOROETHANE
<b>Hazard Class</b>	2.2

## 15. Regulatory information

**All of the components in the product are on the following Inventory lists:** Australia X = listed China Canada The product is classified and labeled according to EC directives or corresponding national laws The product is classified and labeled in accordance with Directive 1999/45/EC Europe TSCA Korea Philippines Japan

### International Inventories

Component	TSCA	DSL	NDSL	EINECS	ELINCS	NLP	PICCS	ENCS	AICS	IECSC	KECL
1,1,1,2-Tetrafluoroethane	X	X	-	212-377-0	-		X	X	X	X	X

#### Legend:

X - Listed

E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.

F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.

N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated

polymer made with any free-radical initiator regardless of the amount used.

P - Indicates a commenced PMN substance

R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.

S - Indicates a substance that is identified in a proposed or final Significant New Use Rule

T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.

XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B)).

Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.

Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

### U.S. Federal Regulations

#### TSCA 12(b)

SARA 313 Not applicable

#### SARA 311/312 Hazardous Categorization

Acute Health Hazard	Yes
Chronic Health Hazard	No
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

Clean Water Act Not applicable

Clean Air Act Not applicable

OSHA Occupational Safety and Health Administration  
Not applicable

#### CERCLA

Not applicable

California Proposition 65 This product does not contain any Proposition 65 chemicals

State Right-to-Know Not applicable

#### U.S. Department of Transportation

Reportable Quantity (RQ):	N
DOT Marine Pollutant	N
DOT Severe Marine Pollutant	N

#### U.S. Department of Homeland Security

This product does not contain any DHS chemicals.

### Other International Regulations

Mexico - Grade No information available

#### Canada

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR

WHMIS Hazard Class

A Compressed gases  
D2B Toxic materials**16. Other information**

Revision Date

19-Jan-2015

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**End of Safety Data Sheet**