



# MATERIAL SAFETY DATA SHEET

## CLEAN SHOT SYSTEM FLUSH

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### SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

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Emergency Call Chemtrec: 1.800.424.9300 Anytime

**Manufacturer:**

ICOR International, Inc.  
10640 East 59th Street  
Indianapolis, IN 46236

**Product: Clean Shot System Flush**

**Product Information Call:** 1.800.497.6805 M-F 7:30 am -4:30 pm ET

**Product Use:** Internal Refrigerant Pipe Flush

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### SECTION 2 - COMPOSITION

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Material Ingredients	CAS Number	Content %
1,1,1,2,3,4,4,5,5,5-decafluoropentane	138495-42-8	10-30
pentafluorobutane	406-58-6	30-60
trans-dichloroethylene	156-60-5	30-60
1,1,1,2-tetrafluoroethane	811-97-2	15-25

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### SECTION 3 - HAZARDS IDENTIFICATION

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**Emergency Overview:**

Colorless liquid. Slight ether odor. This product is not flammable. Liquid may irritate the skin, eyes and the respiratory tract. Gas or vapor displaces oxygen (asphyxiate). This product must not be used in a confined space without good ventilation. Keep out of the reach of children.

**Environment:**

This product contains a substance which is harmful to aquatic organisms and which may cause long term adverse effects in the aquatic environment.

**Physical and Chemical Hazards:**

Vapors are heavier than air and may travel along the floor and in the bottom of containers. Gas and vapor displaces oxygen (asphyxiate).

**Inhalation:** Vapors may irritate the respiratory system and cause coughing, asthmatic breathing and breathlessness.

**Ingestion:** May cause stomach pain or vomiting. May cause nausea, headache, dizziness and intoxication.

**Skin contact:** Acts as a defatting agent on skin. May cause cracking of skin and eczema.

**Eye contact:** May cause temporary eye irritation.

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#### **SECTION 4 - FIRST AID MEASURES**

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**Eyes:** Remove any contact lenses before flushing with water for 15 minutes and lifting eye lids. Get medical attention.

**Inhalation:** Move into fresh air and keep at rest. Get medical attention.

**Ingestion:** Do not induce vomiting. Get medical attention.

**Skin contact:** Flush skin with soap and water. Remove clothing if penetrated and flush skin with water. Contact physician if irritation continues.

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#### **SECTION 5 - FIRE FIGHTING MEASURES**

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**Extinguishing Media:** This product is non flammable. Use fire extinguishing media appropriate for surrounding materials.

**Special Fire Fighting procedures:** Containers generate pressure when heated causing violent bursting and dangerous propelling of container. Remove immediately or cool with water.

**Flammability limits:** Upper limit No Data      Lower limit No Data

**Flammability Class:** Non Flammable

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#### **SECTION 6 - ACCIDENTAL RELEASE MEASURES**

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**Personal:** Warn everybody of potential hazards and evacuate area. Ventilate area, avoid breathing vapors. Use approved respirator if air contamination is above accepted level.

**Environmental Precautions:** Contain spillages with sand, earth or ant suitable absorbent material.

**Spill Clean Up Methods:** Large quantities should not be discharged into any drain but removed with absorbing material. Dispose of large amounts of spillage/waste according to agreement with local authorities.

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#### **SECTION 7 - HANDLING AND STORAGE**

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**Handling:** Provide good ventilation. Avoid inhalation of vapors/spray and contact with skin. Avoid prolonged contact with eyes, skin or clothing. Wash thoroughly after handling.

**Storage:** Store in closed original container in a dry, cool and well-ventilated place. Keep away from children.

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**SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION**

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**Engineering Measures:** No specific ventilation requirements noted, except this product not be used in a confined space without good ventilation.

**Respiratory Equipment:** Working in confined or poorly ventilated spaces, respiratory protection with air supply must be used. Self contained breathing apparatus with full face shield.

**Hand Protection:** Rubber gloves

**Eye Protection:** Chemical approved face shield

**Clothing:** Wear suitable protective clothing as protection against splashing.

	<u>Exposure</u>	
	<u>TLV</u>	<u>PEL</u>
1,1,1,2,3,4,4,5,5,5-decafluoropentane	None Established	None Established AEL: 200 ppm, 8 & 12 hr. TLV 400 ppm ceiling
pentafluorobutane	None Established	None Established AEL 200 ppm TWA
trans-dichloroethylene	200 ppm STEL, 8 hr. TWA	200 ppm, 790 mg/m <sup>3</sup> , 8 hour TWA. AEL: 200 ppm 8 & 12 hour TWA
1,1,1,2-tetrafluoroethane	1000 ppm TWA	1000 ppm STEL AEL: 1000 ppm TWA

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**SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES**

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**Physical Form:** Liquid

**Color:** Clear

**Odor:** Slight odor ether

**Volatility Description:** Volatile

**Solubility:** Slightly H<sub>2</sub>O soluble

**Flammability:** Not flammable

**Boiling Point:** No Data

**Vapor Density:** No Data

**Vapor Pressure:** 12 psi @ 66 °F/19 °C

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**SECTION 10 - STABILITY AND REACTIVITY**

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**Stability:** Stable under normal temperatures conditions and recommended use.

**Conditions to Avoid:** Avoid contact with flames and hot surfaces as corrosive and toxic decomposition can be formed.

**Hazardous Polymerization:** Will not occur.

**Materials to Avoid:** Alkali metals. Alkali earth metals. Powered metal.

**Decomposition Products:** When heated toxic and corrosive vapors/gases may be formed.

Halogenated hydrocarbons. Hydrogen fluoride (HF). Carbon dioxide (CO<sub>2</sub>). Carbon monoxide (CO)

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**SECTION 11 - TOXICOLOGICAL INFORMATION**

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## 1,1,1,2,3,4,4,5,5,5-decafluoropentane

Toxic Dose1 - LD 50	>5000 mg/kg (oral rat)
Toxic Dose 2 - LD50	NA
Toxic Conc. - LC 50	11100 ppm/4 hr (inh-rat)

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## pentafluorobutane

Toxic Dose1 - LD 50	>2000 mg/kg (oral rat)
Toxic Dose 2 - LD50	NA
Toxic Conc. - LC 50	25000 ppm/4 hr (inh-rat)

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## tran-dichloroethylene

Toxic Dose1 - LD 50	1235 mg/kg (oral rat)
Toxic Dose 2 - LD50	>5000 mg/kg (oral rbt)
Toxic Conc. - LC 50	24100 ppm/4 hr (inh-rat)

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## 1,1,1,2-tetrafluoroethane

LC <sub>50</sub> : 4 hr (rat)	>769000 ppm
NOEL	75000 ppm

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**SECTION 12 - ECOLOGICAL INFORMATION**

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## 1,1,1,2,3,4,4,5,5,5-decafluoropentane

LC50-96 hr-Fish-27.2 mg/L
IC50-72hr-Alge-120 mg/L
LC50-48hr-Daphnia magan-11.7 mg/L

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## pentafluorobutane

LC50-96hr-Fish->200 mg/L
EC50-48hr-Daphnia magan->200 mg/L
IC50-72hr-Alge-113 mg/L

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## tran-dichloroethylene

LC50-96hr-Bluegill-1350 mg/L
LC50-48hr-Daphnia magan-200 mg/L

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## 1,1,1,2-tetrafluoroethane

LC50-96hr-Rainbow Trout-450 mg/L
Log P <sub>ow</sub> = 1.06

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**SECTION 13 - DISPOSAL CONSIDERATIONS**

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Dispose of waste and residues in accordance with federal, state and local regulations.

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**SECTION 14 - TRANSPORTATION INFORMATION**

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**Special shipping information:** None

**DOT:** UN Number 1956 Hazard Class 2.2

**IMO:** No Data

**ICAO:** No Data

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**SECTION 15 - REGULATORY INFORMATION**

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**WHMIS:** Class A

**SARA Title III:** Acute Yes; Chronic No

**Regulatory Status:** Section 313: This product does not contain toxic chemical subject to the reporting requirements of section 313 of the title III of the SARA of 1986

and 40 CFR part 372. TSCA: The ingredients of this product are on the TSCA inventory.

**Regulatory References:** 29 CFR 1910.1010 federal regulations (OSHA Standard). NFPA30 flammable and combustible liquids code.

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**SECTION 16 - OTHER INFORMATION**

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**HMIS Classification:** Health - 1, Flammability - 0, Reactivity - 1, Personal Protection - D

**Revision Date:** 10/31/2011

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**DISCLAIMER**

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The information contained in this MSDS pertains only to the specific material designated herein and does not relate to use in combination with other materials. This information is offered in good faith. No warranty, either expressed or implied, as to suitability to application is hereby made. The recommended industrial hygiene and safe handling procedures are believed to be reliable. Each user should review these recommendations in the specific context of the intended use and determine whether they are appropriate. These recommendations are not intended to supersede state or local safety codes and procedures. The information contained herein is subject to revision without notification as additional knowledge and experience is gained.