Material Safety Data Sheet

Creation Date 11-Jan-2010 **Revision Date** 11-Jan-2010 **Revision Number** 1

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name **1,1,1-Trichloroethane, stabilized**

Cat No. **AC327940000; AC327940010**

Synonyms Methylchloroform

Recommended Use Laboratory chemicals

Company
Fisher Scientific
One Reagent Lane
Fair Lawn, NJ 07410
Tel: (201) 796-7100

Entity / Business Name
Acros Organics
One Reagent Lane
Fair Lawn, NJ 07410

Emergency Telephone Number
For information in the US, call: 800-ACROS-01
For information in Europe, call: +32 14 57 52 11

Emergency Number, Europe: +32 14 57 52 99
Emergency Number, US: 201-796-7100

CHEMTREC Phone Number, US: 800-424-9300
CHEMTREC Phone Number, Europe: 703-527-3887

2. HAZARDS IDENTIFICATION

WARNING!

Emergency Overview

Possible cancer hazard. May cause cancer based on animal data. Harmful if swallowed. Irritating to eyes and skin. Inhalation may cause central nervous system effects. May cause irritation of respiratory tract. Aspiration hazard if swallowed - can enter lungs and cause damage.

Appearance Colorless **Physical State** Liquid **odor** sweet

Target Organs Liver, Kidney, Central nervous system (CNS), Cardiovascular system, Lungs, Eyes, Skin

Potential Health Effects

Acute Effects
Principle Routes of Exposure

Eyes	Irritating to eyes.
Skin	Irritating to skin. May be harmful in contact with skin.
Inhalation	May cause irritation of respiratory tract. May be harmful if inhaled. Inhalation may cause central nervous system effects.
Ingestion	Harmful if swallowed. Aspiration hazard. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Chronic Effects Possible cancer hazard based on tests with laboratory animals. Tumorigenic effects have been reported in experimental animals.. Experiments have shown reproductive toxicity effects on laboratory animals. May cause adverse liver effects. May cause adverse kidney effects.

See Section 11 for additional Toxicological information.

Aggravated Medical Conditions Central nervous system disorders. Preexisting eye disorders. Kidney disorders. Liver disorders. Skin disorders.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Haz/Non-haz

Component	CAS-No	Weight %
1,1,1-Trichloroethane	71-55-6	>90
1,4-Dioxane	123-91-1	5-6

4. FIRST AID MEASURES

Eye Contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Obtain medical attention.

Skin Contact Wash off immediately with plenty of water for at least 15 minutes. Obtain medical attention.

Inhalation Move to fresh air. If breathing is difficult, give oxygen. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with a respiratory medical device. Obtain medical attention.

Ingestion Do not induce vomiting. Call a physician or Poison Control Center immediately.

Notes to Physician Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Flash Point	No information available.
Method	No information available.
Autoignition Temperature	458°C / 856.4°F
Explosion Limits	
Upper	15.5 vol %
Lower	8.0 vol %
Suitable Extinguishing Media	Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Unsuitable Extinguishing Media	No information available.
Hazardous Combustion Products	No information available.
Sensitivity to mechanical impact	No information available.
Sensitivity to static discharge	No information available.

Specific Hazards Arising from the Chemical
Keep product and empty container away from heat and sources of ignition

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. Thermal decomposition can lead to release of irritating gases and vapors.

NFPA	**Health** 2	**Flammability** 1	**Instability** 0	**Physical hazards** N/A

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions	Use personal protective equipment. Ensure adequate ventilation.
Environmental Precautions	Should not be released into the environment.
Methods for Containment and Clean Up	Soak up with inert absorbent material. Keep in suitable and closed containers for disposal.

7. HANDLING AND STORAGE

Handling	Use only under a chemical fume hood. Wear personal protective equipment. Do not breathe vapors or spray mist. Do not ingest. Avoid contact with skin, eyes and clothing.
Storage	Keep containers tightly closed in a dry, cool and well-ventilated place.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Measures Use only under a chemical fume hood. Ensure that eyewash stations and safety showers are close to the workstation location.

Exposure Guidelines

Component	ACGIH TLV	OSHA PEL	NIOSH IDLH
1,1,1-Trichloroethane	TWA: 350 ppm STEL: 450 ppm	(Vacated) TWA: 350 ppm (Vacated) TWA: 1900 mg/m^3 (Vacated) STEL: 450 ppm (Vacated) STEL: 2450 mg/m^3 TWA: 1900 mg/m^3 TWA: 350 ppm	IDLH: 700 ppm Ceiling: 350 ppm Ceiling: 1900 mg/m^3
1,4-Dioxane	TWA: 20 ppm Skin	(Vacated) TWA: 25 ppm (Vacated) TWA: 90 mg/m^3 Skin TWA: 100 ppm TWA: 360 mg/m^3	IDLH: 500 ppm Ceiling: 3.6 mg/m^3 Ceiling: 1 ppm

Component	Quebec	Mexico OEL (TWA)	Ontario TWAEV
1,1,1-Trichloroethane	TWA: 1910 mg/m^3 TWA: 350 ppm STEL: 2460 mg/m^3 STEL: 450 ppm	TWA: 1900 mg/m^3 TWA: 350 ppm STEL: 2460 mg/m^3 STEL: 450 ppm	TWA: 1910 mg/m^3 TWA: 350 ppm STEL: 2455 mg/m^3 STEL: 450 ppm
1,4-Dioxane	TWA: 20 ppm TWA: 72 mg/m^3 Skin	TWA: 25 ppm TWA: 90 mg/m^3 STEL: 100 ppm STEL: 360 mg/m^3	TWA: 20 ppm Skin

NIOSH IDLH: *Immediately Dangerous to Life or Health*

Personal Protective Equipment

Eye/face Protection Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166

Skin and body protection Wear appropriate protective gloves and clothing to prevent skin exposure.

Respiratory Protection 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.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Liquid
Appearance	Colorless
odor	sweet
Odor Threshold	No information available.
pH	Not applicable
Vapor Pressure	100 mmHg @ 20°C
Vapor Density	4.55 (Air = 1.0)
Viscosity	0.86 mPa.s @ 20 °C
Boiling Point/Range	74 - 76°C / 165.2 - 168.8°F
Melting Point/Range	-33°C / -27.4°F
Decomposition temperature	95 °C
Flash Point	No information available.
Evaporation Rate	(Carbon Tetrachloride = 1.0)
Specific Gravity	1.33

9. PHYSICAL AND CHEMICAL PROPERTIES

Solubility	Insoluble in water
log Pow	No data available
Molecular Weight	133.4
Molecular Formula	C2 H3 Cl3

10. STABILITY AND REACTIVITY

Stability	Stable under normal conditions.
Conditions to Avoid	Incompatible products. Excess heat.
Incompatible Materials	Strong oxidizing agents
Hazardous Decomposition Products	Carbon monoxide (CO), Carbon dioxide (CO_2), Hydrogen chloride gas
Hazardous Polymerization	Hazardous polymerization does not occur
Hazardous Reactions .	None under normal processing..

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
1,1,1-Trichloroethane	2000 mg/kg (Rat)	15800 mg/kg (Rabbit) 2000 mg/kg (Rat)	18000 ppm (Rat) 4 h
1,4-Dioxane	4200 mg/kg (Rat)	7600 mg/kg (Rabbit)	48.5 mg/L (Rat) 4 h

Irritation	Irritating to eyes and skin
Toxicologically Synergistic Products	No information available.

Chronic Toxicity

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

Component	ACGIH	IARC	NTP	OSHA	Mexico
1,1,1-Trichloroethane	Not listed	Group 3	Not listed	Not listed	Not listed
1,4-Dioxane	A3	Group 2B	Reasonably Anticipated	X	Not listed

ACGIH: (American Conference of Governmental Industrial Hygienists)
A1 - Known Human Carcinogen
A2 - Suspected Human Carcinogen
A3 - Animal Carcinogen
ACGIH: (American Conference of Governmental Industrial Hygienists)

IARC: (International Agency for Research on Cancer)
IARC: (International Agency for Research on Cancer)
Group 1 - Carcinogenic to Humans
Group 2A - Probably Carcinogenic to Humans
Group 2B - Possibly Carcinogenic to Humans
NTP: (National Toxicity Program)
NTP: (National Toxicity Program)
Known - Known Carcinogen
Reasonably Anticipated - Reasonably Anticipated to be a Human Carcinogen

Sensitization No information available.

Mutagenic Effects No information available.

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

Developmental Effects Developmental effects have occurred in experimental animals.

Teratogenicity Teratogenic effects have occurred in experimental animals..

Other Adverse Effects Tumorigenic effects have been reported in experimental animals.. See actual entry in RTECS for complete information.

Endocrine Disruptor Information No information available

12. ECOLOGICAL INFORMATION

Ecotoxicity

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Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
1,1,1-Trichloroethane	EC50 >669 mg/L/96h	Not listed	EC50 = 105 mg/L 5 min	EC50 >530 mg/L 48h EC50: 2384 mg/L 48h
1,4-Dioxane	Not listed	Not listed	EC50 = 610 mg/L 5 min EC50 = 668 mg/L 15 min EC50 = 733 mg/L 30 min	EC50 = 163 mg/L 48h

Persistence and Degradability No information available

Bioaccumulation/ Accumulation No information available

Mobility .

Component	log Pow
1,1,1-Trichloroethane	2.46
1,4-Dioxane	-0.42

13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods 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.

Component	RCRA - U Series Wastes	RCRA - P Series Wastes
1,1,1-Trichloroethane - 71-55-6	U226	-
1,4-Dioxane - 123-91-1	U108	-

14. TRANSPORT INFORMATION

DOT

UN-No	UN2831
Proper Shipping Name	1,1,1-Trichloroethane
Hazard Class	6.1
Packing Group	III

TDG

UN-No	UN2831
Proper Shipping Name	1,1,1-TRICHLOROETHANE
Hazard Class	6.1
Packing Group	III

IATA

UN-No	UN2831
Proper Shipping Name	1,1,1-Trichloroethane (Mixture)
Hazard Class	6.1
Packing Group	III

IMDG/IMO

UN-No	UN2831
Proper Shipping Name	1,1,1-Trichloroethane (Mixture)
Hazard Class	6.1
Packing Group	III

15. REGULATORY INFORMATION

International Inventories

Component	TSCA	DSL	NDSL	EINECS	ELINCS	NLP	PICCS	ENCS	AICS	CHINA	KECL
1,1,1-Trichloroethane	X	X	-	200-756-3	-		X	X	X	X	KE-34068 X
1,4-Dioxane	X	X	-	204-661-8	-		X	X	X	X	KE-10463 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) Not applicable

SARA 313

Component	CAS-No	Weight %	SARA 313 - Threshold Values %
1,1,1-Trichloroethane	71-55-6	>90	1.0
1,4-Dioxane	123-91-1	5-6	0.1

SARA 311/312 Hazardous Categorization

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

Clean Water Act

Component	CWA - Hazardous Substances	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants
1,1,1-Trichloroethane	-	-	X	X

Clean Air Act

Component	HAPS Data	Class 1 Ozone Depletors	Class 2 Ozone Depletors
1,1,1-Trichloroethane	X	X	-
1,4-Dioxane	X		-

OSHA
Not applicable

CERCLA
This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Component	Hazardous Substances RQs	CERCLA EHS RQs
1,1,1-Trichloroethane	1000 lb	-
1,4-Dioxane	100 lb	-

California Proposition 65
This product contains the following Proposition 65 chemicals:

Component	CAS-No	California Prop. 65	Prop 65 NSRL
1,4-Dioxane	123-91-1	Carcinogen	30 µg/day

State Right-to-Know

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
1,1,1-Trichloroethane	X	X	X	X	X
1,4-Dioxane	X	X	X	X	X

U.S. Department of Transportation

Reportable Quantity (RQ): Y
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
D1B Toxic materials
D2A Very toxic materials
D2B Toxic materials

16. OTHER INFORMATION

Prepared By Regulatory Affairs
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Revision Summary "***", and red text indicates revision

Disclaimer

The information provided on this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

End of MSDS