Material Safety Data Sheet

1,1,1-Trichloroethane, stabilized, electronic grade, residue free, 99+%, stabilized

ACC# 99471

Section 1 - Chemical Product and Company Identification

MSDS Name: 1,1,1-Trichloroethane, stabilized, electronic grade, residue free, 99+%, stabilized
Catalog Numbers: AC327940000, AC327942500
Synonyms: Methylchloroform
Company Identification:

Acros Organics N.V.
One Reagent Lane
Fair Lawn, NJ 07410

For information in North America, call: 800-ACROS-01
For emergencies in the US, call CHEMTREC: 800-424-9300

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
71-55-6	1,1,1-Trichloroethane	>99	200-756-3

Hazard Symbols: XN N
Risk Phrases: 20 59

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: colourless clear liquid. Hygroscopic.
Target Organs: Kidneys, central nervous system, liver, lungs, cardiovascular system, eyes, skin.

Potential Health Effects

Eye: Causes severe eye irritation. Contact with eyes may cause severe irritation, and possible eye burns. Vapors may cause eye irritation. Causes redness and pain. Lachrymator (substance which increases the flow of tears).
Skin: Causes moderate skin irritation. Causes redness and pain.
Ingestion: May cause headache. May cause nausea and vomiting.
Inhalation: Harmful if inhaled. Inhalation of high concentrations may cause central nervous system effects characterized by nausea, headache, dizziness, unconsciousness and coma. High vapor concentrations may cause drowsiness. May cause dizziness, incoordination, and unconsciousness.
Chronic: Prolonged or repeated skin contact may cause defatting and dermatitis. May cause liver and kidney damage. Prolonged exposure may produce a narcotic effect. May cause lung damage.

Section 4 - First Aid Measures

Eyes: Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.
Skin: Get medical aid. Flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes.
Ingestion: Never give anything by mouth to an unconscious person. Possible aspiration hazard. Get medical aid. Wash mouth out with water.
Inhalation: Remove from exposure to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.
Notes to Physician: Because rapid absorption may occur through lungs if aspirated and caus e systemic effects,the decision of whether to induce vomiting or not s hould be made by a physician.If lavage is performed,suggest endotrache al and/or oesophageal control.Danger from lung aspiration must be weig hed against toxicity when considering emptying the stomach.Don´t give sympathomimetic drugs unless absolutely necessary.

Section 5 - Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Vapors may form an explosive mixture with air. Vapors can travel to a source of ignition and flash back. Wear appropriate protective clothing to prevent contact with skin and eyes. Wear a self-contained breathing apparatus (SCBA) to prevent contact with thermal decomposition products. Substance is noncombustible. Containers may explode in the heat of a fire.
Extinguishing Media: Use water spray to cool fire-exposed containers. Use water spray, dry chemical, carbon dioxide, or chemical foam.
Flash Point: 95 deg C (203.00 deg F)
Autoignition Temperature: 458 deg C (856.40 deg F)
Explosion Limits, Lower:7.5 vol %
Upper: 12.50 vol %
NFPA Rating: (estimated) Health: 2; Flammability: 1; Instability: 0

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.
Spills/Leaks: Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Provide ventilation.

Section 7 - Handling and Storage

Handling: Avoid breathing dust, vapor, mist, or gas. Avoid contact with skin and eyes.
Storage: Keep away from heat, sparks, and flame. Store in a cool, dry place. Store in a tightly closed container. Do not store in aluminum containers.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Use adequate ventilation to keep airborne concentrations low.
Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
1,1,1-Trichloroethane	350 ppm TWA; 450 ppm STEL	see Appendix C (Chlorethanes) for supplementary exposure limits 700 ppm IDLH	350 ppm TWA; 1900 mg/m3 TWA

OSHA Vacated PELs: 1,1,1-Trichloroethane: 350 ppm TWA; 1900 mg/m3 TWA; 450 ppm STEL; 2450 mg/m3 STEL
Personal Protective Equipment
Eyes: Wear chemical goggles.
Skin: Wear appropriate protective gloves to prevent skin exposure.
Clothing: Wear appropriate protective clothing to prevent skin exposure.
Respirators: Follow the OSHA respirator regulations found in 29CFR 1910.134 or European Standard EN 149. Always use a NIOSH or European Standard EN 149 approved respirator when necessary.

Section 9 - Physical and Chemical Properties

Physical State: Clear liquid
Appearance: colourless
Odor: Not available.
pH: Not available.
Vapor Pressure: Not available.
Vapor Density: 4.55 (Air=1)
Evaporation Rate: Not available.
Viscosity: 0.858 cP 20 deg C
Boiling Point: 74 - 76 deg C @ 760
Freezing/Melting Point:-33 deg C
Decomposition Temperature:95 deg C
Solubility: Insoluble.
Specific Gravity/Density:1.3000g/cm3
Molecular Formula: Not available.
Molecular Weight:133.40

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures.
Conditions to Avoid: High temperatures, incompatible materials, exposure to moist air or water.
Incompatibilities with Other Materials: Amides (e.g. butyramide, diethyltoluamide, dimethyl formamide), metals (alkali and alkaline, e.g. cesium, potassium, sodium), metals as powders (e.g. hafnium, raney nickel), strong oxidizing agents, aluminum, strong bases, magnesium, sodium, zinc, potassium.
Hazardous Decomposition Products: Hydrogen chloride, chlorine, phosgene, carbon monoxide, carbon dioxide.
Hazardous Polymerization: May occur.

Section 11 - Toxicological Information

RTECS#:
CAS# 71-55-6: KJ2975000
LD50/LC50:
CAS# 71-55-6:
Draize test, rabbit, eye: 100 mg Mild;
Draize test, rabbit, eye: 2 mg/24H Severe;
Draize test, rabbit, skin: 5 gm/12D (Intermittent) Mild;
Draize test, rabbit, skin: 20 mg/24H Moderate;
Inhalation, mouse: LC50 = 3911 ppm/2H;
Inhalation, rat: LC50 = 18000 ppm/4H;
Oral, mouse: LD50 = 6 gm/kg;
Oral, rabbit: LD50 = 5660 mg/kg;
Oral, rat: LD50 = 9600 mg/kg;
Carcinogenicity:
CAS# 71-55-6:
ACGIH: A4 - Not Classifiable as a Human Carcinogen
IARC: Group 3 carcinogen
Epidemiology: No data available.
Teratogenicity: Oral mice 100, 300 or 1000 kg/day in drinking water. Two generation study no adverse effects to any aspects of reproduction were evident. Oral rat 3, 10 or 30 mg/L drinking water 14 days prior to co-habitation and at least 13 days after, there were no adverse effects to reproductive parameters (George, J.D. et al Fundam. Appl. Toxicol. 1989, 13, 641-651).
Reproductive Effects: orl-rat TDLo: 43 mg/kg (1-22D preg)ihl-rat TCLo: 2100 ppm/6H (1-20D preg)Birth defects are unlikely. Exposures having an adverse effect on the mother should have no effect on the fetus. In animal studies, 1,1,1-trichloroethane has not interfered with reproduction.
Neurotoxicity: No data available.
Mutagenicity: Mutation:mmo-sat 10 ug/platednr-esc 500 mg/Lmmo-mus-lym 31300 ug/Lcyt-ham-ovr 160 mg/LEPA GENETOX PROGRAM 1988, Positive: Cell transform.-RLV F344 rat embryoEPA GENETOX PROGRAM 1988, Negative: Sperm morphology-mouseEPA GENETOX PROGRAM 1988, Inconclusive: Carcinogenicity-mouse/rat; Mammalian micronucleusEPA TSCA Section 8(b) CHEMICAL INVENTORYEPA TSCA 8(a) PRELIMINARY ASSESSMENT INFORMATION, FINAL RULE Federal Register. (U.S. Government Printing Office, Supt. of Documents, Washington, DC 20402) V.1-1936-Volume(issue)/page/year: 47,26992,82On EPA IRIS database
Other Studies: See actual entry in RTECS for complete information.

Section 12 - Ecological Information

Ecotoxicity: No data available. Fish toxicity:LC50 fathead minnow, sheepshead minnow, bluegill sunfish 53-72 mg/L/96H (Konemann, W.H. Quantitative structure-activity relationships for kinetics and toxicity of aquatic pollutants and their mixtures in fish 1979, Univ. Utrecht; Heitmuller, P.T. et al Bull. Environ. Contam. Toxicol. 1981, 27, 596-604; Buccafusco, R.J. et al Bull. Environ. Contam. Toxicol. 1981, 26, 446).Invertebrate toxicity:LC50 Daphnia magna >530 mg/L/48H (LeBlanc, G.A. Bull. Environ. Contam. Toxicol. 1980, 24, 684-691).
Environmental: Degradation studies:Biodegradation under aerobic conditions is below detectable limits. Biodegradation may occur under anaerobic conditions. Degradation is expected in the atmospheric environment within months to years.In soil collected from just above the groundwater table no aerobic degradation of 1 mg/L was measured (Wilson, J.T. et al Dev. Ind. Microbiol. 1983, 247, 125-233).
Physical: No information available.
Other: No information available.

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.
RCRA P-Series: None listed.
RCRA U-Series: CAS# 71-55-6: waste number U226.

Section 14 - Transport Information

	US DOT	IATA	RID/ADR	IMO	Canada TDG
Shipping Name:	No information available.				No information available.
Hazard Class:					
UN Number:					
Packing Group:					

Section 15 - Regulatory Information

US FEDERAL

TSCA
CAS# 71-55-6 is listed on the TSCA inventory.
Health & Safety Reporting List
CAS# 71-55-6: Effective Date: October 4, 1982; Sunset Date: October 4, 1992
Chemical Test Rules
None of the chemicals in this product are under a Chemical Test Rule.
Section 12b
None of the chemicals are listed under TSCA Section 12b.
TSCA Significant New Use Rule
None of the chemicals in this material have a SNUR under TSCA.
SARA

Section 302 (RQ)
CAS# 71-55-6: final RQ = 1000 pounds (454 kg)
Section 302 (TPQ)
None of the chemicals in this product have a TPQ.
SARA Codes
CAS # 71-55-6: acute.
Section 313
This material contains 1,1,1-Trichloroethane (CAS# 71-55-6, 99%),which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.
Clean Air Act:
CAS# 71-55-6 is listed as a hazardous air pollutant (HAP). CAS# 71-55-6 is listed as a Class 1 ozone depletor with an ODP = 0.1; GWP = 110; commodity code 2903.19.6010; essential use - cleaning, bon This material does not contain any Class 2 Ozone depletors.
Clean Water Act:

None of the chemicals in this product are listed as Hazardous Substances under the CWA. CAS# 71-55-6 is listed as a Priority Pollutant under the Clean Water Act. None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA:

None of the chemicals in this product are considered highly hazardous by OSHA.

STATE

CAS# 71-55-6 can be found on the following state right to know lists: California, New Jersey, Florida, Pennsylvania, Minnesota, Massachusetts.

California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols:

XN N

Risk Phrases:

R 20 Harmful by inhalation.
R 59 Dangerous for the ozone layer.

Safety Phrases:

S 24/25 Avoid contact with skin and eyes.
S 59 Refer to manufacturer/supplier for information on recovery/recycling.
S 61 Avoid release to the environment. Refer to special instructions/Safety data sheets.

WGK (Water Danger/Protection)

CAS# 71-55-6: 3

Canada - DSL/NDSL

CAS# 71-55-6 is listed on Canada's DSL List.

Canada - WHMIS

WHMIS: Not available.

Canadian Ingredient Disclosure List

CAS# 71-55-6 is listed on the Canadian Ingredient Disclosure List.

Exposure Limits

CAS# 71-55-6: OEL-AUSTRALIA:TWA 125 ppm (680 mg/m3) OEL-BELGIUM:TWA 350 ppm (1910 mg/m3);STEL 450 ppm (2460 mg/m3) OEL-CZECHOSLOVAKIA:TWA 500 mg/m3;STEL 2000 mg/m3 OEL-DENMARK:TWA 100 ppm (540 mg/m3) OEL-FINLAND:TWA 100 ppm (540 mg/m3);STEL 250 ppm (1400 mg/m3) OEL-FRANCE:TWA 300 ppm (1650 mg/m3);STEL 450 ppm (2500 mg/m3) OEL-GERMANY:TWA 200 ppm (1080 mg/m3) OEL-HUNGARY:TWA 100 mg/m3;STEL 300 mg/m3;Skin OEL-JAPAN:TWA 200 ppm (1100 mg/m3) OEL-THE NETHERLANDS:TWA 200 ppm (1080 mg/m3);STEL 500 ppm OEL-THE PHILIPPINES:TWA 350 ppm (1900 mg/m3) JAN 9 OEL-RUSSIA:TWA 200 ppm;STEL 20 mg/m3 OEL-SWEDEN:TWA 50 ppm (300 mg/m3);STEL 90 ppm (50 mg/m3) OEL-SWITZERLAND:TWA 200 ppm (1080 mg/m3); STEL 100 ppm OEL-TURKEY:TWA 350 ppm (1900 mg/m3) OEL-UNITED KINGDOM:TWA 350 ppm (1900 mg/m3);STEL 450 ppm OEL IN BULGARIA, COLOMBIA, JORDAN, KOREA check ACGIH TLV OEL IN NEW ZEALAND, SINGAPORE, VIETNAM check ACGI TLV

Section 16 - Additional Information

MSDS Creation Date: 2/18/1998
Revision #2 Date: 8/02/2000