Material Safety Data Sheet

Chloral hydrate, 98.5%

ACC# 01645

Section 1 - Chemical Product and Company Identification

MSDS Name: Chloral hydrate, 98.5%
Catalog Numbers: AC232470000, AC232470500, AC232475000
Synonyms: 1,1-Ethanediol,2,2,2-trichloro-; Trichloroacetaldehyde hydrate ; Trichloroacetaldehyde monohydrate; 1,1,1-Trichloro-2,2-dihydroxyethane; 1,1,1-Trichloro-2,2-ethanediol
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
302-17-0	Chloral hydrate	98.5	206-117-5

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: Transparent, Colorless Crystals.
Warning! Causes skin irritation and possible burns. Harmful if swallowed. Causes severe eye irritation and possible injury. Causes respiratory tract irritation and possible burns. May cause central nervous system depression. Air sensitive. Light sensitive. Hygroscopic (absorbs moisture from the air).
Target Organs: Central nervous system.

Potential Health Effects

Eye: Causes severe eye irritation and possible injury.
Skin: Causes skin irritation and possible burns.
Ingestion: Harmful if swallowed. Symptoms may include: headache, excitement, fatigue, nausea, vomiting, stupor, and coma. May cause central nervous system depression.
Inhalation: Inhalation of high concentrations may cause central nervous system effects characterized by nausea, headache, dizziness, unconsciousness and coma. Causes irritation

of mucous membrane. Causes respiratory tract irritation with possible burns.
Chronic: Chronic inhalation may cause effects similar to those of acute inhalation. Can be addictive. Effects may be delayed. Laboratory experiments have resulted in mutagenic effects. Experimental carcinogen.

Section 4 - First Aid Measures

Eyes: Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid imme diately.
Skin: Get medical aid immediately. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse.
Ingestion: Do not induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid immediately.
Inhalation: Get medical aid immediately. Remove from exposure and move to fresh air immediately. If breathing is difficult, give oxygen. Do NOT use mouth-to-mouth resuscitation. If breathing has ceased apply artificial respiration using oxygen and a suitable mechanical device such as a bag and a mask.
Notes to Physician: Effects may be delayed. Ingestion of large quantities of this material can depress the central nervous system. Stimulants may be useful in certain situations; however, a professional decision is required. Carefully evaluate respiratory status, provide an intravenous line, oxygen and a cardiac monitor. The use of activated charcoal is recommended over syrup of ipecac for treatment of ingestion.

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. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.
Extinguishing Media: Use agent most appropriate to extinguish fire. Use water spray, dry chemical, carbon dioxide, or appropriate foam.
Flash Point: Not available.
Autoignition Temperature: Not available.
Explosion Limits, Lower: Not available.
Upper: Not available.
NFPA Rating: (estimated) Health: 3; Flammability: 0; Instability: 0

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills / Leaks: Vacuum or sweep up material and place into a suitable disposal container. Avoid generating dusty conditions. Provide ventilation. Place under an inert atmosphere. Do not get water inside containers.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Use only in a well-ventilated area. Minimize dust generation and accumulation. Keep container tightly closed. Do not get on skin or in eyes. Do not ingest or inhale. Store protected from light. Handle under an inert atmosphere. Store protected from air. Wash clothing before reuse. Keep from contact with moist air and steam.
Storage: Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. Store protected from moisture. Store protected from light. Store under an inert atmosphere.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.
Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Chloral hydrate	none listed	none listed	none listed

OSHA Vacated PELs: Chloral hydrate: No OSHA Vacated PELs are listed for this chemical.
Personal Protective Equipment
Eyes: 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: Wear appropriate protective gloves to prevent skin exposure.
Clothing: Wear appropriate protective clothing to minimize contact with skin.
Respirators: 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.

Section 9 - Physical and Chemical Properties

Physical State: Crystals

Appearance: Transparent, Colorless Crystals
Odor: Slightly acrid
pH: Not available.
Vapor Pressure: Not available.
Vapor Density: Not available.
Evaporation Rate: Not applicable.
Viscosity: Not available.
Boiling Point: 97 deg C @ 760.00mmHg
Freezing/Melting Point:57 deg C
Decomposition Temperature:> 97 deg C
Solubility: Freely Soluble.
Specific Gravity/Density:1.9100g/cm3
Molecular Formula:C2H3Cl3O2
Molecular Weight:165.40

Section 10 - Stability and Reactivity

Chemical Stability: Air sensitive. Moisture sensitive. Sensitive to light.
Conditions to Avoid: Light, dust generation, exposure to air, excess heat, strong oxidants.
Incompatibilities with Other Materials: Alkalis, alkaline earth metals, alkali carbonates, soluble barbiturates, borax, tannin, iodides, permanganates, alcohols, strong oxidizing agents.
Hazardous Decomposition Products: Hydrogen chloride, carbon monoxide, carbon dioxide.
Hazardous Polymerization: Will not occur.

Section 11 - Toxicological Information

RTECS#:
CAS# 302-17-0: FM8750000
LD50/LC50:
CAS# 302-17-0:
Oral, mouse: LD50 = 1100 mg/kg;
Oral, rat: LD50 = 479 mg/kg;
Skin, rat: LD50 = 3030 mg/kg;
.
Oral, human: TDLo = 300 mg/kg (Central nervous system effects, Cardiovascular effects).;
Oral, woman: TDLo = 465 mg/kg (Eye effects, Blood pressure
Carcinogenicity:
CAS# 302-17-0: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

Epidemiology: No information available.
Teratogenicity: Oral, mouse: TDLo = 10 mg/kg (Liver, tumors).; Dermal, mouse: TDLo = 960 mg/kg/1W-I (Skin, tumors).
Reproductive Effects: Oral, mouse : TDLo = 13 g/kg (female 3W pre-3W post).

Mutagenicity: Micronucleus test: Human lymphocyte = 500 umol/L.; Sister chromatid exchange: Human lymphocyte = 54 mg/L.; Sex chromosome loss and nondisjunction: Human lymphocyte = 50 mg/L.; Micronuclues test: Hamster lung = 80 mg/L.; Morphological transformation: Hamster embryo = 1mg/L.
Neurotoxicity: No information available.
Other Studies:

Section 12 - Ecological Information

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: None listed.

Section 14 - Transport Information

	US DOT	Canada TDG
Shipping Name:	Not regulated as a hazardous material	No information available.
Hazard Class:		
UN Number:		
Packing Group:		

Section 15 - Regulatory Information

US FEDERAL

TSCA
CAS# 302-17-0 is listed on the TSCA inventory.
Health & Safety Reporting List
None of the chemicals are on the Health & Safety Reporting List.

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.

CERCLA Hazardous Substances and corresponding RQs

None of the chemicals in this material have an RQ.

SARA Section 302 Extremely Hazardous Substances

None of the chemicals in this product have a TPQ.

SARA Codes

CAS # 302-17-0: immediate, delayed.

Section 313 No chemicals are reportable under Section 313.

Clean Air Act:

This material does not contain any hazardous air pollutants.
This material does not contain any Class 1 Ozone depletors.
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.
None of the chemicals in this product are listed as Priority Pollutants under the CWA.
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# 302-17-0 is not present on state lists from CA, PA, MN, MA, FL, or NJ.

California Prop 65

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:

T

Risk Phrases:

R 25 Toxic if swallowed.
R 36/38 Irritating to eyes and skin.

Safety Phrases:

S 25 Avoid contact with eyes.
S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

WGK (Water Danger / Protection)

CAS# 302-17-0: 3

Canada - DSL / NDSL

CAS# 302-17-0 is listed on Canada's DSL List.

Canada - WHMIS

WHMIS: Not available.

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

regulations.
Canadian Ingredient Disclosure List

Section 16 - Additional Information

MSDS Creation Date: 12/19/1998
Revision #3 Date: 10/03/2005

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Fisher be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Fisher has been advised of the possibility of such damages.