

Material Safety Data Sheet

Tetrahydrofurfuryl alcohol, 98%

ACC# 96063

Section 1 - Chemical Product and Company Identification

MSDS Name: Tetrahydrofurfuryl alcohol, 98%

Catalog Numbers: AC138180000, AC138180010, AC138180025

Synonyms: 2-Furanmethanol, tetrahydro-; Furfuryl alcohol, tetrahydro-; Tetrahydro-2-furancarbinol; Tetrahydro-2-furanmethanol; Tetrahydro-2-furylmethanol; THFA

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
97-99-4	Tetrahydrofurfuryl alcohol	98	202-625-6

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: colorless liquid. Flash Point: 74 deg C.

Warning! Causes severe eye irritation. Causes respiratory tract irritation. **Combustible liquid and vapor.** May be harmful if swallowed. Causes skin irritation. May cause digestive tract irritation. Hygroscopic (absorbs moisture from the air). May cause liver and kidney damage.

Target Organs: Kidneys, liver.

Potential Health Effects

Eye: Causes severe eye irritation. Causes redness and pain.

Skin: Causes moderate skin irritation. Causes redness and pain.

Ingestion: May cause gastrointestinal irritation with nausea, vomiting and diarrhea. May cause effects similar to those for inhalation exposure. May be harmful if swallowed.

Inhalation: May cause dizziness, incoordination, and unconsciousness. Causes upper respiratory tract irritation. Causes irritation of the mucous membrane.

Chronic: May cause liver and kidney damage.

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 immediately.

Skin: Get medical aid. 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.

Inhalation: Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

Notes to Physician: Treat symptomatically and supportively.

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. Use water spray to keep fire-exposed containers cool. Combustible liquid. Containers may explode when heated.

Extinguishing Media: Use water spray to cool fire-exposed containers. Use water spray, dry chemical, carbon dioxide, or appropriate foam.

Flash Point: 74 deg C (165.20 deg F)

Autoignition Temperature: 282 deg C (539.60 deg F)

Explosion Limits, Lower: 1.50 vol %

Upper: 9.70 vol %

NFPA Rating: (estimated) Health: 2; Flammability: 2; 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. Clean up spills

immediately, observing precautions in the Protective Equipment section. Remove all sources of ignition. Use a spark-proof tool. Provide ventilation. Use water spray to reduce vapors or divert vapor cloud drift.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use only in a well-ventilated area. Ground and bond containers when transferring material. Avoid contact with eyes, skin, and clothing. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep container tightly closed. Keep away from heat, sparks and flame. Avoid ingestion and inhalation. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames.

Storage: Keep away from heat, sparks, and flame. Keep away from sources of ignition. Do not store in direct sunlight. Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. Store protected from moisture.

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 general or local explosion-proof ventilation to keep airborne levels to acceptable levels.

Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Tetrahydrofurfuryl alcohol	none listed	none listed	none listed

OSHA Vacated PELs: Tetrahydrofurfuryl alcohol: 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 prevent skin exposure.

Respirators: A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant respirator use.

Section 9 - Physical and Chemical Properties

Physical State: Liquid

Appearance: colorless

Odor: Sweet, ether-like

pH: Not available.

Vapor Pressure: 2.3 mm Hg @ 39C

Vapor Density: 3.52

Evaporation Rate: Not available.

Viscosity: 6.24 cps @ 20C

Boiling Point: 178 deg C @ 760.00mm Hg

Freezing/Melting Point: < -80 deg C

Decomposition Temperature: Not available.

Solubility: Miscible.

Specific Gravity/Density: 1.0540g/cm3

Molecular Formula: C5H10O2

Molecular Weight: 102.13

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures.

Conditions to Avoid: Incompatible materials, ignition sources, excess heat, exposure to moist air or water.

Incompatibilities with Other Materials: Moisture, strong acids, strong oxidizing agents, strong reducing agents, acid anhydrides, acid chlorides, 3-nitro-N-bromophthalimide.

Hazardous Decomposition Products: Carbon monoxide, irritating and toxic fumes and gases, carbon dioxide.

Hazardous Polymerization: Will not occur.

Section 11 - Toxicological Information

RTECS#:

CAS# 97-99-4: LU2450000

LD50/LC50:

CAS# 97-99-4:

Dermal, guinea pig: LD50 = 5 gm/kg;

Draize test, rabbit, eye: 20 mg/24H Moderate;

Oral, mouse: LD50 = 2300 mg/kg;

Oral, rat: LD50 = 1600 mg/kg;

Carcinogenicity:

CAS# 97-99-4: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

Epidemiology: No information available.

Teratogenicity: No information available.

Reproductive Effects: No information available.

Mutagenicity: No information available.

Neurotoxicity: No information available.

Other Studies:

Section 12 - Ecological Information

Ecotoxicity: Fish: Harlequin fish: LC50 = 3400 mg/L; 96 Hr; Unspecified No data available.

Environmental: Tetrahydrofurfuryl alcohol exists primarily in the vapor phase in the ambient atmosphere and will degrade by the reaction with photochemically produced hydroxyl-radicals with a half-life of 13 hours. It is expected to degrade via biodegradation in soil and water. Leaching into the soil is possible since tetrahydrofurfuryl alcohol is miscible with water. Aquatic hydrolysis, volatilization, adsorption to sediment and bioconcentration are not expected to be environmentally important.

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: None listed.

Section 14 - Transport Information

	US DOT	Canada TDG
Shipping Name:	Please contact Fisher Scientific for shipping information	No information available.
Hazard Class:		
UN Number:		
Packing Group:		

Section 15 - Regulatory Information

US FEDERAL

TSCA

CAS# 97-99-4 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 # 97-99-4: acute, flammable.

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 depleters.

This material does not contain any Class 2 Ozone depleters.

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# 97-99-4 can be found on the following state right to know lists: Pennsylvania, Massachusetts.

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:

XI

Risk Phrases:

R 36 Irritating to eyes.

Safety Phrases:

S 39 Wear eye/face protection.

WGK (Water Danger/Protection)

CAS# 97-99-4: 1

Canada - DSL/NDSL

CAS# 97-99-4 is listed on Canada's DSL List.

Canada - WHMIS

This product has a WHMIS classification of B3, D2B.

Canadian Ingredient Disclosure List

CAS# 97-99-4 is listed on the Canadian Ingredient Disclosure List.

Section 16 - Additional Information

MSDS Creation Date: 5/04/1999

Revision #2 Date: 3/18/2003

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.