

Material Safety Data Sheet

Butyraldehyde

ACC# 97116

Section 1 - Chemical Product and Company Identification

MSDS Name: Butyraldehyde

Catalog Numbers: AC108090000, AC108090010, AC108090025, AC108090200, AC108091000, AC220300000 AC220300000, AC220302500

Synonyms: Butanal; Butyric aldehyde.

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
123-72-8	Butyraldehyde	99+	204-646-6

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: APHA: 10 max liquid. Flash Point: -12 deg C.

Danger! Flammable liquid and vapor. Causes eye, skin, and respiratory tract irritation. Stench. May be harmful if swallowed, inhaled, or absorbed through the skin. May form explosive peroxides.

Target Organs: Blood, kidneys, central nervous system, liver, respiratory system, eyes, skin.

Potential Health Effects

Eye: Causes eye irritation. Lachrymator (substance which increases the flow of tears).

Skin: Causes skin irritation. May be harmful if absorbed through the skin. Contact with the skin defats the skin.

Ingestion: May cause irritation of the digestive tract. May cause nausea and vomiting. May

be harmful if swallowed.

Inhalation: Causes respiratory tract irritation. May cause narcotic effects in high concentration. May be harmful if inhaled. Inhalation of high concentrations may cause pulmonary edema.

Chronic: May cause liver and kidney damage. Laboratory experiments have resulted in mutagenic effects. Chronic exposure may cause blood effects.

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.

Skin: Get medical aid. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.

Ingestion: Do not induce vomiting. 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. Vapors may form an explosive mixture with air. Vapors can travel to a source of ignition and flash back. Will burn if involved in a fire. Containers may explode in the heat of a fire. Flammable liquid and vapor. May form explosive peroxides.

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

Flash Point: -12 deg C (10.40 deg F)

Autoignition Temperature: 190 deg C (374.00 deg F)

Explosion Limits, Lower: 1.7 vol %

Upper: 11.1 vol %

NFPA Rating: (estimated) Health: 2; Flammability: 3; Instability: 2

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. Wear a self contained breathing apparatus and appropriate personal

protection. (See Exposure Controls, Personal Protection section). Remove all sources of ignition. Use a spark-proof tool. Do not let this chemical enter the environment.

Section 7 - Handling and Storage

Handling: Use spark-proof tools and explosion proof equipment. Do not get in eyes, on skin, or on clothing. Take precautionary measures against static discharges. Keep away from heat, sparks and flame. Do not ingest or inhale. Container should be opened by a technically qualified person. Use only in a chemical fume hood. If peroxide formation is suspected, do not open or move container.

Storage: Keep away from sources of ignition. Store in a cool, dry place. Store in a tightly closed container. Flammables-area. Store under nitrogen. Containers should be dated when opened and tested periodically for the presence of peroxides. Should crystals form in a peroxidizable liquid, peroxidation may have occurred and the product should be considered extremely dangerous. In this instance, the container should only be opened remotely by professionals. May form explosive peroxides on prolonged storage.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Use explosion-proof ventilation equipment. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use only under a chemical fume hood.

Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Butyraldehyde	none listed	none listed	none listed

OSHA Vacated PELs: Butyraldehyde: 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: clear, colorless - APHA: 10 max
Odor: stench
pH: 6 - 7 (71 g/L (20°C))
Vapor Pressure: 91.5 mm Hg @ 20 deg C
Vapor Density: Not available.
Evaporation Rate:Not available.
Viscosity: 0.043 Ps @ 20 deg C
Boiling Point: 75 deg C @ 760 mmHg
Freezing/Melting Point:-96 deg C
Decomposition Temperature:Not available.
Solubility: Soluble.
Specific Gravity/Density:0.817
Molecular Formula:C4H8O
Molecular Weight:72.11

Section 10 - Stability and Reactivity

Chemical Stability: Air sensitive. May form explosive peroxides on prolonged storage.
Conditions to Avoid: Incompatible materials, light, ignition sources, exposure to air, excess heat.
Incompatibilities with Other Materials: Strong oxidizing agents, strong reducing agents, strong acids, strong bases.
Hazardous Decomposition Products: Carbon monoxide, carbon monoxide, carbon dioxide.
Hazardous Polymerization: May occur.

Section 11 - Toxicological Information

RTECS#:
CAS# 123-72-8: ES2275000
LD50/LC50:
CAS# 123-72-8:
Draize test, rabbit, eye: 20 mg/24H Moderate;
Inhalation, mouse: LC50 = 44610 mg/m³/2H;
Inhalation, mouse: LC50 = 36000 mg/m³/2H;
Inhalation, rat: LC50 = 6400 ppm/4H;
Oral, rat: LD50 = 2490 mg/kg;
Oral, rat: LD50 = 5890 mg/kg;
Skin, rabbit: LD50 = 3560 uL/kg;

Carcinogenicity:

CAS# 123-72-8: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

Epidemiology: No information available.

Teratogenicity: No information available.

Reproductive Effects: No information available.

Mutagenicity: Mutagenic effects have occurred in experimental animals.

Neurotoxicity: No information available.

Other Studies:

Section 12 - Ecological Information

Ecotoxicity: Fish: Fathead Minnow: LC50 = 16-25.8 mg/L; 96 Hr.; Unspecified Bacteria: *Phytobacterium phosphoreum*: EC50 = 16.4-16.5 mg/L; 5 minutes; Microtox test Bacteria: *Phytobacterium phosphoreum*: EC50 = 98.21-268 mg/L; 5,15,30 minutes; Microtox test No data available.

Environmental: TERRESTRIAL FATE: The primary degradation process in soil is expected to be biodegradation. A number of biological screening studies have demonstrated that butyraldehyde is readily biodegradable. Estimated Koc values of 9 and 71 suggest that butyraldehyde will leach readily. Butyraldehyde's vapor pressure of 111.4 mm Hg at 25 deg C indicates that it will evaporate rapidly from surfaces. AQUATIC FATE: The major environmental fate processes for butyraldehyde in water are biodegradation and volatilization.

Physical: ATMOSPHERIC FATE: In excess of 99% of the butyraldehyde present in the atmosphere will occur in the vapor phase, although a small fraction has been shown to occur in the particulate aerosol. Vapor phase butyraldehyde will degrade relatively rapidly in an average ambient atmosphere by reaction with photochemically produced hydroxyl radicals (estimated half-life of 16.4 hours). Direct photolysis may also be a major degradation process. During intense smog-pollution episodes, the natural formation rate of butyraldehyde can exceed the degradation rate.

Other: Degradation in anaerobic reactor (after 52 days of acclimation) was 82%. Butyraldehyde is considered amendable to anaerobic biodegradation.

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:	BUTYRALDEHYDE	BUTYRALDEHYDE
Hazard Class:	3	3
UN Number:	UN1129	UN1129
Packing Group:	II	II
Additional Info:		FLASHPOINT -6 C

Section 15 - Regulatory Information

US FEDERAL

TSCA

CAS# 123-72-8 is listed on the TSCA inventory.

Health & Safety Reporting List

CAS# 123-72-8: Effective 12/16/88, Sunset 12/19/95

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 # 123-72-8: immediate, fire.

Section 313

This material contains Butyraldehyde (CAS# 123-72-8, 99+%), which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR

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# 123-72-8 can be found on the following state right to know lists: New Jersey, Pennsylvania, Minnesota, 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:

F

Risk Phrases:

R 11 Highly flammable.

Safety Phrases:

S 29 Do not empty into drains.

S 33 Take precautionary measures against static discharges.

S 9 Keep container in a well-ventilated place.

WGK (Water Danger/Protection)

CAS# 123-72-8: 1

Canada - DSL/NDSL

CAS# 123-72-8 is listed on Canada's DSL List.

Canada - WHMIS

This product has a WHMIS classification of B2, D2B.

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

CAS# 123-72-8 is listed on the Canadian Ingredient Disclosure List.

Section 16 - Additional Information

MSDS Creation Date: 6/16/1999

Revision #4 Date: 4/17/2008

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.