Material Safety Data Sheet
Hexanal, 96%

ACC# 57717

Section 1 - Chemical Product and Company Identification

MSDS Name: Hexanal, 96%
Catalog Numbers: AC151850000, AC151850010, AC151850020, AC151855000
Synonyms: Caproaldehyde; Hexaldehyde; Caproic 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
66-25-1	Hexanal	96.0	200-624-5

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: colorless liquid. Flash Point: 32 deg C.
Warning! Flammable liquid and vapor. May cause eye and skin irritation. May cause respiratory tract irritation. May cause central nervous system depression. Marine pollutant.
Target Organs: Central nervous system.

Potential Health Effects
Eye: Causes mild eye irritation. May cause chemical conjunctivitis and corneal damage.
Skin: Causes mild skin irritation. May cause dermatitis. May cause cyanosis of the extremities.
Ingestion: May cause gastrointestinal irritation with nausea, vomiting and diarrhea. Expected to be a low ingestion hazard. Ingestion of large amounts may cause CNS depression.
Inhalation: May cause respiratory tract irritation. Aspiration may lead to pulmonary edema. Vapors may cause dizziness or suffocation. May cause burning sensation in the chest.
Chronic: No information found.

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: Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid if irritation develops or persists. Wash clothing before reuse.
Ingestion: 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. Vapors may form an explosive mixture with air. Use water spray to keep fire-exposed containers cool. Containers may explode in the heat of a fire. Flammable liquid and vapor. Vapors are heavier than air and may travel to a source of ignition and flash back. Vapors can spread along the ground and collect in low or confined areas. This liquid floats on water and may travel to a source of ignition and spread fire.
Extinguishing Media: For small fires, use dry chemical, carbon dioxide, water spray or alcohol-resistant foam. For large fires, use water spray, fog, or alcohol-resistant foam. Use water spray to cool fire-exposed containers. Water may be ineffective. Do NOT use straight streams of water.
Flash Point: 32 deg C (89.60 deg F)
Autoignition Temperature: 220 deg C (428.00 deg F)
Explosion Limits, Lower: Not available.
Upper: Not available.
NFPA Rating: (estimated) Health: 2; Flammability: 3; Instability: 1

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. A vapor suppressing foam may be used to reduce vapors.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Ground and bond containers when transferring material. Use spark-proof tools and explosion proof equipment. Avoid contact with eyes, skin, and clothing. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. 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. Use only with adequate ventilation.
Storage: Keep away from heat, sparks, and flame. Keep away from sources of ignition. Store in a tightly closed container. Keep under a nitrogen blanket. Store in a cool, dry, well-ventilated area away from incompatible substances. Flammables-area. Keep away from acids. Refrigeration has been recommended.

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
Hexanal	none listed	none listed	none listed

OSHA Vacated PELs: Hexanal: 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: 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: Liquid
Appearance: colorless
Odor: pungent green grass odor; fruity odor on dilution
pH: Not available.
Vapor Pressure: 2.4 mbar @ 20 deg C
Vapor Density: 3.45 (Air=1)
Evaporation Rate: Not available.
Viscosity: 0.69 mPas 20 deg C
Boiling Point: 131 deg C @ 760mm Hg
Freezing/Melting Point:-56 deg C
Decomposition Temperature: Not available.
Solubility: Insoluble.
Specific Gravity/Density:.83g/cm3 @ 20°C
Molecular Formula:C6H12O
Molecular Weight:100.16

Section 10 - Stability and Reactivity

Chemical Stability: Oxidizes when exposed to air. Autooxidizes and polymerizes, especially in the presence of traces of acid.
Conditions to Avoid: Incompatible materials, ignition sources, exposure to air, excess heat, plastics, rubber.
Incompatibilities with Other Materials: Strong oxidizing agents, bases, acids, strong reducing agents.
Hazardous Decomposition Products: Carbon monoxide, carbon dioxide.
Hazardous Polymerization: May occur.

Section 11 - Toxicological Information

RTECS#:
CAS# 66-25-1: MN7175000
LD50/LC50:
CAS# 66-25-1:
Draize test, rabbit, eye: 100 mg/24H Mild;
Draize test, rabbit, eye: 500 mg/24H Mild;
Draize test, rabbit, skin: 500 mg/24H Mild;
Oral, mouse: LD50 = 8292 mg/kg;
Oral, rat: LD50 = 4890 mg/kg;
.

Carcinogenicity:
CAS# 66-25-1: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

Epidemiology: No information found

Teratogenicity: No information found
Reproductive Effects: No information found
Mutagenicity: Unscheduled DNA synthesis(rat, Liver) = 30 mmol/L,Mutation,mammalian somatic cells (Hamster, Lung) = 3 mmol/L.
Neurotoxicity: No information found
Other Studies:

Section 12 - Ecological Information

Ecotoxicity: Fish: Fathead Minnow: LC50 = 724 mg/L; 96 Hr.; UnspecifiedFish: Fathead Minnow: LC50 = 14.0 mg/L; 96 Hr.; Unspecified No data available.
Environmental: Volatilization of hexaldehyde may be important from moist soil surfaces given an experimental Henry's Law constant of 2.13X10-4 atm-cu m/mole, and from dry soil surfaces(SRC) based on an experimental vapor pressure of 11.3 mm Hg. According to a fungal growth experiment, hexaldehyde oxidized but did not support growth which suggests that it may not biodegrade in water, but the straight chain aldehyde structure of hexaldehyde would suggest rapid biodegradation.
Physical: ATMOSPHERIC FATE: According to a suggested classification scheme, an experimental vapor pressure of 11.3 mm Hg at 25 deg C indicates that hexaldehyde will exist in the vapor phase in the ambient atmosphere. Vapor-phase hexaldehyde is degraded in the atmosphere by reaction with photochemically produced hydroxyl radicals; the half-life for this reaction in air is estimated to be about 13 hours. Hexaldehyde is also degraded in the atmosphere by reaction with nitrate radicals.
Other: An estimated BCF value of 13 was calculated for hexaldehyde, using an experimental log Kow of 1.78 and a recommended derived equation. According to a recommended classification scheme, this BCF value suggests that bioconcentration in aquatic organisms will not be an important fate process.

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:	HEXALDEHYDE	HEXALDEHYDE
Hazard Class:	3	3
UN Number:	UN1207	UN1207
Packing Group:	III	III
Additional Info:		FLASHPOINT 32 C

Section 15 - Regulatory Information

US FEDERAL

TSCA
CAS# 66-25-1 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.
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# 66-25-1 can be found on the following state right to know lists: New Jersey, 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 10 Flammable.
R 36/37/38 Irritating to eyes, respiratory system and skin.

Safety Phrases:
S 16 Keep away from sources of ignition - No smoking.
S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S 37/39 Wear suitable gloves and eye/face protection.

WGK (Water Danger/Protection)
CAS# 66-25-1: 1
Canada - DSL/NDSL
CAS# 66-25-1 is listed on Canada's DSL List.
Canada - 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: 7/21/1999
Revision #3 Date: 3/04/2004