Material Safety Data Sheet
Hexanes, HPLC grade, 98.5%

ACC# 89666

Section 1 - Chemical Product and Company Identification

MSDS Name: Hexanes, HPLC grade, 98.5%
Catalog Numbers: AC610070000, AC610070040
Synonyms: n-Hexane; Hexyl hydride; Dipropyl; normal-Hexane; Hex.
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
110-54-3	Hexane	98.5	203-777-6

Hazard Symbols: XN F N
Risk Phrases: 11 38 48/20

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: clear colorless liquid. Flash Point: -22 deg C. Aspiration hazard if swallowed. Can enter lungs and cause damage. Causes respiratory tract irritation. Causes eye and skin irritation. **Danger!** Extremely flammable liquid and vapor. Vapor may cause flash fire. Possible risk of impaired fertility. Breathing vapors may cause drowsiness and dizziness. Dangerous for the environment. May cause nervous system effects.
Target Organs: Central nervous system, respiratory system, eyes, skin, peripheral nervous system.

Potential Health Effects

Eye: Causes mild eye irritation. Causes redness and pain. May cause blurred vision, tearing, and conjunctivitis.
Skin: Prolonged and/or repeated contact may cause defatting of the skin and dermatitis. Causes irritation with burning pain, itching, and redness. Absorbed through the skin.
Ingestion: Aspiration hazard. May cause gastrointestinal irritation with nausea, vomiting and diarrhea. Aspiration of material into the lungs may cause chemical pneumonitis, which may be fatal. May cause central nervous system effects. Aspiration can cause asphyxia, brain damage, and cardiac arrest.
Inhalation: Causes respiratory tract irritation. Exposure produces central nervous system depression. Aspiration may cause respiratory swelling and pneumonitis. Inhalation of high concentrations may cause narcotic effects. Vapors may cause dizziness or suffocation. Exposure may cause vertigo, hallucinations, fatigue, muscle weakness, visual disturbances, nervous system disturbances, coughing, chest pains, difficulty in breathing, lung irritation, gastrointestinal disturbances, and edema which may be fatal.
Chronic: Prolonged or repeated skin contact may cause defatting and dermatitis. Prolonged or repeated exposure may cause adverse reproductive effects. May cause fetal effects. Chronic exposure may cause visual disturbances. Laboratory experiments have resulted in mutagenic effects. Peripheral neuropathy symptoms include: muscular weakness, paresthesia, numbing of the hands, feet, legs and arms, unsteadiness, and difficulty in walking and standing. Repeated exposure may cause nervous system abnormalities with muscle weakness and damage, motor incoordination, and sensation disturbances. Chronic exposure produces peripheral neuropathy.

Section 4 - First Aid Measures

Eyes: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical aid.
Skin: In case of contact, flush skin with plenty of water. Remove contaminated clothing and shoes. Get medical aid if irritation develops and persists. Wash clothing before reuse.
Ingestion: Potential for aspiration if swallowed. Get medical aid immediately. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person.
Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.
Notes to Physician: Treat symptomatically and supportively. For ingestion, the stomach sould be intubated, aspirated, and lavaged with a slurry of activated charcoal--protect the airway from aspiration of gastric contents. Monitor arterial blood gases in cases of severe aspiration.

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. 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. Extremely flammable liquid and vapor. Water may be ineffective. Material is lighter than water and a fire may be spread by the use of water. May accumulate static electrical charges, and may cause ignition of its own vapors. Containers may explode if exposed to fire. 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.

Extinguishing Media: For small fires, use dry chemical, carbon dioxide, water spray or alcohol-resistant foam. Water may be ineffective. Water may spread fire. If water is the only media available, use in flooding amounts. For large fires, use water spray, fog or alcohol-resistant foam. Do NOT use straight streams of water. Contact professional fire-fighters immediately. Cool containers with flooding quantities of water until well after fire is out.
Flash Point: -22 deg C (-7.60 deg F)
Autoignition Temperature: 225 deg C (437.00 deg F)
Explosion Limits, Lower:1.1 vol %
Upper: 7.5 vol %
NFPA Rating: (estimated) Health: 1; Flammability: 3; 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. Avoid runoff into storm sewers and ditches which lead to waterways. Clean up spills immediately, observing precautions in the Protective Equipment section. Remove all sources of ignition. Provide ventilation. A vapor suppressing foam may be used to reduce vapors. Use only non-sparking tools and equipment.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. 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. Take precautionary measures against static discharges. Keep away from heat, sparks and flame. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames. Use only with adequate ventilation. Avoid breathing vapor or mist.
Storage: Keep away from heat and flame. Keep away from sources of ignition. Store in a tightly closed container. Keep from contact with oxidizing materials. Store in a cool, dry, well-ventilated area away from incompatible substances. Flammables-area.

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
Hexane	50 ppm TWA; skin - potential for cutaneous absorption	50 ppm TWA (excluding n-hexane); 180 mg/m3 TWA (excluding n-hexane) 1100 ppm IDLH	500 ppm TWA; 1800 mg/m3 TWA

OSHA Vacated PELs: Hexane: 50 ppm TWA; 180 mg/m3 TWA
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: 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 a respirator's use.

Section 9 - Physical and Chemical Properties

Physical State: Liquid
Appearance: clear colorless
Odor: gasoline-like
pH: Not available.
Vapor Pressure: 151 mm Hg @ 25 deg C
Vapor Density: 2.97(Air = 1)
Evaporation Rate: Not available.
Viscosity: 0.31 mPas 20 C
Boiling Point: 69 deg C @ 760 mmHg
Freezing/Melting Point:-95 deg C
Decomposition Temperature: Not available.
Solubility: Insoluble.
Specific Gravity/Density:0.6500
Molecular Formula:C6H14
Molecular Weight:86.18

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures.
Conditions to Avoid: Ignition sources, excess heat, electrical sparks.
Incompatibilities with Other Materials: Strong oxidizing agents, dinitrogen tetraoxide.
Hazardous Decomposition Products: Carbon monoxide, irritating and toxic fumes and gases, carbon dioxide.
Hazardous Polymerization: Will not occur.

Section 11 - Toxicological Information

RTECS#:
CAS# 110-54-3: MN9275000
LD50/LC50:
CAS# 110-54-3:
Draize test, rabbit, eye: 10 mg Mild;
Inhalation, mouse: LC50 = 150000 mg/m3/2H;
Inhalation, rat: LC50 = 48000 ppm/4H;
Inhalation, rat: LC50 = 627000 mg/m3/3M;
Oral, rat: LD50 = 25 gm/kg;

Carcinogenicity:
CAS# 110-54-3: Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.
Epidemiology: No data available.
Teratogenicity: Effects on Newborn - behavioral: Inhaltion, rat: TCLo = 10000 ppm/7H (female 15 days pre-mating and female 1-18 days after conception).; Effects on Embryo or Fetus - fetotoxicity: Inhalation, rat: TCLo = 5000 ppm/20 H (female 6-19 days after conception).
Reproductive Effects: No data available.
Neurotoxicity: No data available.
Mutagenicity: Sex Chromosome Loss and Nondisjunction: Saccharomyces cerevisiae = 132 mmol/L.; Cytogenetic Anaylsis: Hamster fibroblast = 500 mg/L.
Other Studies: No data available.

Section 12 - Ecological Information

Ecotoxicity: No data available. Estimated BCF values = 2.24 and 2.89. These values suggest that hexane will show low bioconcentration in aquatic organisms. Estimated Koc value = 4.11. This product will show slight soil mobility and is expected to rapidly volatilize from moist surface soils.
Environmental: Terrestrial: Volatilization and adsorption are expected to be the most important fate processes. Aquatic: Photolysis or hydrolysis are not expected to be important. Atmospheric: Expected to exist entirely in the vapor phase in ambient air, expected half life 2.8 days. Expected to biodegrade but not bioconcentrate.
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	IATA	RID/ADR	IMO	Canada TDG
Shipping Name:	HEXANES				HEXANES
Hazard Class:	3				3
UN Number:	UN1208				UN1208
Packing Group:	II				II
Additional Info:					FLASHPOINT - 22C

Section 15 - Regulatory Information

US FEDERAL

TSCA
CAS# 110-54-3 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.
SARA

CERCLA Hazardous Substances and corresponding RQs
CAS# 110-54-3: 5000 lb final RQ; 2270 kg final RQ
SARA Section 302 Extremely Hazardous Substances
None of the chemicals in this product have a TPQ.
SARA Codes

CAS # 110-54-3: acute, chronic, flammable.

Section 313

This material contains Hexane (CAS# 110-54-3, 98 5%),which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

Clean Air Act:

CAS# 110-54-3 is listed as a hazardous air pollutant (HAP). 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# 110-54-3 can be found on the following state right to know lists: New Jersey, 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 F N

Risk Phrases:

R 11 Highly flammable.
R 38 Irritating to skin.
R 48/20 Harmful : danger of serious damage to health by prolonged exposure through inhalation.
R 62 Possible risk of impaired fertility.
R 51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R 65 Harmful: may cause lung damage if swallowed.
R 67 Vapours may cause drowsiness and dizziness.

Safety Phrases:

S 16 Keep away from sources of ignition - No smoking.
S 29 Do not empty into drains.
S 33 Take precautionary measures against static discharges.
S 36/37 Wear suitable protective clothing and gloves.
S 9 Keep container in a well-ventilated place.
S 61 Avoid release to the environment. Refer to special instructions/safety data sheets.
S 62 If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label.

WGK (Water Danger/Protection)

CAS# 110-54-3: 1

Canada - DSL/NDSL

CAS# 110-54-3 is listed on Canada's DSL List.

Canada - WHMIS

This product does not have a WHMIS classification.

Canadian Ingredient Disclosure List

CAS# 110-54-3 is listed on the Canadian Ingredient Disclosure List.

Exposure Limits

CAS# 110-54-3: OEL-AUSTRALIA:TWA 50 ppm (180 mg/m3) OEL-BELGIUM:TWA 50 ppm (176 mg/m3) OEL-DENMARK:TWA 50 ppm (180 mg/m3) OEL-FINLAND:TWA 50 ppm (180 mg/m3);STEL 150 ppm (530 mg/m3) OEL-FRANCE:TWA 50 ppm (170 mg/m3) OEL-GERMANY:TWA 50 ppm (180 mg/m3) OEL-HUNGARY:TWA 100 mg/m3;STEL 200 mg/m3;Skin OEL-JAPAN:TWA 40 ppm (140 mg/m3);Skin OEL-THE NETHERLANDS:TWA 100 ppm (360 mg/m3) OEL-THE PHILIPPINES:TWA 500 ppm (1800 mg/m3) JAN9 OEL-POLAND:TWA 400 mg/m3 OEL-RUSSIA:TWA 40 ppm;STEL 300 mg/m3 OEL-SWEDEN:TWA 25 ppm (90 mg/m3);STEL 50 ppm (180 mg/m3) OEL-SWITZERLAND:TWA 50 ppm (180 mg/m3);STEL 100 ppm (360 mg/m3) OEL-TURKEY:TWA 500 ppm (1800 mg/m3) OEL-UNITED KINGDOM:TWA 100 ppm (360 mg/m3);STEL 125 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: 6/03/1999
Revision #6 Date: 2/21/2002