**** MATERIAL SAFETY DATA SHEET ****

Isopropanol, HPLC Grade, 99.9%
39887

**** SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION ****

MSDS Name: Isopropanol, HPLC Grade, 99.9%
Catalog Numbers:
AC610080040
Synonyms:
Isopropanol; Dimethylcarbinol; sec-Propyl alcohol; Rubbing alcohol; Petrohol; 1-Methylethanol; 1-Methylethyl alcohol; 2-Hydroxypropane; 2-Propyl alcohol; Isopropyl alcohol; Propan-2-ol; IPA; 2-Propanol.
Company Identification (Europe): Acros Organics BVBA
Janssen Pharmaceuticalaan 3a
2440 Geel, Belgium
Company Identification (USA): Acros Organics
One Reagent Lane
Fairlawn, NJ 07410
For information in North America, call: 800-ACROS-01
For information in Europe, call: 0032(0) 14575211
For emergencies in the US, call CHEMTREC: 800-424-9300
For emergencies in Europe, call: 0032(0) 14575299

**** SECTION 2 - COMPOSITION, INFORMATION ON INGREDIENTS ****

CAS#	Chemical Name	%	EINECS#
67-63-0	2-Propanol	99.9	200-661-7

Hazard Symbols: XI F
Risk Phrases: 11 36 67

**** SECTION 3 - HAZARDS IDENTIFICATION ****

EMERGENCY OVERVIEW
Appearance: colorless liquid liquid. Flash Point: 12 deg C.
Warning! Flammable liquid and vapor. Causes respiratory tract irritation. Prolonged or repeated contact causes defatting of the skin with irritation, dryness, and cracking. Hygroscopic (absorbs moisture from the air). May cause central nervous system depression. Aspiration hazard if swallowed. Can enter lungs and cause damage. May form explosive peroxides. Causes eye irritation. This material has been reported to be susceptible to autoxidation and therefore should be classified as peroxidizable. Breathing vapors may cause drowsiness and dizziness.
Target Organs: Central nervous system, respiratory system, eyes, skin.

Potential Health Effects

Eye:
Produces irritation, characterized by a burning sensation, redness, tearing, inflammation, and possible corneal injury. May cause transient corneal injury.
In the eyes of a rabbit, 0.1 ml of 70% isopropyl alcohol caused conjunctivitis, iritis, and corneal opacity.

Skin:
May cause irritation with pain and stinging, especially if the skin is abraded. Isopropanol has a low potential to cause allergic skin reactions; however, rare cases of allergic contact dermatitis have been reported. May be absorbed through intact skin.
Dermal absorption has been considered toxicologically insignificant. The cases of deep coma associated with skin contact are thought to be a consequence of gross isopropanol vapor inhalation in rooms with inadequate ventilation, rather than being attributable to percutaneous absorption of isopropanol per se.

Ingestion:
Causes gastrointestinal irritation with nausea, vomiting and diarrhea. May cause kidney damage. May cause central nervous system depression, characterized by excitement, followed by headache, dizziness, drowsiness, and nausea. Advanced stages may cause collapse, unconsciousness, coma and possible death due to respiratory failure. Aspiration of material into the lungs may cause chemical pneumonitis, which may be fatal.
The probable oral lethal dose in humans is 240 ml (2696 mg/kg), but ingestion of only 20 ml (224 mg/kg) has caused poisoning.

Inhalation:
Inhalation of high concentrations may cause central nervous system effects characterized by nausea, headache, dizziness, unconsciousness and coma. May cause narcotic effects in high concentration. Causes upper respiratory tract irritation. Inhalation of vapors may cause drowsiness and dizziness.

Chronic:
Prolonged or repeated skin contact may cause defatting and dermatitis.

**** 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:
Urine acetone test may be helpful in diagnosis. Hemodialysis should be considered in severe intoxication. 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. Flammable liquid and vapor. May form explosive peroxides. 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:
Water may be ineffective. Do NOT use straight streams of water. For large fires, use dry chemical, carbon dioxide, alcohol-resistant foam, or water spray. For small fires, use carbon dioxide, dry chemical, dry sand, or alcohol-resistant foam. Cool containers with flooding quantities of water until well after fire is out.

Autoignition Temperature:399 deg C (750.20 deg F)
Flash Point: 12 deg C (53.60 deg F)
Explosion Limits, lower:2.0 vol %
Explosion Limits, upper:12.7 @ 200&F
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. Use water spray to dilute spill to a non-flammable mixture. 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. Remove contaminated clothing and wash before reuse. 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. Take precautionary measures against static discharges. Keep container tightly closed. 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. Do not allow to evaporate to near dryness.

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. Keep from contact with oxidizing materials. Store in a cool, dry, well-ventilated area away from incompatible substances. Flammables-area. After opening, purge container with nitrogen before reclosing. Periodically test for peroxide formation on long-term storage. Addition of water or appropriate reducing materials will lessen peroxide formation. Store protected from moisture. 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. All peroxidizable substances should be stored away from heat and light and be protected from ignition sources.

**** 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 adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
2-Propanol	200 ppm; 400 ppm STEL	400 ppm TWA; 980 mg/m3 TWA 2000 ppm IDLH	400 ppm TWA; 980 mg/m3 TWA

OSHA Vacated PELs:
2-Propanol:
400 ppm TWA; 980 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
Color:	colorless liquid
Odor:	alcohol-like
pH:	Not available.
Vapor Pressure:	33 mm Hg @ 20 deg C
Vapor Density:	2.1 (Air=1)
Evaporation Rate:	1.7 (n-butyl acetate=1)
Viscosity:	2.27 mPas @ 20C
Boiling Point:	82 deg C @ 760 mmHg
Freezing/Melting Point:	-88 deg C
Decomposition Temperature:	Not available.
Solubility in water:	Miscible.
Specific Gravity/Density:	0.7850 (water=1)
Molecular Formula:	C3H8O
Molecular Weight:	60.09

**** SECTION 10 - STABILITY AND REACTIVITY ****

Chemical Stability:
Under normal storage conditions, peroxidizable compounds can form and accumulate peroxides which may explode when subjected to heat or shock. This material is most hazardous when peroxide levels are concentrated by distillation or evaporation. Isopropanol is susceptible to autoxidation and therefore should be classified as peroxidizable.
Conditions to Avoid:
Light, ignition sources, excess heat, exposure to moist air or water.
Incompatibilities with Other Materials:
Attacks some forms of plastics, rubbers, and coatings., chlorine, carbony dichloride(phosgene), acetaldehyde, ethylene oxide, isocyanates, amines, aluminum at high temperatures, strong oxidizing agents, strong acids, ammonia, strong bases.
Hazardous Decomposition Products:
Carbon monoxide, carbon dioxide.
Hazardous Polymerization: Will not occur.

**** SECTION 11 - TOXICOLOGICAL INFORMATION ****

RTECS#:
CAS# 67-63-0: NT8050000
LD50/LC50:
CAS# 67-63-0: Draize test, rabbit, eye: 100 mg Severe; Draize test, rabbit, eye: 10 mg Moderate; Draize test, rabbit, eye: 100 mg/24H Moderate; Draize test, rabbit, skin: 500 mg Mild; Inhalation, mouse: LC50 = 53000 mg/m3; Inhalation, rat: LC50 = 72600 mg/m3; Inhalation, rat: LC50 = 16000 ppm/8H; Oral, mouse: LD50 = 3600 mg/kg; Oral, mouse: LD50 = 3600 mg/kg; Oral, rabbit: LD50 = 6410 mg/kg; Oral, rat: LD50 = 5000 mg/kg; Oral, rat: LD50 = 5045 mg/kg; Skin, rabbit: LD50 = 12800 mg/kg.
Carcinogenicity:
2-Propanol -
ACGIH: A4 - Not Classifiable as a Human Carcinogen
IARC: Group 3 carcinogen
Epidemiology:

Experimental teratogenic and reproductive effects have been reported for isopropanol. Early epidemiological studies have suggested an association between the strong acid manufacture of isopropyl alcohol and paranasal sinus cancer in workers.
Teratogenicity:
A rat & rabbit developmental toxicity study showed no teratogenic effects at doses that were clearly maternally toxic. In a separate rat study, no evidence of developmental neurotoxicity was associated with gestational exposures to IPA up to 1200 mg/kg/d.
Reproductive Effects:
See actual entry in RTECS for complete information.
Neurotoxicity:
No information available.
Mutagenicity:
See actual entry in RTECS for complete information.
Other Studies:
Standard Draize Test: Administration onto the skin (rabbit) = 500 mg (Mild). Standard Draize Test: Administration into the eye (rabbit) = 100 mg (Moderate). Standard Draize Test: Administration into the eye = 10 mg (Moderate). Standard Draize test: Administration into the eye (rabbit) = 100 mg/24H (Moderate).

**** SECTION 12 - ECOLOGICAL INFORMATION ****

Ecotoxicity:
Fish: Fathead Minnow: >1000 ppm; 96h; LC50Daphnia: >1000 ppm; 96h; LC50Fish: Gold orfe: 8970-9280 ppm; 48h; LC50IPA has a high biochemical oxygen demand and a potential to cause oxygen depletion in aqueous systems, a low potential to affect aquatic organisms, a low potential to affect secondary waste treatment microbial metabolism, a low potential to affect the germination of some plants, a high potential to biodegrade (low persistence) with unacclimated microorganisms from activated sludge.

**** 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
Shipping Name: ISOPROPANOL
Hazard Class: 3
UN Number: UN1219
Packing Group: II
Canadian TDG
No information available.

**** SECTION 15 - REGULATORY INFORMATION ****

US FEDERAL
TSCA
CAS# 67-63-0 is listed on the TSCA inventory.
Health & Safety Reporting List
CAS# 67-63-0: Effective Date: 12/15/86; Sunset Date: 12/15/96
Chemical Test Rules
CAS# 67-63-0: Testing required by manufacturers, importers, processors
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
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 # 67-63-0: acute, chronic, flammable.
Section 313
This material contains 2-Propanol (CAS# 67-63-0, 99 9%),which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 372.
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

2-Propanol can be found on the following state right to know lists:
California, 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: XI F

Risk Phrases:

R 11 Highly flammable.
R 36 Irritating to eyes.
R 67 Vapors may cause drowsiness and dizziness.

Safety Phrases:

S 7 Keep container tightly closed.
S 16 Keep away from sources of ignition - No smoking.
S 24/25 Avoid contact with skin and eyes.
S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

WGK (Water Danger/Protection)

CAS# 67-63-0: 1

United Kingdom Occupational Exposure Limits

CAS# 67-63-0: OES-United Kingdom, TWA 400 ppm TWA; 999 mg/m3 TWA
CAS# 67-63-0: OES-United Kingdom, STEL 500 ppm STEL; 1250 mg/m3 STEL

United Kingdom Maximum Exposure Limits

Canada

CAS# 67-63-0 is listed on Canada's DSL List.
This product has a WHMIS classification of B2, D2B.
CAS# 67-63-0 is listed on Canada's Ingredient Disclosure List.

Exposure Limits

CAS# 67-63-0: OEL-AUSTRALIA:TWA 400 ppm (980 mg/m3);STEL 500 ppm (1225 mg/m3)
OEL-BELGIUM:TWA 400 ppm (985 mg/m3);STEL 500 ppm (1230 mg/m3)
OEL-DENMARK:TWA 200 ppm (490 mg/m3);Skin
OEL-FRANCE:STEL 400 ppm (980 mg/m3)
OEL-GERMANY:TWA 400 ppm (980 mg/m3)
OEL-JAPAN:STEL 400 ppm (980 mg/m3)
OEL-THE NETHERLANDS:TWA 400 ppm (980 mg/m3);Skin
OEL-THE PHILIPPINES:TWA 400 ppm (980 mg/m3)
OEL-RUSSIA:STEL 400 ppm (10 mg/m3)
OEL-SWEDEN:TWA 150 ppm (350 mg/m3);STEL 250 ppm (600 mg/m3)
OEL-SWITZERLAND:TWA 400 ppm (980 mg/m3);STEL 800 ppm
OEL-TURKEY:TWA 200 ppm (500 mg/m3)
OEL-UNITED KINGDOM:TWA 400 ppm (980 mg/m3);STEL 500 ppm;Skin
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: 7/27/1999 Revision #9 Date: 10/12/2001

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 way shall the company 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 the company has been advised of the possibility of such damages.