OXFORD LAB FINE CHEM LLP
ISO 9001-2008 Certified Company

Regd Office: Unit no 12, 1st Floor,
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Oxford
Range of
Laboratory Chemicals

MATERIAL SAFETY DATA SHEET

CARNOY'S FLUID

MSDS CAS:

Section 1: Chemical Product and Company Identification

Section 1: Chemical Product
Product Name: Carnoy's Fluid
CAS#:
Synonym: None.
Chemical Name: Not available.
Chemical Formula:

Brand : OXFORD

Details Of The Supplier Of The Safety Data Sheet :

Company identification: OXFORD LAB FINE CHEM LLP
Unit. No. 12, 1st Floor, Neminath Industrial Estate No. 6,
Navghar, Vasai (East). Palghar - 401 210.
Mumbai, Maharashtra, INDIA.
Tel: 91-250-2390989
Tel/Fax: 91-250-2390032

Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	% by Weight	EINECS/ELINCS
Ethyl alcohol	64-17-5	57	200-578-6
Chloroform	67-66-3	30	200-663-8
Acetic acid	64-19-7	10	200-580-7
Methyl alcohol	67-56-1	3	200-659-6

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Section 2: Composition and Information on Ingredients (Continued)

Hazard Symbols : F
Risk Phrases : 11

Section 3: Hazards Identification

EMERGENCY OVERVIEW:
Appearance: clear, colorless liquid. Flash Point: 52 deg F. May cause central nervous system depression. May cause cancer based on animal studies. Aspiration hazard if swallowed. Can enter lungs and cause damage.

Danger!:

Target Organs:
Kidneys, heart, central nervous system, liver, eyes.

Potential Health Effects:
Eye: Causes severe eye irritation. May cause painful sensitization to light. May cause chemical conjunctivitis and corneal damage.

Skin:
Causes moderate skin irritation. May be absorbed through the skin. Causes severe skin irritation and burns. May cause cyanosis of the extremities.

Ingestion:
May be fatal or cause blindness if swallowed. May cause gastrointestinal irritation with nausea, vomiting and diarrhea. May cause systemic toxicity with acidosis. 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. May cause cardiac disturbances. Aspiration of material into the lungs may cause chemical pneumonitis, which may be fatal.

Inhalation:
Inhalation of high concentrations may cause central nervous system effects characterized by nausea, headache, dizziness, unconsciousness and coma. Causes respiratory tract irritation. May cause cardiac sensitization and possible failure. May cause narcotic effects in high concentration. Vapors may cause dizziness or suffocation.

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Section 3: Hazards Identification (Continued)

Chronic:
Prolonged or repeated skin contact may cause defatting and dermatitis. Repeated exposure may cause erosion of teeth. Animal studies have reported fetal losses, delays in fetal development, and cleft palate. Laboratory experiments have resulted in mutagenic effects. Animal studies have reported the development of tumors. Prolonged exposure may cause liver, kidney, and heart 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.

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:
If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Possible aspiration hazard. Get medical aid immediately.

Inhalation:
Get medical aid immediately. Remove from exposure and move to fresh air immediately. If breathing is difficult, give oxygen. Do NOT use mouth-to-mouth resuscitation. If breathing has ceased apply artificial respiration using oxygen and a suitable mechanical device such as a bag and a mask.

Notes to Physician:
Causes cardiac sensitization to endogenous catelcholamines which may lead to cardiac arrhythmias. Do NOT use adrenergic agents such as epinephrine or pseudoepinephrine. Treat symptomatically and supportively. Persons with skin or eye disorders or liver, kidney, chronic respiratory diseases, or central and peripheral nervous sytem diseases may be at increased risk from exposure to this substance. Activated charcoal does not reduce ethanol absorption.

Antidote: **Ethanol may inhibit methanol metabolism.**

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Section 5: Fire and Explosion Data

General Information:
Containers can build up pressure if exposed to heat and/or fire. 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. May burn with invisible flame. Will burn if involved in a fire. Flammable Liquid. Can release vapors that form explosive mixtures at temperatures above the flashpoint. Use water spray to keep fire-exposed containers cool. Containers may explode in the heat of a 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: **52e deg F (11.11 deg C)**

Autoignition Temperature: **Not applicable.**

Explosion Limits, Lower: **3.3 vol %**

Upper: **19.0 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. 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.

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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. 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 container tightly closed. Keep away from heat, sparks and flame. Do not ingest or inhale. 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. Keep from contact with oxidizing materials. Store in a cool, dry, well-ventilated area away from incompatible substances. Flammables-area. Do not store near perchlorates, peroxides, chromic acid or nitric acid.

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
Ethyl alcohol	1000 ppm TWA	1000 ppm TWA; 1900 mg/m3 TWA 3300 ppm IDLH	1000 ppm TWA; 1900 mg/m3 TWA
Chloroform	10 ppm TWA	500 ppm IDLH	50 ppm Ceiling; 240 mg/m3 Ceiling
Acetic acid	10 ppm TWA; 15 ppm STEL	10 ppm TWA; 25 mg/m3 TWA 50 ppm IDLH	10 ppm TWA; 25 mg/m3 TWA

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Section 8: Exposure Controls/Personal Protection (Continued)

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Methyl alcohol	200 ppm TWA; 250 ppm STEL; skin - potential for cutaneous absorption	200 ppm TWA; 260 mg/m3 TWA 6000 ppm IDLH	200 ppm TWA; 260 mg/m3 TWA

OSHA Vacated PELs: Ethyl alcohol: 1000 ppm TWA; 1900 mg/m3 TWA Chloroform: 2 ppm TWA; 9.78 mg/m3 TWA Acetic acid: 10 ppm TWA; 25 mg/m3 TWA Methyl alcohol: 200 ppm TWA; 260 mg/m3 TWA

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 a respirator's use.

Section 9: Physical and Chemical Properties

Physical State : Liquid
Appearance : clear, colorless
Odor : Mixed odors.
pH : Not available.
Vapor Pressure : Not available.
Vapor Density : Not available.
Evaporation Rate : Not available.
Viscosity : Not available.
Boiling Point : 83 deg F
Freezing/Melting Point : Not available.
Decomposition Temperature: Not available.
Solubility : Soluble in water.

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Section 9: Physical and Chemical Properties (Continued)

Specific Gravity/Density : 0.9
Molecular Formula : Mixture
Molecular Weight : Not available.

Section 10: Stability and Reactivity Data

Chemical Stability: **Stable under normal temperatures and pressures.**

Conditions to Avoid:
High temperatures, incompatible materials, light, ignition sources, excess heat, strong oxidants, oxidizers.

Incompatibilities with Other Materials:
Strong oxidizing agents, peroxides, acids, acid chlorides, acid anhydrides, alkali metals, ammonia, permanganic acid, ruthenium (VIII) oxide, bromine pentafluoride, nitrosyl perchlorate, chromyl chloride, uranium hexafluoride, iodine heptafluoride, uranyl perchlorate, acetyl bromide, silver nitrate, disulfuryl difluoride, magnesium perchlorate, platinum, potassium-tert-butoxide, silver oxide, hydrazine, tetrachlorosilane + water, acetyl chloride, calcium hypochlorite, mercuric nitrate, perchloric acid, potassium dioxide, sodium, sodium + methanol, sodium methoxide + methanol, potassium, acetone + alkali, aluminum, disilane, lithium, magnesium, nitrogen tetroxide, perchloric acid + phosphorus pentoxide, sodium methylate, dinitrogen tetraoxide, fluorine, metals, triisopropylphosphine, 5-azidotetrazole, chromium trioxide, hydrogen peroxides, potassium permanganate, sodium peroxide, phosphorus trichloride, acetaldehyde, acetic anhydride, chromic acid, nitric acid, 2-aminoethanol, ammonium nitrate, chlorine trifluoride, chlorosulfonic acid, diallyl methyl carbinol + ozone, ethylene diamine, ethyleneimine, nitric acid + acetone, oleum, permanganates, xylene, potassium hydroxide, sodium hydroxide.

Hazardous Decomposition Products:
Hydrogen chloride, carbon monoxide, irritating and toxic fumes and gases, carbon dioxide, chlorine, phosgene gas.

Hazardous Polymerization: **Will not occur.**

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Section 11: Toxicological Information

CAS#: **64-17-5: KQ630000067-66-3: FS910000064-19-7: AF122500067-56-1: PC1400000**

LD50/LC50:

CAS# 64-17-5: Draize test, rabbit, eye: 500 mg Severe; Draize test, rabbit, eye: 500 mg/24H Mild; Draize test, rabbit, skin: 20 mg/24H Moderate; Inhalation, mouse: LC50 = 39 gm/m3/4H; Inhalation, rat: LC50 = 20000 ppm/10H; Oral, mouse: LD50 = 3450 mg/kg; Oral, rabbit: LD50 = 6300 mg/kg; Oral, rat: LD50 = 7060 mg/kg; Oral, rat: LD50 = 9000 mg/kg; CAS# 67-66-3: Draize test, rabbit, eye: 148 mg; Draize test, rabbit, eye: 20 mg/24H Moderate; Draize test, rabbit, skin: 500 mg/24H Mild; Inhalation, rat: LC50 = 47702 mg/m3/4H; Oral, mouse: LD50 = 36 mg/kg; Oral, rat: LD50 = 695 mg/kg; Skin, rabbit: LD50 = >20 gm/kg; CAS# 64-19-7: Draize test, rabbit, skin: 50 mg/24H Mild; Inhalation, mouse: LC50 = 5620 ppm/1H;
Oral, rat: LD50 = 3310 mg/kg; Skin, rabbit: LD50 = 1060 uL/kg; CAS# 67-56-1: Draize test, rabbit, eye: 40 mg Moderate; Draize test, rabbit, eye: 100 mg/24H Moderate; Draize test, rabbit, skin: 20 mg/24H Moderate; Inhalation, rabbit: LC50 = 81000 mg/m3/14H; Inhalation, rat: LC50 = 64000 ppm/4H; Oral, mouse: LD50 = 7300 mg/kg; Oral, rabbit: LD50 = 14200 mg/kg; Oral, rat: LD50 = 5600 mg/kg; Skin, rabbit: LD50 = 15800 mg/kg;

Carcinogenicity:

CAS# 64-17-5: Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA. CAS# 67-66-3:

ACGIH: **A3 - Confirmed animal carcinogen with unknown relevance to humans.**

California: **carcinogen, initial date 10/1/87.**

NIOSH: **potential occupational carcinogen.**

NTP: **Suspect carcinogen.**

OSHA: **Possible Select carcinogen.**

IARC:

Group 2B carcinogen CAS# 64-19-7: Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA. CAS# 67-56-1: Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.

Epidemiology:

Ethanol has been shown to produce fetotoxicity in the embry o or fetus of laboratory animals. Prenatal exposure to ethanol is associated with a distinct pattern of co ngenital malformations that have collecetively been termed the "fetal alcohol syndrome".

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Section 11: Toxicological Information (Continued)

Teratogenicity:
CAS# 64-17-5: Oral, Human - woman: TDLo = 41 gm/kg (female 41 week(s) after conception) Effects on Newborn - Apgar score (human only) and Effects on Newborn - other neonatal measures or effects and Effects on Newborn - drug dependence.

Reproductive Effects:
CAS# 64-17-5: Intrauterine, Human - woman: TDLo = 200 mg/kg (female 5 day(s) pre-mating) Fertility - female fertility index (e.g. # females pregnant per # sperm positive females; # females pregnant per # females mated).

Neurotoxicity: **No information available.**

Mutagenicity:
CAS# 64-17-5: DNA Inhibition: Human, Lymphocyte = 220 mmol/L.; Cytogenetic Analysis: Human, Lymphocyte = 1160 gm/L.; Cytogenetic Analysis: Human, Fibroblast = 12000 ppm.; Cytogenetic Analysis: Human, Leukocyte = 1 pph/72H (Continuous).; Sister Chromatid Exchange: Human, Lymphocyte = 500 ppm/72H (Continuous).

Other Studies:
Standard Draize Test(Skin, rabbit) = 20 mg/24H (Moderate) S tandard Draize Test: Administration into the eye (rabbit) = 500 mg (Severe).

Section 12: Ecological Information

Ecotoxicity:
Fish: Rainbow trout: LC50 = 12900-15300 mg/L; 96 Hr; Flow-through @ 24-24.3ï¿½CFish: Rainbow trout: LC50 = 11200 mg/L; 24 Hr; Fingerling (Unspecified)Bacteria: Phytobacterium phosphoreum: EC50 = 34900 mg/L; 5-30 min; Microtox test CAS# 64-17-5: When spilled on land it is apt to volatilize, biodegrade, and leach into the ground water, but no data on the rates of these processes could be found. Its fate in ground water is unknown. When released into water it will volatilize and probably biodegrade. It would not be expected to adsorb to sediment or bioconcentrate in fish.

Environmental:
CAS# 64-17-5: When released to the atmosphere it will photodegrade in hours (polluted urban atmosphere) to an estimated range of 4 to 6 days in less polluted areas. Rainout should be significant.

Physical: **No information available.**

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Section 13: Disposal Considerations

RCRA P-Series: **None listed.**

RCRA U-Series: **CAS# 67-66-3: waste number U044. CAS# 67-56-1: waste number U154 (Ignitable waste).**

Section 14: Transport Information

Land transport (ADR-RID)

General information : Not regulated.

Sea transport (IMDG) [English only]

General information : Not regulated.

Air transport (ICAO-IATA) [English only]

General information : Not regulated.

Section 15: Other Regulatory Information

US FEDERAL:

TSCA: **CAS# 64-17-5 is listed on the TSCA inventory. CAS# 67-66-3 is listed on the TSCA inventory. CAS# 64-19-7 is listed on the TSCA inventory. CAS# 67-56-1 is listed on the TSCA inventory.**

Health & Safety Reporting List:

CAS# 67-66-3: Effective 6/1/87; Sunset 6/1/97 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.

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Section 15: Other Regulatory Information (Continued)

SARA

CERCLA Hazardous Substances and corresponding RQs:

CAS# 67-66-3: 10 lb final RQ; 4.54 kg final RQ CAS# 64-19-7: 5000 lb final RQ; 2270 kg final RQ CAS# 67-56-1: 5000 lb final RQ; 2270 kg final RQ

SARA Section 302 Extremely Hazardous Substances:

CAS# 67-66-3: 10000 lb TPQ

SARA Codes:

CAS # 64-17-5: acute, chronic, flammable. CAS # 67-66-3: acute, chronic. CAS # 64-19-7: acute, chronic, flammable. CAS # 67-56-1: acute, flammable.

Section 313:

This material contains Chloroform (CAS# 67-66-3, 30%),which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373. This material contains Methyl alcohol (CAS# 67-56-1, 3%),which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

Clean Air Act:

CAS# 67-66-3 is listed as a hazardous air pollutant (HAP). CAS# 67-56-1 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:

CAS# 67-66-3 is listed as a Hazardous Substance under the CWA. CAS# 64-19-7 is listed as a Hazardous Substance under the CWA. CAS# 67-66-3 is listed as a Priority Pollutant under the Clean Water Act. CAS# 67-66-3 is listed as a Toxic Pollutant under the Clean Water Act.

OSHA:

None of the chemicals in this product are considered highly hazardous by OSHA.

STATE:

CAS# 64-17-5 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts. CAS# 67-66-3 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts. CAS# 64-19-7 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts. CAS# 67-56-1 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts. WARNING: This product contains Chloroform, a chemical known to the state of California to cause cancer. WARNING: This product contains Ethyl alcohol, a chemical known to the state of California to cause birth defects or other reproductive harm. California No Significant Risk Level: CAS# 67-66-3: 20 ï¿½g/day NSRL (oral); 40 ï¿½g/day NSRL (inhalation)

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Section 16 - Additional Information

References: Not available.

Other Special Considerations: Not available.

Disclaimer:

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