

MATERIAL SAFETY DATA SHEET

SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Glyo - Fixx Concentrate

PART NUMBER: 230136

GENERAL USE: Fixative for anatomical pathology

PRODUCT DESCRIPTION: Clear, colorless to very slightly pale yellow combustible liquid.

Thermo
ELECTRON CORPORATION

MANUFACTURER'S NAME (Distributor in the Americas)
Thermo Electron Corporation

DATE PREPARED: November 11, 2003

SUPERSEDES: October 1, 2001

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ADDRESS (NUMBER, STREET, P.O. BOX)
171 Industry Drive

TELEPHONE NUMBER FOR INFORMATION
(412) 788-1133

(CITY, STATE AND ZIP CODE)
Pittsburgh, PA 15275

COUNTRY
USA

EMERGENCY TELEPHONE NUMBER

CHEM • TEL (800) 255-3924 Outside USA (813) 248-0585

DISTRIBUTOR'S NAME (Outside the Americas)
Thermo Electron Corporation

ADDRESS (NUMBER, STREET, P.O. BOX)
93/96 Chadwick Road, Astmoor

TELEPHONE NUMBER FOR INFORMATION
+44 (0) 1928 562547

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Runcorn, Cheshire WA7 1PR

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United Kingdom

EMERGENCY TELEPHONE NUMBER

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SECTION 2 - HAZARDOUS INGREDIENTS

| HAZARDOUS COMPONENTS | % (by weight) | CAS # | EINECS # | Hazard Symbol | RISK PHRASES Full Text Section 16 |
|----------------------|------------------|----------|-----------|------------------|--------------------------------------|
| Ethanol | 5 - 10 | 64-17-5 | 200-578-6 | F | R-11 |
| Glyoxal solution | 10 - 25 | 107-22-2 | 203-474-9 | Xn | R-20, 36/38, 43, 68 |
| Acetic acid (a) | < 5 | 64-19-7 | 200-580-7 | C | R-10, 35 |

(a) See Section 15

SECTION 3 - HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Combustible liquid. Harmful if swallowed. Contact with skin and eyes may cause irritation. Hazard symbols for this product - Xi. Risk Phrases - R36/38

POTENTIAL HEALTH EFFECTS

INHALATION: High concentrations may cause dizziness, drowsiness, nausea, and vomiting.

SKIN: Brief contact may cause slight irritation; no evidence of other adverse effects from available information.

EYES: Contact may cause minor irritation.

INGESTION: Causes dizziness, drowsiness, decreased reaction, euphoria, nausea, vomiting.

CARCINOGENICITY

NTP? No IARC MONOGRAPHS? No OSHA REGULATED? No

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SECTION 4 - FIRST AID MEASURES

INHALATION: Remove affected person to fresh air; provide oxygen if breathing is difficult; if affected person is not breathing, administer CPR and seek emergency medical attention.

SKIN: Remove contaminated clothing; wash affected area with soap and water; launder contaminated clothing before reuse; if irritation persists, seek medical attention.

EYES: Remove contact lenses. Flush eyes with clear running water for 15 minutes while holding eyelids open; if irritation persists, seek medical attention.

INGESTION: Give two glasses of water for dilution; Induce vomiting by sticking fingers down throat; never give anything by mouth to an unconscious person; seek medical attention.

SECTION 5 - FIRE FIGHTING MEASURES

GENERAL HAZARDS: Product is combustible. Products of combustion include compounds of carbon, hydrogen and oxygen, including carbon monoxide.

EXTINGUISHING MEDIA
Carbon dioxide, water, water fog, dry chemical, chemical foam

FIRE FIGHTING PROCEDURES
Self - contained respiratory equipment; cool containers to prevent pressure buildup and possible explosion when exposed to extreme heat.
Caution - material is combustible!

UNUSUAL FIRE AND EXPLOSION HAZARDS
Closed containers can explode due to buildup of pressure when exposed to extreme heat.

HAZARDOUS COMBUSTION PRODUCTS
Smoke, fumes, oxides of carbon

SECTION 6 - ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: COMBUSTIBLE. Evacuate and ventilate area; confine and absorb into absorbent; place material into approved containers for disposal; for spills in excess of allowable limits (RQ) notify the National Response Center (800) 424 - 8802; refer to CERCLA 40 CFR 302 for detailed instructions concerning reporting requirements. Do not discharge into lakes, ponds, streams or public waters.

SECTION 7 - HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE: This material is combustible. It should be stored in tightly closed containers in a cool, well ventilated area. Vapor may form explosive mixtures in air. All sources of ignition should be controlled. Keep this and other chemicals out of reach of children. Avoid inhaling concentrated fumes or vapors.

SECTION 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

| HAZARDOUS COMPONENTS | NIOSH | | | | ACGIH | | | |
|----------------------|-----------------|-----------|----------|------------|-----------------|-----------|----------|------------|
| | TWA ppm | TWA mg/m3 | STEL ppm | STEL mg/m3 | TWA ppm | TWA mg/m3 | STEL ppm | STEL mg/m3 |
| Ethanol | -- | -- | -- | -- | 1000 | 1884 | -- | -- |
| Glyoxal solution | not established | | | | not established | | | |
| Acetic acid (a) | 10 | 25 | 15 | 37 | 10 | 25 | 15 | 37 |

PERSONAL PROTECTION:
RESPIRATORY PROTECTION (SPECIFY TYPE): Not ordinarily required, however, NIOSH approved respirator recommended to prevent overexposure.. Refer to 29 CFR 1910.134 or European Standard EN 149 for complete regulations.

PROTECTIVE GLOVES: Recommended for general protection

EYE PROTECTION: Protective eyeglasses or chemical safety goggles. Refer to 29 CFR 1910.133 or European Standard EN166.

OTHER PROTECTIVE CLOTHING OR EQUIPMENT: Safety eyebath nearby

WORK / HYGIENIC PRACTICES: Practice safe workplace habits. Minimize body contact with this, as well as all chemicals in general.

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SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|---------------------------------------|
| APPEARANCE AND ODOR Colorless to pale yellow liquid, characteristic alcohol odor | VAPOR PRESSURE 43 mm Hg @ 20° C |
| pH 3.5 - 4.25 | SPECIFIC GRAVITY (WATER = 1) 1.134 |
| BOILING POINT / BOILING RANGE 185° F (85° C) | SOLUBILITY IN WATER Complete |
| FLASH POINT 151° F (66° C) TCC | VISCOSITY Like that of water |
| FLAMMABLE LIMITS LEL: Not determined UEL: Not determined | VAPOR DENSITY (AIR = 1) > 1 |
| AUTOIGNITION TEMPERATURE 793° F (423° C) | EVAPORATION RATE (WATER = 1) < 1 |

SECTION 10 - STABILITY AND REACTIVITY

| | |
|---------------------------------------|--|
| STABILITY UNSTABLE: STABLE: XXX | CONDITIONS TO AVOID: Extreme temperatures, open flames |
|---------------------------------------|--|

INCOMPATIBILITY (MATERIALS TO AVOID): Strong oxidizers, strong acids

HAZARDOUS DECOMPOSITION OR BYPRODUCTS: Decomposition will not occur if handled and stored properly. In case of a fire, oxides of carbon, hydrocarbons, fumes, and smoke may be produced.

| | |
|---|---------------------------|
| HAZARDOUS POLYMERIZATION MAY OCCUR: WILL NOT OCCUR: XXX | CONDITIONS TO AVOID: None |
|---|---------------------------|

SECTION 11 - TOXICOLOGICAL INFORMATION

| Hazardous Components | CAS # EINECS # | LD50 of Ingredient (Specify Species and Route) | LC50 of Ingredient (Specify Species) |
|----------------------|-----------------------|---|---|
| Ethanol | 64-17-5 200-578-6 | 3450 mg / kg Oral - mouse | 20,000 ppm / 10H Inhalation - rat |
| Glyoxal solution | 107-22-2 203-474-9 | 2960 mg / kg Oral - rat | 2410 mg / m3 Inhalation - rat |
| Acetic acid (a) | 64-19-7 200-580-7 | 3310 mg / kg Oral - rat | 5620 ppm / 1H Inhalation - rat |
| | | | |
| | | | |
| | | | |
| | | | |

SECTION 12 - ECOLOGICAL INFORMATION

No data are available on the adverse effects of this material on the environment. Neither COD nor BOD data are available. Based on the chemical composition of this product it is assumed that the mixture can be treated in an acclimatized biological waste treatment plant system in limited quantities. However, such treatment should be evaluated and approved for each specific biological system. None of the ingredients in this mixture are classified as a Marine Pollutant.

SECTION 13 - DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD: According to the European Waste Catalogue, waste codes are application specific and should be assigned by the user based on the application for which the product is used. Dispose of in accordance with Local, State, and Federal Regulations. This product may produce hazardous vapors or fumes in a closed disposal container creating a dangerous environment. Refer to "40 CFR Protection of Environment Parts 260 - 299" for complete waste disposal regulations. Consult your local, state, or Federal Environmental Protection Agency before disposing of any chemicals. Do not flush to sanitary sewer or waterway.

SECTION 14 - TRANSPORT INFORMATION

| | |
|--|---|
| PROPER SHIPPING NAME: Not Regulated | IATA HAZARD CLASS / Pack Group: Not regulated |
| DOT HAZARD CLASS / Pack Group: Not regulated | IMDG HAZARD CLASS: Not regulated |
| REFERENCE: Not Applicable | RID/ADR Dangerous Goods Code: Not regulated |
| UN / NA IDENTIFICATION NUMBER: None | UN TDG Class / Pack Group: Not regulated |
| LABEL: None Required | |
| HAZARD SYMBOLS: None | |

Note: Transportation information provided is for reference only. Client is urged to consult CFR 49 parts 100 - 177, IMDG, IATA, EU, United Nations TDG, and WHMIS (Canada) TDG information manuals for detailed regulations and exceptions covering specific container sizes, packaging materials and methods of shipping.

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SECTION 15 - REGULATORY INFORMATION

TSCA (USA - Toxic Substance Control Act)

All components of this product are listed on the U.S. Toxic Substances Control Act Chemical Inventory (TSCA Inventory) or are exempted from listing because a Low Volume Exemption has been granted in accordance with 40 CFR 723.50.

SARA TITLE III (USA - Superfund Amendments and Reauthorization Act)

311/312 Hazard Categories
Immediate health, fire hazard

313 Reportable Ingredients:
None

CERCLA (USA - Comprehensive Response Compensation and Liability Act)

(a) The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) has notification requirements for releases or spills to the environment of the Reportable Quantity (RQ for this mixture > 24000 lbs) or greater amounts, according to 40 CFR 302.

CPR (Canadian Controlled Products Regulations)

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

IDL (Canadian Ingredient Disclosure List)

Components of this product identified by CAS number and listed on the Canadian Ingredient Disclosure List are shown in Section 2.

DSL / NDSL (Canadian Domestic Substances List / Non-Domestic Substances List)

Components of this product identified by CAS number are listed on the DSL or NDSL and may or may not be listed in Section 2 of this document. Only ingredients classified as "hazardous" are listed in Section 2 unless otherwise indicated.

EINECS (European Inventory of Existing Commercial Chemical Substances)

Components of this product identified by CAS numbers are on the European Inventory of Existing Commercial Chemical Substances.

WGK Water Quality Index: 1

RISK PHRASES:

R36/38 Irritating to eyes and skin

SYMBOL(S) REQUIRED FOR LABEL

Irritant



SAFETY PHRASES:

S7 Keep container tightly closed.
S24/25 Avoid contact with skin and eyes

SECTION 16 - OTHER INFORMATION

Notes & full R-Phrase text

R10 Flammable.
R11 Highly flammable.
R20 Harmful by inhalation.
R35 Causes severe burns.

R36/38 Irritating to eyes and skin
R43 May cause sensitization by skin contact.
R68 Possible risks of irreversible effects.

HMIS HAZARD RATINGS

| | | | |
|-------------------------------|---|--|-------------|
| HEALTH | 2 | 0 = INSIGNIFICANT | 3 = HIGH |
| FLAMMABILITY | 2 | 1 = SLIGHT | 4 = EXTREME |
| REACTIVITY | 0 | 2 = MODERATE | |
| PERSONAL PROTECTIVE EQUIPMENT | G | Safety Glasses, Gloves, Vapor Respirator | |

REVISION SUMMARY:

This MSDS has been revised in the following sections: No revisions available

MSDS Prepared by: Chem-Tel, Inc.
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The information contained herein is believed to be accurate but is not warranted to be so. Data and calculations are based on information furnished by the manufacturer of the product and manufacturers of the components of the product. Users are advised to confirm in advance of need that information is current, applicable and suited to the circumstances of use. Vendor assumes no responsibility for injury to vendee or third persons proximately caused by the material if reasonable safety procedures are not adhered to as stipulated in the data sheet. Furthermore, vendor assumes no responsibility for injury caused by abnormal use of this material even if reasonable safety procedures are followed. Any questions regarding this product should be directed to the manufacturer of the product as described in Section 1.