SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Shandon Cytospin® Collection Fluid

PART NUMBER: 230001
GENERAL USE: Cytology collection fluid
PRODUCT DESCRIPTION: Clear green flammable liquid, characteristic alcohol odor

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

ADDRESS (NUMBER, STREET, P.O. BOX) (CITY, STATE AND ZIP CODE)
171 Industry Drive Pittsburgh, PA 15275

DATE PREPARED: September 17, 2003

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

ADDRESS (NUMBER, STREET, P.O. BOX) (CITY, STATE AND ZIP CODE)
93/96 Chadwick Road, Astmoor Runcorn, Cheshire WA7 1PR

SECTION 2 - HAZARDOUS INGREDIENTS

<table>
<thead>
<tr>
<th>HAZARDOUS COMPONENTS</th>
<th>% (by weight)</th>
<th>CAS #</th>
<th>EINECS #</th>
<th>Hazard Symbol</th>
<th>RISK PHRASES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethanol</td>
<td>30 - 60</td>
<td>64-17-5</td>
<td>200-578-6</td>
<td>F</td>
<td>R-11</td>
</tr>
<tr>
<td>Methyl alcohol (a,b,c)</td>
<td>1 - 5</td>
<td>67-56-1</td>
<td>200-659-6</td>
<td>F, T</td>
<td>R-11, 23/24/25, 39</td>
</tr>
<tr>
<td>Isopropyl alcohol</td>
<td>1 - 5</td>
<td>67-63-0</td>
<td>200-661-7</td>
<td>F, Xi</td>
<td>R-11, 36, 67</td>
</tr>
</tbody>
</table>

(a,c) See Section 15

(b) Indicates that the Resource Conservation and Recovery Act (RCRA) has determined the waste for this chemical is listed as hazardous and must be handled according to regulations in 40 CFR 260-281.

SECTION 3 - HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW
Flammable liquid. Contains methanol, harmful if swallowed. Product cannot be made non-poisonous. Contact with skin and eyes may cause irritation. Hazard symbols for this product - F, Xi. Risk Phrases - R10, 20/21/22

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, staggering gait, and coma. Ingestion of a large quantity of this product will result in methyl alcohol poisoning.

CARCINOGENICITY
NTP? No
IARC MONOGRAPHS? No
OSHA REGULATED? No
**GENERAL HAZARDS:** Product is flammable. Products of combustion include compounds of carbon, hydrogen and oxygen, including carbon monoxide.

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

**STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:** CAUTION - FLAMMABLE - 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 and SARA Title III, Section 313 40 CFR 372 for detailed instructions concerning reporting requirements. Do not discharge into lakes, ponds, streams or public waters.

**UNUSUAL FIRE AND EXPLOSION HAZARDS:** Self - contained respiratory equipment; cool containers to prevent pressure buildup and possible explosion when exposed to extreme heat. Caution - material is flammable!

**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

**HAZARDOUS COMBUSTION PRODUCTS:** Smoke, fumes, oxides of carbon

**SECTION 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION**

<table>
<thead>
<tr>
<th>HAZARDOUS COMPONENTS</th>
<th>NIOSH</th>
<th>ACGIH</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>TWA ppm</td>
<td>TWA mg/m³</td>
</tr>
<tr>
<td>Ethanol</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Methyl alcohol (a,b,c)</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Isopropyl alcohol</td>
<td>400</td>
<td>980</td>
</tr>
</tbody>
</table>

**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.
SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE AND ODOR
Clear green liquid, characteristic alcohol odor

VAPOR PRESSURE
43 mm Hg @ 20° C

pH
4.7 - 6.7

SPECIFIC GRAVITY (WATER = 1)
0.930 - 0.933

BOILING POINT / BOILING RANGE
183° F (83.8° C)

SOLUBILITY IN WATER
Complete

FLASH POINT
85° F (29.4° C) TCC

VISCOSITY
Like that of water

FLAMMABLE LIMITS
LEL: 3.3%  UEL: 19%

VAPOR DENSITY (AIR = 1)
> 1

AUTOIGNITION TEMPERATURE
793° F (423° C)

EVAPORATION RATE (WATER = 1)
< 1

SECTION 10 - STABILITY AND REACTIVITY

STABILITY
UNSTABLE:

CONDITIONS TO AVOID: Extreme temperatures, open flames, sparks

STABLE: XXX

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: 

CONDITIONS TO AVOID: None

WILL NOT OCCUR: XXX

SECTION 11 - TOXICOLOGICAL INFORMATION

Hazardous Components

<table>
<thead>
<tr>
<th>CAS #</th>
<th>EINECS #</th>
<th>LD50 of Ingredient (Specify Species and Route)</th>
<th>LC50 of Ingredient (Specify Species)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethanol</td>
<td>64-17-5</td>
<td>3450 mg / kg Oral - mouse</td>
<td>20,000 ppm / 10H Inhalation - rat</td>
</tr>
<tr>
<td></td>
<td>200-578-6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Methyl alcohol (a,b,c)</td>
<td>67-56-1</td>
<td>9100 mg / kg Oral - rat</td>
<td>145,000 ppm / 4H Inhalation - rat</td>
</tr>
<tr>
<td></td>
<td>200-659-6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Isopropyl alcohol</td>
<td>67-63-0</td>
<td>5840 mg / kg Oral - rat</td>
<td>22,500 ppm / 4H Inhalation - rat</td>
</tr>
<tr>
<td></td>
<td>200-661-7</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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: Ethyl alcohol mixture

DOT HAZARD CLASS / Pack Group: 3 / III

REFERENCE: 49 CFR 173.150, .203, .242

UN / NA IDENTIFICATION NUMBER: UN 1170

LABEL: FLAMMABLE LIQUID

HAZARD SYMBOLS: F

IATA HAZARD CLASS / Pack Group: 3 / III

IMDG HAZARD CLASS: 3 / III

RID/ADR Dangerous Goods Code: 3 (3B)

UN TDG Class / Pack Group: 3 / III

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.
MATERIAL SAFETY DATA SHEET

PRODUCT NAME: Shandon Cytospin® Collection Fluid
September 17, 2003

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, flammable hazard

313 Reportable Ingredients:
(a) A "Yes" in the SARA TITLE III column in Section 2 indicates a toxic chemical subject to annual reporting requirements of Section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 and of 40 CFR 372.

CERCLA (USA - Comprehensive Response Compensation and Liability Act)
(c) 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 numbers are on the European Inventory of Existing Commercial Chemical Substances.

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

WGK Water Quality Index: 1

SECTION 16 - OTHER INFORMATION

Notes & full R-Phrase text
R10 Flammable.
R20/21/22 Harmful by inhalation, in contact with skin and if swallowed

R23/24/25 Toxic by inhalation, in contact with skin and if swallowed
R36 Irritating to eyes.
R39 Danger of very serious irreversible effects.
R67 Vapours may cause drowsiness and dizziness.

HMIS HAZARD RATINGS

| HEALTH | 2 | 0 = INSIGNIFICANT | 3 = HIGH |
| FLAMMABILITY | 3 | 1 = SLIGHT | 4 = EXTREME |
| REACTIVITY | 0 | 2 = MODERATE |

PERSONAL PROTECTIVE EQUIPMENT

| G | Safety Glasses, Gloves, Vapor Respirator |

REVISION SUMMARY:
No revisions available

This MSDS has been revised in the following sections:

MSDS Prepared by: Chem-Tel, Inc.
1305 N. Florida Ave.
Tampa, Florida USA 33602    (800) 255-3924    Outside USA (813) 248-0573

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.