1. IDENTIFICATION OF THE SUBSTANCE / PREPARATION AND COMPANY

PRODUCT NAME: VERHOEFF’S SOLUTION 1

PRODUCT CODE: 64142x

SUPPLIER: Clin-Tech Limited
Unit G, Perram Works
Merrow Lane
Guildford, Surrey
GU4 7BN
UK

Telephone: +44 (0)1483 301902
Fax: +44 (0)1483 301907
Email: info@clin-tech.co.uk
Website: www.clin-tech.co.uk

2. HAZARDS IDENTIFICATION

CLASSIFICATION ACCORDING TO REGULATION (EC) No 1272/2008 [EU-GHS/CLP]
- Flammable liquids (Category 2) H225
- Acute toxicity, Oral (Category 4) H302
- Skin Irritation (Category 3) H316
- Eye Irritation (Category 2B) H320
- Specific target organ toxicity - single exposure (Category 2) H371

LABELLING ACCORDING TO REGULATION (EC) No 1272/2008 [EU-GHS/CLP]

DANGER

Hazard statement(s)
- H225 Highly Flammable liquid and vapour
- H302 Harmful if swallowed
- H316 Causes mild skin irritation
- H320 Causes eye irritation
- H371 May cause damage to organs

Precautionary statement(s)
- P210 Keep away from heat/sparks/open flames/hot surfaces — No smoking
- P260 Do not breathe mist/vapours/spray
- P301+310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
- P305+351+338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
3. COMPOSITION / INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>EC #</th>
<th>CAS #</th>
<th>Content</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>ETHANOL C₂H₅OH</td>
<td>200-578-6</td>
<td>64-17-5</td>
<td>60-100%</td>
<td>Flam. Liq. 2</td>
</tr>
<tr>
<td>METHANOL CH₃OH</td>
<td>200-659-6</td>
<td>67-56-1</td>
<td>3-10%</td>
<td>Flam. Liq.; Acute Tox. 3; STOT SE 1 H₂₂₅ H₃₀₁ H₃₁₁ H₃₃₁ H₃₇₀</td>
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<tr>
<td>HAEMA-TOXYLIN [CI 75920]</td>
<td>208-237-3</td>
<td>517-28-2</td>
<td>1-10%</td>
<td>Acute Tox. 4, Skin Irrit. 2, Eye Irrit. 2, STOT SE 3 H₃₀₂ H₃₁₅ H₃₁₉ H₃₃₅</td>
</tr>
<tr>
<td>7,11b-dihydroindeno[2,1-c]chromene-3,4,6a,9,10(6H)-pentol</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

4. FIRST-AID MEASURES

INHALATION
Move the exposed person to fresh air at once. Get medical attention if any discomfort continues. When breathing is difficult, properly trained personnel may assist affected person by administering oxygen. Perform artificial respiration if breathing has stopped. Keep the affected person warm and at rest. Get prompt medical attention.

INGESTION
Do not induce vomiting. Never make an unconscious person vomit or drink fluids. Get medical attention immediately. Show the label or this document to the physician.

SKIN CONTACT
Remove contaminated clothes and rinse skin thoroughly with water. If symptoms occur seek medical attention.

EYE CONTACT
Make sure to remove any contact lenses from the eyes before rinsing. Promptly wash eyes with plenty of water while lifting the eyelids. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

5. FIRE-FIGHTING MEASURES

EXTINGUISHING MEDIA
Use: Dry chemical, Alcohol-resistant foam, Water spray, or Carbon dioxide.

UNUSUAL FIRE AND EXPLOSION HAZARDS
May travel considerable distance to source of ignition and flash back. May form explosive or toxic mixtures with air. Vapour explosion and poison hazard indoors, outdoors and in sewers. Forms harmful carbon oxides on combustion.

PROTECTIVE MEASURES IN FIRE
Self contained breathing apparatus and full protective clothing must be worn in case of fire.
6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS
Wear protective clothing as described in Section 8 of this SDS. Evacuate personnel from the affected area. Extinguish all ignition sources. Avoid sparks, flames, heat. Ventilate area.

ENVIRONMENTAL PRECAUTIONS
Do not allow spillage to enter watercourses, drains or sewers. Fire Brigade and Local authority must be informed if this happens as a potential explosive hazard may be created. Stop leak if possible without risk.

SPILL CLEAN-UP METHODS
Provide ventilation and confine spill. Do not allow runoff to sewer. Inform Authorities if large amounts are involved. Absorb with vermiculite, dry sand or earth – do NOT use sawdust or other combustible materials. Shovel up residue and collect for authorised disposal (see section 13). Flush area with plenty of water.

7. HANDLING & STORAGE

USAGE PRECAUTIONS
Keep away from heat, sparks and open flame. Avoid spilling, skin and eye contact. Risk of vapour concentration on the floor and in low-lying areas. Static electricity and formation of sparks must be prevented.

STORAGE PRECAUTIONS
Flammable/combustible - Keep away from oxidisers, heat and flames. Store in tightly closed original container in a cool, dry well-ventilated place. Ground container and transfer equipment to eliminate static electric sparks. May attack some plastics, rubber and coatings.

STORAGE CLASS
Flammable liquid storage.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

<table>
<thead>
<tr>
<th>Name</th>
<th>Std</th>
<th>8h TWA</th>
<th>STEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>ETHANOL</td>
<td>WEL</td>
<td>1000 ppm</td>
<td>1920 mg/m³</td>
</tr>
<tr>
<td>METHANOL</td>
<td>WEL (skin)</td>
<td>200 ppm</td>
<td>260 mg/m³</td>
</tr>
</tbody>
</table>

WEL – Workplace Exposure Limit; 8h TWA – 8-hour Time-Weighted Average; STEL – Short-Term EL

ENGINEERING MEASURES
Provide adequate general and local exhaust ventilation. Provide explosion-proof ventilation for high concentrations.

PROTECTIVE EQUIPMENT
HAND PROTECTION
Use protective gloves made of: Butyl rubber (immersion protection) or Nitrile rubber (splash protection). The most suitable glove should be chosen in consultation with the gloves supplier, who can inform about the breakthrough time of the glove material.

EYE PROTECTION
Wear approved, tight-fitting safety glasses where splashing is probable.

RESPIRATORY EQUIPMENT
Self-contained breathing apparatus where high vapour levels are likely.

OTHER PROTECTION
Provide eyewash station.

HYGIENE MEASURES
DO NOT SMOKE IN WORK AREA! Wash at the end of each work shift and before eating, smoking and using the toilet. Promptly remove any clothing that becomes contaminated. Wash promptly with soap & water if skin becomes contaminated.

9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>APPEARANCE</th>
<th>Brown Liquid</th>
</tr>
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<tbody>
<tr>
<td>ODOUR</td>
<td>Pungent (alcohol)</td>
</tr>
<tr>
<td>(SOLUBILITY) / MISCIBLE WITH:</td>
<td>Water; Ethanol; Ether; Benzene; Organic solvents</td>
</tr>
<tr>
<td>MELTING POINT</td>
<td>~ -114 °C</td>
</tr>
<tr>
<td>BOILING POINT</td>
<td>~ 78 °C</td>
</tr>
<tr>
<td>FLASH POINT (CLOSED CUP)</td>
<td>~ 13 °C</td>
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<tr>
<td>AUTO-IGNITION TEMP</td>
<td>~ 790 °C</td>
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<tr>
<td>SPECIFIC GRAVITY</td>
<td>0.79 @ 20 °C</td>
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<tr>
<td>VAPOUR PRESSURE</td>
<td>58.1 hPa @ 20 °C</td>
</tr>
<tr>
<td>EXPLOSION LIMIT – UPPER</td>
<td>19 %</td>
</tr>
<tr>
<td>EXPLOSION LIMIT – LOWER</td>
<td>3.3 %</td>
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10. STABILITY AND REACTIVITY

STABILITY
Stable under normal temperature conditions and recommended use.

CONDITIONS TO AVOID
Avoid heat, flames and other sources of ignition. Extremes of temperature, direct sunlight.

INCOMPATIBLE MATERIALS
Strong oxidizers, Acids, Reducing agents, Alkali metals.
Can react vigorously with chloroform in the presence of sodium and sodium hydroxide.

HAZARDOUS DECOMPOSITION PRODUCTS
During fire, toxic gases (CO, CO₂) are formed.
11. TOXICOLOGICAL INFORMATION

INHALATION
May be harmful by inhalation. May cause respiratory tract irritation.

INGESTION
Harmful if swallowed.

SKIN CONTACT
May be harmful if absorbed through the skin. May cause skin irritation.

EYE CONTACT
Causes serious eye irritation.

SIGNS AND SYMPTOMS OF EXPOSURE
Central nervous system depression, narcosis, nausea, dizziness, damage to the heart, gastrointestinal disturbance, may cause convulsions.

12. ECOLOGICAL INFORMATION

ECOTOXICITY
Not regarded as dangerous for the environment. However, the product should not be allowed to enter drains or water courses or be deposited where it can affect ground or surface waters.

13. DISPOSAL CONSIDERATIONS

DISPOSAL METHODS
Incinerate in suitable combustion chamber. Dispose of waste and residues in accordance with local authority requirements.

14. TRANSPORT INFORMATION

<table>
<thead>
<tr>
<th></th>
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<tr>
<td>RID / ADR</td>
<td>1170</td>
<td>3</td>
<td>II</td>
<td>Ethanol Solution</td>
</tr>
<tr>
<td>IATA</td>
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<td>3</td>
<td>II</td>
<td>Ethanol Solution</td>
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<tr>
<td>IMDG</td>
<td>1170</td>
<td>3</td>
<td>II</td>
<td>Ethanol Solution</td>
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SIGNAGE

ENVIRONMENTAL HAZARDS

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<th>IMDG</th>
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<tbody>
<tr>
<td>Flammable Liquid</td>
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15. REGULATORY INFORMATION

STATUTORY INSTRUMENTS
This MSDS complies with regulation (EC) no. 1907/2006.
Workplace Exposure Limits EH40/2011.
16. OTHER INFORMATION

GENERAL INFORMATION
This safety data sheet covers all codes for this product.

REVISION INFORMATION

<table>
<thead>
<tr>
<th>Revision No.</th>
<th>03</th>
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<td>Revision Date</td>
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<tr>
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HAZARD STATEMENTS IN FULL

- H225 Highly Flammable liquid and vapour
- H301 Toxic if swallowed
- H302 Harmful if swallowed
- H311 Toxic in contact with skin
- H316 Causes mild skin irritation
- H320 Causes eye irritation
- H331 Toxic if inhaled
- H370 Causes damage to organs
- H371 May cause damage to organs