SAFETY DATA SHEET
Keratex Hoof Hardener

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name          Keratex Hoof Hardener
SDS number             11332

1.2. Relevant identified uses of the substance or mixture and uses advised against

Identified uses        A patented hardener for equine hooves.
Uses advised against   Any use other than those identified.

1.3. Details of the supplier of the safety data sheet

Supplier               Penleigh Irving Ltd t/a Keratex Hoofcare
                       25 Fairwood Road
                       Dilton Marsh
                       Westbury
                       Wiltshire
                       BA13 3SN
                       Tel: +44 (0)1373 827 649
                       Fax: +44 (0)1373 827 007
                       info@keratex.com

1.4. Emergency telephone number

Emergency telephone    +44 (0)7969 467 388

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification
Physical hazards       Not Classified
Health hazards         Acute Tox. 4 - H302 Acute Tox. 4 - H332 Skin Corr. 1B - H314 Skin Sens. 1 - H317 Carc. 2 - H351 STOT SE 2 - H371
Environmental hazards  Not Classified

Classification (67/548/EEC or 1999/45/EC)
Xn;R20/21/22. Carc. Cat. 3;R40. C;R34. Xi;R37. R43.

2.2. Label elements

Pictogram
![Pictogram]

Signal word           Danger

Hazard statements
Keratex Hoof Hardener
H317 May cause an allergic skin reaction.
H314 Causes severe skin burns and eye damage.
H371 May cause damage to organs .
H351 Suspected of causing cancer.
H302+H332 Harmful if swallowed or if inhaled.

Precautionary statements
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P261 Avoid breathing vapour/spray.
P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/doctor.
P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
P405 Store locked up.
P501 Dispose of contents/container in accordance with local regulations.

Contains
ALUMINIUM CHLORIDE, hydrochloric acid, FORMALDEHYDE ...%, METHANOL

Supplementary precautionary statements
P264 Wash contaminated skin thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
P272 Contaminated work clothing should not be allowed out of the workplace.
P302+P352 IF ON SKIN: Wash with plenty of water.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P363 Wash contaminated clothing before reuse.
P403+P233 Store in a well-ventilated place. Keep container tightly closed.

2.3. Other hazards
This substance is not classified as PBT or vPvB according to current EU criteria.

SECTION 3: Composition/Information on ingredients

3.2. Mixtures

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS number</th>
<th>EC number</th>
<th>REACH registration number</th>
<th>Classification (67/548/EEC or 1999/45/EC)</th>
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<td>200-289-5</td>
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<td>C;R34 Xi;R37</td>
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<tr>
<td>STOT SE 3 - H335</td>
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Keratex Hoof Hardener

FORMALDEHYDE ...

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<th>EC number: 200-001-8</th>
<th>REACH registration number: 01-2119488953-20-XXXX</th>
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Classification
Skin Corr. 1B - H314
Skin Sens. 1 - H317
Carc. 2 - H351
Acute Tox. 3 - H301
Acute Tox. 3 - H311
Acute Tox. 3 - H331
STOT SE 3 - H335

Classification (67/548/EEC or 1999/45/EC)
Carc. Cat. 3; R40 T; R23/24/25 C; R34 R43

METHANOL

<table>
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<tr>
<th>CAS number: 67-56-1</th>
<th>EC number: 200-659-6</th>
<th>REACH registration number: 01-2119433307-44-XXXX</th>
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Classification
Flam. Liq. 2 - H225
Acute Tox. 3 - H301
Acute Tox. 3 - H311
Acute Tox. 3 - H331

Classification (67/548/EEC or 1999/45/EC)
F; R11 T; R23/24/25, R39/23/24/25

The Full Text for all R-Phrases and Hazard Statements are Displayed in Section 16.

Composition comments
The formulation and application of this product is governed by one or more patents.

SECTION 4: First aid measures

4.1. Description of first aid measures

General information
Remove affected person from source of contamination. Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing.

Inhalation
Clean nose and mouth with water. If unconscious or breathing is irregular artificial respiration may be administered by suitably qualified first-aiders. If symptoms persist, get medical attention.

Ingestion
Rinse mouth thoroughly with water. Give plenty of water to drink. Give milk instead of water if readily available. Keep affected person under observation. Do not induce vomiting. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention immediately. Show this Safety Data Sheet to the medical personnel.

Skin contact
Remove affected person from source of contamination. Remove contaminated clothing. Wash skin thoroughly with soap and water. Get medical attention if irritation persists after washing.

Eye contact
Rinse immediately with plenty of water. Remove any contact lenses and open eyelids wide apart. Continue to rinse for at least 15 minutes. Get medical attention if irritation persists after washing. Show this Safety Data Sheet to the medical personnel.

4.2. Most important symptoms and effects, both acute and delayed

4.3. Indication of any immediate medical attention and special treatment needed

Notes for the doctor
Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media
The product is not flammable. Use fire-extinguishing media suitable for the surrounding fire.
Keratex Hoof Hardener

5.2. Special hazards arising from the substance or mixture

Specific hazards
In case of fire, toxic and corrosive gases may be formed. On contact with ordinary metals, ((galvanised) steel, aluminium) corrosion may occur and generate highly flammable hydrogen gas.

Hazardous combustion products
Heating may generate the following products: Toxic and corrosive gases or vapours.

5.3. Advice for firefighters

Special protective equipment for firefighters
Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions
In case of spills, beware of slippery floors and surfaces. Avoid inhalation of vapours and contact with skin and eyes. Use suitable respiratory protection if ventilation is inadequate.

6.2. Environmental precautions

Environmental precautions
Spillages or uncontrolled discharges into watercourses must be reported immediately to the Environmental Agency or other appropriate regulatory body.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up
Absorb in vermiculite, dry sand or earth and place into containers. Containers with collected spillage must be properly labelled with correct contents and hazard symbol. Packaging must be labeled with a label that states: "Contains a substance covered by the Danish work regulation with respect to cancer risk".

6.4. Reference to other sections

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Usage precautions
Provide adequate ventilation. Avoid spilling. Avoid contact with skin and eyes. Avoid inhalation of vapours and spray/mists.

7.2. Conditions for safe storage, including any incompatibilities

Storage precautions
Store in tightly-closed, original container in a dry, cool and well-ventilated place.

7.3. Specific end use(s)

SECTION 8: Exposure Controls/personal protection

8.1. Control parameters

Occupational exposure limits
Keratex Hoof Hardener

glycerol
Long-term exposure limit (8-hour TWA): WEL 10 mg/m3

hydrochloric acid
Long-term exposure limit (8-hour TWA): WEL 1 ppm 2 mg/m3
Short-term exposure limit (15-minute): WEL 5 ppm 8 mg/m3

FORMALDEHYDE...
Long-term exposure limit (8-hour TWA): WEL 2 ppm 2.5 mg/m3
Short-term exposure limit (15-minute): WEL 2 ppm 2.5 mg/m3

METHANOL
Long-term exposure limit (8-hour TWA): WEL 200 ppm 266 mg/m3
Short-term exposure limit (15-minute): WEL 250 ppm 333 mg/m3
Sk
WEL = Workplace Exposure Limit
Sk = Can be absorbed through skin.

ALUMINIUM CHLORIDE (CAS: 7446-70-0)

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<tr>
<th>DNEL</th>
<th>Industry - Inhalation; Long term systemic effects: 0.2 mg/m3</th>
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<td>Industry - Inhalation; Long term local effects: 0.2 mg/m3</td>
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<td></td>
<td>Industry - Inhalation; Short term local effects: 2 mg/m3</td>
</tr>
<tr>
<td>PNEC</td>
<td>- Fresh water; 25 µg/l</td>
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<tr>
<td></td>
<td>- Marine water; 2.5 µg/l</td>
</tr>
<tr>
<td></td>
<td>- Intermittent release; 74 µg/l</td>
</tr>
<tr>
<td></td>
<td>- STP; 100 mg/l</td>
</tr>
<tr>
<td></td>
<td>- Sediment; 3.736 mg/kg</td>
</tr>
</tbody>
</table>

glycerol (CAS: 56-81-5)

| DNEL | Industry - Inhalation; Long term local effects: 56 mg/m3    |
|      | Consumer - Inhalation; Long term local effects: 33 mg/m3    |
|      | Consumer - Oral; Long term systemic effects: 229 mg/kg/day  |
| PNEC | - Fresh water; 885 µg/l                                     |
|      | - Marine water; 88.5 µg/l                                   |
|      | - Sediment (Marinewater); 8.85 mg/l                         |
|      | - water; 1000 mg/l                                          |
|      | - Sediment (Freshwater); 3.3 mg/kg                          |
|      | - Sediment (Marinewater); 330 µg/kg                         |
|      | - Soil; 141 µg/kg                                           |

hydrochloric acid

as hydrogen chloride (HCl)
Keratex Hoof Hardener

FORMALDEHYDE ...% (CAS: 50-00-0)

DNEL

Industry - Inhalation; Long term systemic effects: 9 mg/m^3
Industry - Inhalation; Long term local effects: 0.5 mg/m^3
Industry - Inhalation; Short term local effects: 1 mg/m^3
Industry - Dermal; Long term systemic effects: 240 mg/kg/day
Industry - Dermal; Long term local effects: 37 mg/kg/day
Consumer - Inhalation; Long term local effects: 0.1 mg/m^3
Consumer - Dermal; Long term systemic effects: 102 mg/kg/day
Consumer - Dermal; Long term local effects: 12 µg/cm^2
Consumer - Oral; Long term systemic effects: 4.1 mg/kg/day

PNEC

- Fresh water; 0.47 mg/l
- Marine water; 0.47 mg/l
- Intermittent release; 4.7 mg/l
- STP; 0.19 mg/l
- Sediment (Freshwater); 2.44 mg/kg
- Sediment (Marinewater); 2.44 mg/kg
- Soil; 0.21 mg/kg

METHANOL (CAS: 67-56-1)

DNEL

Industry - Inhalation; Long term systemic effects: 260 mg/m^3
Industry - Inhalation; Short term systemic effects: 260 mg/m^3
Industry - Inhalation; Long term local effects: 260 mg/m^3
Industry - Inhalation; Short term local effects: 260 mg/m^3
Industry - Dermal; Long term systemic effects: 40 mg/kg/day
Industry - Dermal; Short term local effects: 40 mg/kg/day
Consumer - Inhalation; Long term systemic effects: 50 mg/m^3
Consumer - Inhalation; Short term local effects: 50 mg/m^3
Consumer - Dermal; Long term systemic effects: 8 mg/kg/day
Consumer - Oral; Long term systemic effects: 8 mg/kg/day

PNEC

- Fresh water; 154 mg/l
- Marine water; 15.4 mg/l
- Intermittent release; 1540 mg/l
- STP; 100 mg/l
- Sediment (Freshwater); 570.4 mg/kg
- Soil; 23.5 mg/kg

8.2. Exposure controls

Appropriate engineering controls
Provide adequate general and local exhaust ventilation.

Eye/face protection
Wear tight-fitting, chemical splash goggles or face shield.

Hand protection
Chemical-resistant, impervious gloves complying with an approved standard should be worn if a risk assessment indicates skin contact is possible.

Other skin and body protection
Wear appropriate clothing to prevent any possibility of liquid contact and repeated or prolonged vapour contact.

Hygiene measures
Do not smoke in work area. Wash hands 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 and water if skin becomes contaminated. Use appropriate skin cream to prevent drying of skin. When using do not eat, drink or smoke.

Respiratory protection
If ventilation is inadequate, suitable respiratory protection must be worn.

SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties
Keratex Hoof Hardener

Appearance
Opaque liquid. Liquid.

Colour
White.

Odour
Pungent.

pH
pH (concentrated solution): >7

Initial boiling point and range
100°C. °C @

Flash point
Technically not feasible. Aqueous solution.

Vapour pressure
40 mm Hg @ °C

Solubility(ies)
Miscible with water.

9.2. Other information

SECTION 10: Stability and reactivity

10.1. Reactivity
The following materials may react strongly with the product: Strong acids. Chlorohydrocarbons.

10.2. Chemical stability

Stability
Stable under normal conditions of storage and use. See section 7.

10.3. Possibility of hazardous reactions
Will not occur under normal conditions.

10.4. Conditions to avoid
Avoid freezing.

10.5. Incompatible materials

Materials to avoid
Hydrochloric acid and/or hydrogen chloride containing materials may produce carcinogenic chloromethyl ethers.

10.6. Hazardous decomposition products
Decomposition can lead to the formation of toxic gases or fumes, including carbon monoxide (CO) and carbon dioxide (CO2). Hydrogen chloride (HCl).

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Toxicological effects
No data is available for this preparation, which is classified according to the calculation method of EC Directive 88/379/EEC. and read across to EC Directive 1272/2008 and its subsequent ATPs.

Acute toxicity - oral
ATE oral (mg/kg)
1,899.33523267

Acute toxicity - dermal
ATE dermal (mg/kg)
5698.00569801

Acute toxicity - inhalation
Keratex Hoof Hardener

ATE inhalation (gases ppm)
17094.01709402

ATE inhalation (vapours mg/l)
72.53089964

ATE inhalation (dusts/mists mg/l)
12.21001221

**Inhalation**
Harmful: danger of serious damage to health by prolonged exposure through inhalation.

**Ingestion**
Harmful if swallowed.

**Skin contact**
Irritating to skin.

**Eye contact**
Irritating to eyes.

**Route of entry**
Inhalation Skin absorption

**Target organs**
Respiratory system, lungs

### SECTION 12: Ecological Information

**Ecotoxicity**
The product components are not classified as environmentally hazardous. However, large or frequent spills may have hazardous effects on the environment.

**12.1. Toxicity**
Discharge of large quantities may kill fish and other aquatic life due to excessive changes in pH.

**12.2. Persistence and degradability**

**Persistence and degradability**
The product contains substances which are not expected to be biodegradable.

**12.3. Bioaccumulative potential**
The product does not contain any substances expected to be bioaccumulating.

**12.4. Mobility in soil**

**Mobility**
The product is miscible with water. May spread in water systems.

**12.5. Results of PBT and vPvB assessment**
This substance is not classified as PBT or vPvB according to current EU criteria.

**12.6. Other adverse effects**

### SECTION 13: Disposal considerations

**13.1. Waste treatment methods**

**General Information**

**Disposal methods**
Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority.

### SECTION 14: Transport Information

**14.1. UN number**
Keratex Hoof Hardener

UN No. (ADR/RID) 1760
UN No. (IMDG) 1760
UN No. (ICAO) 1760

14.2. UN proper shipping name
Proper shipping name (ADR/RID) CORROSIVE LIQUID, N.O.S. (ALUMINIUM CHLORIDE ANHYDROUS, hydrochloric acid)
Proper shipping name (IMDG) CORROSIVE LIQUID, N.O.S. (ALUMINIUM CHLORIDE ANHYDROUS, hydrochloric acid)
Proper shipping name (ICAO) CORROSIVE LIQUID, N.O.S. (ALUMINIUM CHLORIDE ANHYDROUS, hydrochloric acid)
Proper shipping name (ADN) CORROSIVE LIQUID, N.O.S. (ALUMINIUM CHLORIDE ANHYDROUS, hydrochloric acid)

14.3. Transport hazard class(es)
Not applicable.
ADR/RID class 8
ADR/RID subsidiary risk
ADR/RID label 8
IMDG class 8
IMDG subsidiary risk
ICAO class/division 8
ICAO subsidiary risk
Transport labels

14.4. Packing group
ADR/RID packing group III
IMDG packing group III
ICAO packing group III

14.5. Environmental hazards
Environmentally hazardous substance/marine pollutant
No.

14.6. Special precautions for user
EmS F-A, S-B
Emergency Action Code 2X
Hazard Identification Number (ADR/RID) 80
Tunnel restriction code (E)

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

National regulations
Control of Substances Hazardous to Health Regulations (as amended). (COSHH) Refer to Revised guidance 6th Edition 2013
Keratex Hoof Hardener

EU legislation

Guidance

Statutory conditions of use
15.2. Chemical safety assessment
No chemical safety assessment has been carried out.

SECTION 16: Other information

Revision comments
Classification calculated in accordance with CLP (EC 1272/2008). And translated into the language of this document as of the date below.

Revision date 16/02/2015
Revision 1
Supersedes date 27/01/2015
Risk phrases in full
NC Not classified.
R11 Highly 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.
R34 Causes burns.
R37 Irritating to respiratory system.
R39/23/24/25 Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed.
R40 Limited evidence of a carcinogenic effect.
R43 May cause sensitisation by skin contact.

Hazard statements in full
H225 Highly flammable liquid and vapour.
H301 Toxic if swallowed.
H302 Harmful if swallowed.
H311 Toxic in contact with skin.
H314 Causes severe skin burns and eye damage.
H317 May cause an allergic skin reaction.
H331 Toxic if inhaled.
H332 Harmful if inhaled.
H335 May cause respiratory irritation.
H351 Suspected of causing cancer.
H370 Causes damage to organs <<Organs>> if inhaled and in contact with skin.
H371 May cause damage to organs.
Keratex Hoof Hardener

Disclaimer
This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty, guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.