Section 1: Identification of the Substance and Supplier

Product name: Nuflor

Liquid containing 26 - 36% florfenicol

Recommended use: Broad spectrum antibacterial formulation for cattle and swine

Company details: MSD Animal Health, 33 Whakatiki Street, Upper Hutt

Phone: 0800 800 543  Fax: 0800 808 100

Website: www.msd-animal-health.co.nz

Hours: 8 am – 5 pm, Mon – Fri

Emergency telephone: 0800 764 766 (0800 POISON) 24 hours human health

0800 243 622 (0800 CHEMCALL) 24 hours

Date of preparation: September 2011

Section 2: Hazards Identification

Hazard classifications: 6.3A, 6.4A, 6.8A, 6.9B, 9.1A

Priority identifiers: DANGER

Ecotoxic

Secondary identifier:
- 6.3A May cause skin irritation
- 6.4A May cause eye irritation
- 6.8A May damage fertility or the unborn child from repeated oral exposure
- 6.9B May cause organ damage from repeated oral exposure at high doses
- 9.1A Very toxic to aquatic organisms with long-lasting effects

Risk & Safety Phrases:
- R62 Possible risk of impaired fertility
- R63 Possible risk of harm to the unborn child
- R36/38 Irritating to eyes and skin
- R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

Section 3: Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS number</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Florfenicol</td>
<td>73231-34-2</td>
<td>30%</td>
</tr>
<tr>
<td>N-Methyl-2-Pyrrolidone</td>
<td>872-50-4</td>
<td>20-30%</td>
</tr>
<tr>
<td>Propylene Glycol</td>
<td>57-55-6</td>
<td>10-20%</td>
</tr>
</tbody>
</table>

Section 4: First Aid Measures

Necessary first aid measures:

**SKIN CONTACT**: In case of skin contact, while wearing protective gloves, carefully remove any contaminated clothing, including shoes, and wash skin thoroughly with soap and water. If irritation or symptoms occur or persist, consult a doctor.

**EYE CONTACT**: In case of eye contact, immediately rinse eyes thoroughly with plenty of water. If wearing contact lenses, remove only after initial rinse, and
continue rinsing eyes for at least 15 minutes. If irritation occurs or persists, consult a doctor.

**INGESTION** Rinse mouth and drink a glass of water. Do not induce vomiting unless under the direction of a qualified medical professional or Poison Control Centre. If symptoms persist, consult a doctor.

**INHALATION** Remove to fresh air. If any trouble breathing, get immediate medical attention. Administer artificial respiration if breathing has ceased. If irritation or symptoms occur or persist, consult a doctor.

Required instructions For advice contact the National Poisons Centre 0800 POISON (0800 764 766) or a doctor.

Notes for medical personnel Inhalation: remove to fresh air & provide oxygen if breathing is difficult

**Section 5: Fire Fighting Measures**

<table>
<thead>
<tr>
<th>Type of hazard</th>
<th>Not classified as flammable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fire hazard properties</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Regulatory requirements</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Extinguishing media and methods</td>
<td>Carbon dioxide (CO2), extinguishing powder or water spray</td>
</tr>
<tr>
<td>Hazchem code</td>
<td>3Z</td>
</tr>
<tr>
<td>Recommended protective clothing</td>
<td>Wear full protective clothing and self-contained breathing apparatus (SCBA).</td>
</tr>
</tbody>
</table>

**Section 6: Accidental Release Measures**

| Emergency procedures | Wear chemical resistant gloves and overalls, facemask or goggles. Prevent further spillage. Adsorb spilled product and place in sealable container for disposal. Wash down affected area with water plus detergent. Absorb and collect washings and place in the same sealable container for disposal. Seek advice from the local authority regarding disposal. Avoid contamination of any water source or soil with product or empty container. |

**Section 7: Handling and Storage**

<table>
<thead>
<tr>
<th>Precautions for safe handling</th>
<th>Avoid contact with skin, eyes, and mucosa. Keep containers adequately sealed during material transfer, transport, or when not in use. See Section 8 (Exposure Controls) for additional guidance.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regulatory requirements</td>
<td>Signage required where quantities greater than 100L are present. Emergency response plan required where quantities greater than 100L are present.</td>
</tr>
<tr>
<td>Handling practices</td>
<td>Avoid contact with skin. Keep containers adequately sealed during material transfer, transport, or when not in use.</td>
</tr>
<tr>
<td>Approved handlers</td>
<td>Not required</td>
</tr>
<tr>
<td>Conditions for safe storage</td>
<td>Store in original container in a cool, dry, ventilated place away from direct heat or direct sunlight. Keep container sealed when not in use. Keep out of reach of children.</td>
</tr>
<tr>
<td>Store site requirements</td>
<td>Store at 4°C to 25°C.</td>
</tr>
<tr>
<td>Packaging</td>
<td>PG III</td>
</tr>
</tbody>
</table>
SAFETY DATA SHEET

Nuflor®

Section 8: Exposure Control/Personal Protection

Workplace exposure standards
N-Methyl-2-pyrrolidone TWA 25ppm (103 mg/m³) STEL 75ppm (309 mg/m³)
Propylene glycol (vapour & particulates) TWA 150ppm (474 mg/m³)

Application in the workplace
Ensure adequate ventilation. Keep container sealed when not in use.

Exposure standards outside the workplace
No TEL is set for this substance at this time
EEL Not applicable

Personal protection
Wear chemical resistant gloves, facemask or goggles.

Section 9: Physical and Chemical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Clear, light yellow to straw coloured, somewhat viscous solution</td>
</tr>
<tr>
<td>Boiling Point</td>
<td>100°C</td>
</tr>
<tr>
<td>Melting/Softening point</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Vapour Pressure</td>
<td>Not determined</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>1.0</td>
</tr>
<tr>
<td>Solubility (H₂O)</td>
<td>Soluble</td>
</tr>
<tr>
<td>Percent Volatiles</td>
<td>Not determined</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>Not determined</td>
</tr>
</tbody>
</table>

Section 10: Stability and Reactivity

Stability of the substance
Stable under normal conditions.

Conditions to avoid
Open flames and high temperatures.

Material to avoid
Avoid strong acids, bases and oxidisers

Hazardous decomposition products
Carbon oxides (COx)

Section 11: Toxicological Information

Acute effects for individual ingredients only

TEL
No TEL is set for this substance at this time.

Chronic effects for individual ingredients only

Florfenicol: Toxicity studies with repeated doses were conducted in mice (13 weeks, rats (7, 14, 28 days and 13, 52 weeks) and dogs (14, 28 days and 13, 52 weeks). Toxic effects reported for rats were changes in haematologic parameters and atrophy of testes. For dogs, an increase in liver weights was observed. The dog was the most sensitive species and the NOEL was 1 mg/kg bw/day. [EMEA]

N-Methyl-2-Pyrrolidone: Moderately irritating to human skin with prolonged or repeated exposure [IUCLID 2000]
N-Methyl-2-Pyrrolidone: Irritating to eyes [IUCLID 2000]
N-Methyl-2-Pyrrolidone: Male reproductive toxicity has been manifested as reductions in the male fertility index in a multigeneration study in rats. Female reproductive toxicity has been manifested as reductions in the female fecundity index in a multigeneration study in rats. Developmental toxicity has been manifested as resorptions, malformations, reduced litter size, reduced postnatal survival and reduced pup body weight in experimental animals [U.S EPA]
Section 12: Environmental Information

Effects for individual ingredients only

| AQUATIC | Florfenicol: 48hr LC50 0.0955 mg/L *(Penaeus vannamei - Whiteleg shrimp)* [ECOTOX]  
|         | Florfenicol: 96hr EC50 1.5 mg/L *(Selenastrum capricornutum)*  
| EEL     | No EEL is set for this substance at this time |

Section 13: Disposal Considerations

Disposal information

**Disposal**
Dispose of unused contents in a suitable landfill. Avoid contamination of any water source or the environment with product or empty container.

**Container Disposal**
Dispose of empty container by burying in a suitable landfill or recycle.

Reference
Current version of NZS 8409 Management of Agrichemicals

Section 14: Transport Information

Relevant information

UN3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Florfenicol) MARINE POLLUTANT  
Class 9  PG III  
Limited quantities: 5L  
Maximum quantity for own agricultural use: 1000L

Other requirements
Refer to Haznote.

Section 15: Regulatory Information

Regulatory status
HSNO Approval Code: HSR002210  
For a full controls see www.epa.govt.nz  
ACVM registration number: A7819.  
For conditions of registration see www.foodsafety.govt.nz  
RESTRICTED VETERINARY MEDICINE

HSNO and ACVM controls
Signage: 100 Litres  
Emergency Plan: 100 Litres

Section 16: Other Information

Additional information
Nuflor is a registered trademark.