Safety data sheet

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

1.1. Product identifier
Code: XLS3L
Product name: Westar Supernova - Luminol-Enhancer Solution

1.2. Relevant identified uses of the substance or mixture and uses advised against
Intended use: Luminol-Enhancer Solution

1.3. Details of the supplier of the safety data sheet
Name: CYANAGEN S.R.L.
Full address: Via Stradelli Guelfi 40/C
District and Country: 40138 Bologna (BO)
Italia
Tel.: +39 051.534063
Fax: +39 051.534063

E-mail address of the competent person responsible for the Safety Data Sheet: technical.support@cyanagen.com

1.4. Emergency telephone number
For urgent inquiries refer to: +39 051.534063

SECTION 2. Hazards identification

2.1. Classification of the substance or mixture
The product is not classified as hazardous pursuant to the provisions set forth in EC Regulation 1272/2008 (CLP). However, since the product contains hazardous substances in concentrations such as to be declared in section no. 3, it requires a safety data sheet with appropriate information, compliant to EC Regulation 1907/2006 and subsequent amendments. Hazard classification and indication:

2.2. Label elements
Hazard labelling pursuant to EC Regulation 1272/2008 (CLP) and subsequent amendments and supplements.

Hazard pictograms: --
Signal words: --
Hazard statements:

EUH210 Safety data sheet available on request.
EUH208 Contains:
Sodium3-(10H-phenothiazin-10-yl)propane-1-sulfonate

May produce an allergic reaction.

Precautionary statements:
2.3. Other hazards

On the basis of available data, the product does not contain any PBT or vPvB in percentage greater than 0.1%.

SECTION 3. Composition/information on ingredients

3.1. Substances

Information not relevant

3.2. Mixtures

Contains:

The full wording of hazard (H) phrases is given in section 16 of the sheet.

<table>
<thead>
<tr>
<th>Identification</th>
<th>Classification 1272/2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRIS</td>
<td>Eye Irrit. 2 H319, Skin Irrit. 2 H315</td>
</tr>
<tr>
<td>CAS 77-86-1</td>
<td>3.5 ≤ x &lt; 4</td>
</tr>
<tr>
<td>EC 201-064-4</td>
<td></td>
</tr>
<tr>
<td>INDEX -</td>
<td></td>
</tr>
<tr>
<td>ETHANEDIOL</td>
<td>Acute Tox. 4 H302, STOT RE 2 H373</td>
</tr>
<tr>
<td>CAS 107-21-1</td>
<td>1 ≤ x &lt; 1.5</td>
</tr>
<tr>
<td>EC 203-473-3</td>
<td></td>
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<tr>
<td>INDEX 603-027-00-1</td>
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<tr>
<td>SODIUM 3-(10H-PHENOTHIAZIN-10-YL)PROPANE-1-SULFONATE</td>
<td>Eye Irrit. 2 H319, Skin Sens. 1 H317, EUH208</td>
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<tr>
<td>CAS 101199-38-6</td>
<td>0,2 ≤ x &lt; 0,25</td>
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<tr>
<td>EC</td>
<td></td>
</tr>
<tr>
<td>INDEX -</td>
<td></td>
</tr>
</tbody>
</table>

SECTION 4. First aid measures

4.1. Description of first aid measures

EYES: Remove contact lenses, if present. Wash immediately with plenty of water for at least 15 minutes, opening the eyelids fully. If problem persists, seek medical advice.

SKIN: Remove contaminated clothing. Wash immediately with plenty of water. If irritation persists, get medical advice/attention. Wash contaminated clothing before using it again.

INHALATION: Remove to open air. In the event of breathing difficulties, get medical advice/attention immediately.

INGESTION: Get medical advice/attention. Induce vomiting only if indicated by the doctor. Never give anything by mouth to an unconscious person, unless authorised by a doctor.
4.2. Most important symptoms and effects, both acute and delayed

Specific information on symptoms and effects caused by the product are unknown.

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

Information not available

SECTION 5. Firefighting measures

5.1. Extinguishing media

SUITABLE EXTINGUISHING EQUIPMENT
The extinguishing equipment should be of the conventional kind: carbon dioxide, foam, powder and water spray.

UNSUITABLE EXTINGUISHING EQUIPMENT
None in particular.

5.2. Special hazards arising from the substance or mixture

HAZARDS CAUSED BY EXPOSURE IN THE EVENT OF FIRE
Do not breathe combustion products.

5.3. Advice for firefighters

GENERAL INFORMATION
Use jets of water to cool the containers to prevent product decomposition and the development of substances potentially hazardous for health. Always wear full fire prevention gear. Collect extinguishing water to prevent it from draining into the sewer system. Dispose of contaminated water used for extinction and the remains of the fire according to applicable regulations.

SPECIAL PROTECTIVE EQUIPMENT FOR FIRE-FIGHTERS
Normal fire fighting clothing i.e. fire kit (BS EN 469), gloves (BS EN 659) and boots (HO specification A29 and A30) in combination with self-contained open circuit positive pressure compressed air breathing apparatus (BS EN 137).

SECTION 6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Block the leakage if there is no hazard.
Wear suitable protective equipment (including personal protective equipment referred to under Section 8 of the safety data sheet) to prevent any contamination of skin, eyes and personal clothing. These indications apply for both processing staff and those involved in emergency procedures.
6.2. Environmental precautions

The product must not penetrate into the sewer system or come into contact with surface water or ground water.

6.3. Methods and material for containment and cleaning up

Collect the leaked product into a suitable container. If the product is flammable, use explosion-proof equipment. Evaluate the compatibility of the container to be used, by checking section 10. Absorb the remainder with inert absorbent material. Make sure the leakage site is well aired. Contaminated material should be disposed of in compliance with the provisions set forth in point 13.

6.4. Reference to other sections

Any information on personal protection and disposal is given in sections 8 and 13.

SECTION 7. Handling and storage

7.1. Precautions for safe handling

Before handling the product, consult all the other sections of this material safety data sheet. Avoid leakage of the product into the environment. Do not eat, drink or smoke during use. Remove any contaminated clothes and personal protective equipment before entering places in which people eat.

7.2. Conditions for safe storage, including any incompatibilities

Store only in the original container. Store the containers sealed, in a well ventilated place, away from direct sunlight. Keep containers away from any incompatible materials, see section 10 for details.

7.3. Specific end use(s)

Information not available

SECTION 8. Exposure controls/personal protection

8.1. Control parameters

Regulatory References:

<table>
<thead>
<tr>
<th>Country</th>
<th>Language</th>
<th>Document</th>
</tr>
</thead>
<tbody>
<tr>
<td>DEU</td>
<td>Deutschland</td>
<td>MAK-und BAT-Werte-Liste 2012</td>
</tr>
<tr>
<td>ESP</td>
<td>España</td>
<td>INSHT - Límites de exposición profesional para agentes químicos en</td>
</tr>
</tbody>
</table>
8.2. Exposure controls

As the use of adequate technical equipment must always take priority over personal protective equipment, make sure that the workplace is well aired through effective local aspiration. When choosing personal protective equipment, ask your chemical substance supplier for advice. Personal protective equipment must be CE marked, showing that it complies with applicable standards.

**HAND PROTECTION**

Protect hands with category III work gloves (see standard EN 374). The following should be considered when choosing work glove material: compatibility, degradation, failure time and permeability. The work gloves’ resistance to chemical agents should be checked before use, as it can be unpredictable. The gloves’ wear time depends on the duration and type of use.

**SKIN PROTECTION**

Wear category I professional long-sleeved overalls and safety footwear (see Directive 89/686/EEC and standard EN ISO 20344). Wash body with soap and water after removing protective clothing.

**EYE PROTECTION**

Wear airtight protective goggles (see standard EN 166).

**RESPIRATORY PROTECTION**

If the threshold value (e.g. TLV-TWA) is exceeded for the substance or one of the substances present in the product, use a mask with a type A filter whose class (1, 2 or 3) must be chosen according to the limit of use concentration. (see standard EN 14387). In the presence of gases or vapours of

<table>
<thead>
<tr>
<th>Type</th>
<th>Country</th>
<th>TWA/8h mg/m³</th>
<th>STEL/15min mg/m³</th>
<th>ppm</th>
<th>ppm</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGW</td>
<td>DEU</td>
<td>26</td>
<td>52</td>
<td>10</td>
<td>20</td>
</tr>
<tr>
<td>MAK</td>
<td>DEU</td>
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<tr>
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<td>104</td>
<td>20</td>
<td>40</td>
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<tr>
<td>VLEP</td>
<td>FRA</td>
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<td>WEL</td>
<td>GBR</td>
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<td>ITA</td>
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<tr>
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<td>PRT</td>
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<tr>
<td>OEL</td>
<td>EU</td>
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<td>40</td>
</tr>
<tr>
<td>TLV-ACGIH</td>
<td></td>
<td>100 (C)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
various kinds and/or gases or vapours containing particulate (aerosol sprays, fumes, mists, etc.) combined filters are required.
Respiratory protection devices must be used if the technical measures adopted are not suitable for restricting the worker's exposure to the threshold values considered. The protection provided by masks is in any case limited. If the substance considered is odourless or its olfactory threshold is higher than the corresponding TLV-TWA and in the case of an emergency, wear open-circuit compressed air breathing apparatus (in compliance with standard EN 137) or external air-intake breathing apparatus (in compliance with standard EN 138). For a correct choice of respiratory protection device, see standard EN 529.

ENVIRONMENTAL EXPOSURE CONTROLS

The emissions generated by manufacturing processes, including those generated by ventilation equipment, should be checked to ensure compliance with environmental standards.

SECTION 9. Physical and chemical properties

9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
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<tbody>
<tr>
<td>Appearance</td>
<td>liquid</td>
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<tr>
<td>Colour</td>
<td>From transparent to slightly purplish</td>
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<td>Odour</td>
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<tr>
<td>pH</td>
<td>9.65</td>
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<td>Melting point / freezing point</td>
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<tr>
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<td>Flash point</td>
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<td>Evaporation rate</td>
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<td>Flammability (solid, gas)</td>
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<tr>
<td>Lower inflammability limit</td>
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</tr>
<tr>
<td>Upper inflammability limit</td>
<td>Not available</td>
</tr>
<tr>
<td>Lower explosive limit</td>
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</tr>
<tr>
<td>Upper explosive limit</td>
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<tr>
<td>Vapour pressure</td>
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<td>Vapour density</td>
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<td>Relative density</td>
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<tr>
<td>Solubility</td>
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<tr>
<td>Partition coefficient: n-octanol/water</td>
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</tr>
<tr>
<td>Auto-ignition temperature</td>
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<tr>
<td>Decomposition temperature</td>
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<tr>
<td>Viscosity</td>
<td>Not available</td>
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<tr>
<td>Explosive properties</td>
<td>Not available</td>
</tr>
<tr>
<td>Oxidising properties</td>
<td>Not available</td>
</tr>
</tbody>
</table>

9.2. Other information

Information not available

SECTION 10. Stability and reactivity

10.1. Reactivity

There are no particular risks of reaction with other substances in normal conditions of use.

ETHANEDIOL
In the air absorbs moisture. Decomposes at temperatures above 200°C/392°F.

10.2. Chemical stability
The product is stable in normal conditions of use and storage.

10.3. Possibility of hazardous reactions

No hazardous reactions are foreseeable in normal conditions of use and storage.

ETHANEDIOL
Risk of explosion on contact with: perchloric acid. May react dangerously with: chlorosulphuric acid, sodium hydroxide, sulphuric acid, phosphorus pentasulphide, chromium (III) oxide, chromyl chloride, potassium perchlorate, potassium dichromate, sodium peroxide, aluminium. Forms explosive mixtures with: air.

10.4. Conditions to avoid

None in particular. However the usual precautions used for chemical products should be respected.

ETHANEDIOL
Avoid exposure to: sources of heat, naked flames.

10.5. Incompatible materials

Information not available

10.6. Hazardous decomposition products

ETHANEDIOL
May develop: hydroxyacetaldehyde, glyoxal, acetaldehyde, methane, carbon monoxide, hydrogen.

SECTION 11. Toxicological information

In the absence of experimental data for the product itself, health hazards are evaluated according to the properties of the substances it contains, using the criteria specified in the applicable regulation for classification. It is therefore necessary to take into account the concentration of the individual hazardous substances indicated in section 3, to evaluate the toxicological effects of exposure to the product.

11.1. Information on toxicological effects

Metabolism, toxicokinetics, mechanism of action and other information

Information not available

Information on likely routes of exposure
ETHANEDIOL
WORKERS: inhalation; contact with the skin.
POPULATION: inhalation of ambient air; contact with the skin of products containing the substance.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

ETHANEDIOL
Ingestion initially stimulates the central nervous system; later replaced by a phase of depression. There may be kidney damage, with anuria and uremia. Over-exposure symptoms are: vomiting, drowsiness, difficulty in breathing, convulsions. The lethal dose for humans is approx. 1.4 ml/kg.

Interactive effects
Information not available

ACUTE TOXICITY
LC50 (Inhalation - vapours) of the mixture:
Not classified (no significant component)

LD50 (Oral) of the mixture:
>2000 mg/kg Rat
9530 mg/kg Rabbit

LD50 (Dermal) of the mixture:
Not classified (no significant component)

SKIN CORROSION / IRRITATION
Does not meet the classification criteria for this hazard class

SERIOUS EYE DAMAGE / IRRITATION
Does not meet the classification criteria for this hazard class

RESPIRATORY OR SKIN SENSITISATION
May produce an allergic reaction. May produce an allergic reaction.
Contains/Contains:
Sodium3-(10H-phenothiazin-10-yl)propane-1-sulfonate

GERM CELL MUTAGENICITY
Does not meet the classification criteria for this hazard class

CARCINOGENICITY
Does not meet the classification criteria for this hazard class

ETHANEDIOL
Available studies have shown no carcinogenic potential. In a carcinogenicity study lasting two years, carried out by the US National Toxicology Program (NTP), in which ethylene glycol was administered in the feed, "no evidence of carcinogenic activity" in male and female B6C3F1 mice was observed (NTP, 1993).

REPRODUCTIVE TOXICITY
Does not meet the classification criteria for this hazard class

STOT - SINGLE EXPOSURE
Does not meet the classification criteria for this hazard class
STOT - REPEATED EXPOSURE
Does not meet the classification criteria for this hazard class

ASPIRATION HAZARD
Does not meet the classification criteria for this hazard class

SECTION 12. Ecological information

Use this product according to good working practices. Avoid littering. Inform the competent authorities, should the product reach waterways or contaminate soil or vegetation.

12.1. Toxicity
Information not available

12.2. Persistence and degradability

ETHANEDIOL
Solubility in water 1000 - 10000 mg/l
Rapidly biodegradable

12.3. Bioaccumulative potential

ETHANEDIOL
Partition coefficient: n-octanol/water -1,36

12.4. Mobility in soil
Information not available

12.5. Results of PBT and vPvB assessment
On the basis of available data, the product does not contain any PBT or vPvB in percentage greater than 0,1%.

12.6. Other adverse effects
Information not available

SECTION 13. Disposal considerations

13.1. Waste treatment methods

Reuse, when possible. Neat product residues should be considered special non-hazardous waste.
Disposal must be performed through an authorised waste management firm, in compliance with national and local regulations.
CONTAMINATED PACKAGING
Contaminated packaging must be recovered or disposed of in compliance with national waste management regulations.

SECTION 14. Transport information

The product is not dangerous under current provisions of the Code of International Carriage of Dangerous Goods by Road (ADR) and by Rail (RID), of the International Maritime Dangerous Goods Code (IMDG), and of the International Air Transport Association (IATA) regulations.

14.1. UN number

Not applicable

14.2. UN proper shipping name

Not applicable

14.3. Transport hazard class(es)

Not applicable

14.4. Packing group

Not applicable

14.5. Environmental hazards

Not applicable

14.6. Special precautions for user

Not applicable

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Information not relevant

SECTION 15. Regulatory information
15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

Seveso Category - Directive 2012/18/EC: None

Restrictions relating to the product or contained substances pursuant to Annex XVII to EC Regulation 1907/2006

None

Substances in Candidate List (Art. 59 REACH)

On the basis of available data, the product does not contain any SVHC in percentage greater than 0,1%.

Substances subject to authorisation (Annex XIV REACH)

None

Substances subject to exportation reporting pursuant to (EC) Reg. 649/2012:

None

Substances subject to the Rotterdam Convention:

None

Substances subject to the Stockholm Convention:

None

Healthcare controls

Information not available

German regulation on the classification of substances hazardous to water (VwVwS 2005)

15.2. Chemical safety assessment

No chemical safety assessment has been processed for the mixture and the substances it contains.

SECTION 16. Other information

Text of hazard (H) indications mentioned in section 2-3 of the sheet:

- **Acute Tox. 4**
  - Acute toxicity, category 4
- **STOT RE 2**
  - Specific target organ toxicity - repeated exposure, category 2
- **Eye Irrit. 2**
  - Eye irritation, category 2
- **Skin Irrit. 2**
  - Skin irritation, category 2
- **Skin Sens. 1**
  - Skin sensitization, category 1
- **H302**
  - Harmful if swallowed.
- **H373**
  - May cause damage to organs through prolonged or repeated exposure.
**LEGEND:**
- ADR: European Agreement concerning the carriage of Dangerous goods by Road
- CAS NUMBER: Chemical Abstract Service Number
- CE50: Effective concentration (required to induce a 50% effect)
- CE NUMBER: Identifier in ESIS (European archive of existing substances)
- CLP: EC Regulation 1272/2008
- DNEL: Derived No Effect Level
- EmS: Emergency Schedule
- GHS: Globally Harmonized System of classification and labeling of chemicals
- IATA DGR: International Air Transport Association Dangerous Goods Regulation
- IC50: Immobilization Concentration 50%
- IMDG: International Maritime Code for dangerous goods
- IMO: International Maritime Organization
- INDEX NUMBER: Identifier in Annex VI of CLP
- LC50: Lethal Concentration 50%
- LD50: Lethal dose 50%
- OEL: Occupational Exposure Level
- PBT: Persistent bioaccumulative and toxic as REACH Regulation
- PEC: Predicted environmental Concentration
- PEL: Predicted exposure level
- PNEC: Predicted no effect concentration
- REACH: EC Regulation 1907/2006
- RID: Regulation concerning the international transport of dangerous goods by train
- TLV: Threshold Limit Value
- TLV CEILING: Concentration that should not be exceeded during any time of occupational exposure.
- TWA STEL: Short-term exposure limit
- TWA: Time-weighted average exposure limit
- VOC: Volatile organic Compounds
- vPvB: Very Persistent and very Bioaccumulative as for REACH Regulation
- WGK: Water hazard classes (German).

**GENERAL BIBLIOGRAPHY**
2. Regulation (EC) 1272/2008 (CLP) of the European Parliament
6. Regulation (EU) 618/2012 (III Atp. CLP) of the European Parliament
8. Regulation (EU) 944/2013 (V Atp. CLP) of the European Parliament
- The Merck Index - 10th Edition
- Handling Chemical Safety
- INRS - Fiche Toxicologique (toxicological sheet)
- Patty - Industrial Hygiene and Toxicology
- IFA GESTIS website
- ECHA website
- Database of SDS models for chemicals - Ministry of Health and ISS (Istituto Superiore di Sanità) - Italy

**Note for users:**
The information contained in the present sheet are based on our own knowledge on the date of the last version. Users must verify the suitability and thoroughness of provided information according to each specific use of the product. This document must not be regarded as a guarantee on any specific product property.
The use of this product is not subject to our direct control; therefore, users must, under their own responsibility, comply with the current health and safety laws and regulations. The producer is relieved from any liability arising from improper uses.
Provide appointed staff with adequate training on how to use chemical products.

Changes to previous review:
The following sections were modified:
01 / 02 / 03 / 04 / 08 / 10 / 11 / 12 / 14 / 15 / 16.