

# Material Safety Data Sheet

## acc. to ISO/DIS 11014

Printing date 03/22/2010

Reviewed on 01/10/2013

**\* 1 Identification of substance**

- **Trade name:** Reference Standard Zero - Cl<sub>2</sub>, - pH, - Cys
- **Product use:** Standard Solution for calibration purposes
- **Catalogue number:** N/A. **Component of 251399Y**
- **Manufacturer/Supplier:**  
 YSI  
 1725 Brannum Lane  
 Yellow Springs, OH 45387  
 USA  
 phone: +1 937-767-7241  
 email: MSDSinfo@ysi.com  
 www.yssi.com  
 Made in Germany
- **Emergency information:** Chemtrec: (US & Canada) 800-424-9300 (International) 001 703-527-3887

**\* 2 Hazards identification**

- **Hazard description:** Not applicable (EU)
- **Canadian Hazard Symbols:**



- **WHMIS classification:**  
D2B  
Toxic material causing other toxic effects
- **Information pertaining to particular dangers for man and environment:**  
 Contact with skin and inhalation of aerosols/ vapours of the preparation should be avoided.  
 The product does not have to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" (1999/45/EC) in the latest valid version.
- **NFPA ratings (scale 0 - 4)**



- **GHS label elements:** Not applicable.

**\* 3 Composition / Data on components**

- **Chemical characterization:** aqueous solution

**Composition and Information on Ingredients:**

|  |   |         |
|--|---|---------|
| CAS: 7732-18-5<br>EINECS: 231-791-2<br>RTECS: ZC 0110000 | water, distilled, conductivity or of similar purity | > 99.5% |
|--|---|---------|

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**Trade name: Reference Standard Zero - Cl<sub>2</sub> - pH - Cys**

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|                                      |  |        |
|--------------------------------------|--|--------|
| CAS: 14548-60-8<br>EINECS: 238-588-8 | Benzylhemiformal<br>Xn, Xi; R 21/22-37/38-41<br>Danger: 3.1.O/3, 3.1.I/2, 3.1.D/4, 3.2/2, 3.8/3; 3.3/1<br>Warning: 2.6/4 | < 0.5% |
|--------------------------------------|--|--------|

- **REACH - pre-registered substances** All components are REACH pre-registered.
- **Additional information:** For the wording of the listed risk phrases refer to section 16.

### 4 First aid measures

- **General information:** Immediately remove any clothing soiled by the product.
- **After inhalation:** Supply fresh air.
- **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
- **After eye contact:** Rinse opened eye for several minutes (15 min) under running water.
- **After swallowing:**  
Rinse out mouth and then drink 1-2 glasses of water.  
If symptoms persist consult doctor.
- **The following symptoms may occur:**  
after swallowing and inhalation:  
mucous membrane irritation

### 5 Fire fighting measures

- **Suitable extinguishing agents:** Use fire fighting measures that suit the environment.
- **Protective equipment:**  
Wear self-contained respiratory protective device.  
Wear fully protective suit.
- **Additional information**  
Ambient fire may liberate hazardous vapours.  
Collect contaminated fire fighting water separately. It must not enter the sewage system.  
Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

### 6 Accidental release measures

- **Person-related safety precautions:**  
Wear protective equipment. Keep unprotected persons away.  
Ensure adequate ventilation
- **Measures for environmental protection:** Do not allow product to reach sewage system or any water course.
- **Measures for cleaning/collecting:**  
Dispose contaminated material as waste according to item 13.  
Ensure adequate ventilation.  
Absorb with liquid-binding material (sand, diatomite, universal binders).

### 7 Handling and storage

- **Handling:**
- **Information for safe handling:** No special measures required.
- **Information about protection against explosions and fires:** The product is not flammable.
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** Store in a cool location.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:**  
Protect from heat and direct sunlight.

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Protect from humidity and water.

Protect from exposure to the light.

· **Recommended storage temperature:** 20°C +/- 5°C (approx. 68°F)

### \* 8 Exposure controls and personal protection

- **Additional information about design of technical systems:** No further data; see item 7.
- **Components with limit values that require monitoring at the workplace:** Not required.
- **Additional information:** The lists that were valid during the creation were used as basis.
- **Personal protective equipment:**
- **General protective and hygienic measures:**
  - Wash hands before breaks and at the end of work.
  - Do not eat, drink, smoke or sniff while working.
- **Breathing equipment:** Use respiratory protective device against the effects of fumes/dust/aerosol.
- **Recommended filter device for short term use:** Filter A
- **Protection of hands:**
  - Preventive skin protection by use of skin-protecting agents is recommended.
  - Avoid direct contact with the chemical/ the product/ the preparation by organizational measures.
  - Wear gloves in case of breakage / leakage.
- **Material of gloves**
  - Nitrile rubber, NBR
  - Recommended thickness of the material:  $\geq 0.11$  mm
- **Penetration time of glove material** Value for the permeation: Level  $\geq 1$  (10 min)
- **Eye protection:** Safety glasses with side-shields
- **Body protection:** Protective work clothing

### 9 Physical and chemical properties

|   |   |
|---|---|
| · <b>Odor Threshold:</b>                          | Not applicable.                               |
| · <b>Form:</b>                                    | Fluid   |
| · <b>Color:</b>                                   | Colorless                                     |
| · <b>Odor:</b>                                    | Light   |
| · <b>Melting point/Melting range:</b>             | 0°C (32°F)                                    |
| · <b>Boiling point/Boiling range:</b>             | 100°C (212°F)                                 |
| · <b>Freezing Point:</b>                          | Not applicable.                               |
| · <b>Flash point:</b>                             | Not applicable.                               |
| · <b>Flammability (solid, gaseous):</b>           |   |
| · <b>Upper Flammable Limit:</b>                   | Not applicable.                               |
| · <b>Lower Flammable Limit:</b>                   | Not applicable.                               |
| · <b>Ignition temperature:</b>                    | Undetermined.                                 |
| · <b>Sensitivity to Mechanical Impact:</b>        | None  |
| · <b>Sensitivity to Static Discharge:</b>         | None  |
| · <b>Danger of explosion:</b>                     | Product does not present an explosion hazard. |
| · <b>Vapor Density:</b>                           | Not applicable.                               |
| · <b>Specific Gravity:</b>                        | Not applicable.                               |
| · <b>Density at 20°C (68°F):</b>                  | 0.99 g/cm <sup>3</sup>                        |
| · <b>Solubility in / Miscibility with</b>         |   |
| · <b>Water:</b>                                   | Fully miscible.                               |
| · <b>Coefficient of Water / Oil Distribution:</b> | Not applicable.                               |

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|                                   |        |
|-----------------------------------|--------|
| · <b>pH-value at 20°C (68°F):</b> | 4.3    |
| · <b>Organic solvents:</b>        | 0.0 %  |
| · <b>Water:</b>                   | > 99 % |

## 10 Stability and reactivity

- **Thermal decomposition / conditions to be avoided:** To avoid thermal decomposition do not overheat.
- **Dangerous products of decomposition:** see chapter 5

## \* 11 Toxicological information

- **Acute toxicity:** Quantitative data on the toxicity of the preparation are not available.

- **LD/LC50 values that are relevant for classification:**

### 14548-60-8 Benzylhemiformal

|            |      |                          |
|------------|------|--------------------------|
| Dermal     | LD50 | > 2000 / 4 h mg/kg (rat) |
| Inhalative | LC50 | 0.5 mg/l/4h (rat)        |
|            | LD50 | 1700 mg/kg (rat)         |

- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** Irritating effect.
- **Sensitization:** Sensitizing effect by skin contact is possible with prolonged exposure.
- **Additional toxicological information:**  
When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.  
The substance is not subject to classification.  
The usual precautionary measures for handling chemicals should be followed.
- **Carcinogenicity:** NTP? IARC Monographs? OSHA Regulated? see chapter 8 / 15
- **Teratogenicity:** Not found.
- **Mutagenicity:** Not found.
- **Reproductive Toxicity:** Not found.
- **Synergistic Products:** None

## 12 Ecological information

- **Information about elimination (persistence and degradability):**
- **Other information:** Quantitative data on the ecological effect of this preparation are not available.
- **Additional ecological information:**
- **General notes:** Generally not hazardous for water

## 13 Disposal considerations

- **Product:**
- **Recommendation:** Hand over to hazardous waste disposers.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.

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· **Recommended cleansing agent:** Water, if necessary with cleansing agents.

### \* 14 Transport information

· **TDG / DOT regulations:**

· **Hazard class:** None

· **Land transport ADR/RID (cross-border):**

· **ADR/RID class:** None

· **Maritime transport IMDG:**

· **IMDG Class:** None

· **Marine pollutant:** No

· **Air transport ICAO-TI and IATA-DGR:**

· **ICAO/IATA Class:** None

· **Proper shipping name:** None

· **Canadian TDG Class:** None

· **UN "Model Regulation":** None

· **Transport/Additional information:** Not dangerous according to the above specifications.

### 15 Regulations

· **Sara**

· **Section 355 (Extremely hazardous substances):**

Substance is not listed.

· **Section 313 (Specific toxic chemical listings):**

Substance is not listed.

· **TSCA (Toxic Substances Control Act):**

Substance is listed.

· **Proposition 65**

· **Chemicals known to cause cancer:**

Substances are not listed.

· **Chemicals known to cause reproductive toxicity for females:**

Substance is not listed.

· **Chemicals known to cause reproductive toxicity for males:**

Substance is not listed.

· **Chemicals known to cause developmental toxicity:**

Substance is listed.

· **Canadian Ingredient Disclosure List**

· **Limit 0,1%**

Substance is not listed.

· **Limit 1%**

Substance is not listed.

· **Canadian Domestic Substances List (DSL)**

Substance is listed.

· **EPA (Environmental Protection Agency)**

Substance is not listed.

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**Trade name: Reference Standard Zero - Cl<sub>2</sub>, - pH, - Cys**

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|   |                  |
|---|------------------|
| <b>· IARC (International Agency for Research on Cancer)</b>               |                  |
| Substance is not listed.  |                  |
| <b>· NTP (National Toxicology Program)</b>                                |                  |
| Substance is not listed.  |                  |
| <b>· NIOSH-Ca (National Institute for Occupational Safety and Health)</b> |                  |
| Substance is not listed.  |                  |
| <b>· OSHA-Ca (Occupational Safety &amp; Health Administration)</b>        |                  |
| Substance is not listed.  |                  |
| <b>· Australian Inventory of Chemical Substances</b>                      |                  |
| Substance is listed.  |                  |
| <b>· ENCS List (MITI):</b>  |                  |
| 14548-60-8  | Benzylhemiformal |
| <b>· Standard for the Uniform Scheduling of Drugs and Poisons</b>         |                  |
| Substance is not listed.  |                  |

**· Product related hazard informations:**

The product is not subject to identification regulations according to (EU) directives on hazardous materials.

**· Water hazard class:** Generally not hazardous for water.

**· CPR Classification:** Class D, Division 2B

**· This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR**

### \* 16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

**· Relevant R-phrases**

21/22 Harmful in contact with skin and if swallowed.

37/38 Irritating to respiratory system and skin.

41 Risk of serious damage to eyes.

**· Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)

ICAO: International Civil Aviation Organization

ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

NFPA: National Fire Protection Association (USA)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

**· Sources** Data arise from manufacturers' data sheets, reference works and literature.

**· \* Data compared to the previous version altered.**

# Material Safety Data Sheet

## acc. to ISO/DIS 11014

Printing date 03/22/2010

Reviewed on 01/10/2013

### \* 1 Identification of substance

- **Trade name:** Verification Standard 530 nm / Reference Standard 2,0 mg/l, 0,2 mg/l, 0,5 mg/l, 1 mg/l
- **Product use:** Standard Solution for calibration purposes
- **Catalogue number:** N/A. **Component of 251399Y**
- **Manufacturer/Supplier:**  
YSI  
1725 Brannum Lane  
Yellow Springs, OH 45387  
USA  
phone: +1 937-767-7241  
email: MSDSinfo@ysi.com  
www.yisi.com  
Made in Germany
- **Emergency information:** Chemtrec: (US & Canada) 800-424-9300 (International) 001 703-527-3887

### \* 2 Hazards identification

- **Hazard description:** Not applicable (EU)
- **Canadian Hazard Symbols:**



- **WHMIS classification:**  
D2B  
Toxic material causing other toxic effects
- **Information pertaining to particular dangers for man and environment:**  
The product does not have to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" (1999/45/EC) in the latest valid version.
- **Classification system:**  
The classification was made according to the latest editions of international substances lists, and expanded upon from company and literature data.
- **NFPA ratings (scale 0 - 4)**



Health = 1  
Fire = 0  
Reactivity = 0

- **GHS label elements:** Not applicable.

### \* 3 Composition / Data on components

- **Description:** aqueous solution

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## acc. to ISO/DIS 11014

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Trade name: **Verification Standard 530 nm / Reference Standard 2,0 mg/l, 0,2 mg/l, 0,5 mg/l, 1 mg/l**

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| · <b>Composition and Information on Ingredients:</b>                                  |   |   |         |
|---|---|---|---------|
| CAS: 67-68-5<br>EINECS: 200-664-3<br>RTECS: PV 6210000                                | dimethyl sulfoxide                                  | Warning: 2.6/4  | ≤ 2.5%  |
| CAS: 1310-73-2<br>EINECS: 215-185-5<br>Index number: 011-002-00-6<br>RTECS: WB4900000 | sodium hydroxide                                    |  C <sub>2</sub> ; R 35<br>Danger:  3.2/1A | < 0.5%  |
| CAS: 7732-18-5<br>EINECS: 231-791-2<br>RTECS: ZC 0110000                              | water, distilled, conductivity or of similar purity |   | 90-100% |

- **REACH - pre-registered substances** All components are REACH pre-registered.
- **Additional information:** For the wording of the listed risk phrases refer to section 16.

### \* 4 First aid measures

- **General information:** Immediately remove any clothing soiled by the product.
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:** Immediately rinse with plenty of water.
- **After eye contact:** Rinse opened eye for several minutes (15 min) under running water.
- **After swallowing:**  
Rinse out mouth and then drink 1-2 glasses of water.  
If symptoms persist consult doctor.
- **The following symptoms may occur:**  
after resorption:  
general feeling of sickness  
CNS disorders  
headache  
vomiting

### \* 5 Fire fighting measures

- **Suitable extinguishing agents:** Use fire fighting measures that suit the environment.
- **Special hazards caused by the material, its products of combustion or resulting gases:**  
Sulfur oxides (SO<sub>x</sub>)  
carbon monoxide and carbon dioxide
- **Protective equipment:**  
Wear self-contained respiratory protective device.  
Wear fully protective suit.
- **Additional information**  
Ambient fire may liberate hazardous vapours.  
Collect contaminated fire fighting water separately. It must not enter the sewage system.  
Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

### 6 Accidental release measures

- **Person-related safety precautions:**  
Wear protective equipment. Keep unprotected persons away.  
Ensure adequate ventilation
- **Measures for environmental protection:** Do not allow product to reach sewage system or any water course.
- **Measures for cleaning/collecting:**  
Dispose contaminated material as waste according to item 13.  
Ensure adequate ventilation.

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Trade name: Verification Standard 530 nm / Reference Standard 2,0 mg/l, 0,2 mg/l, 0,5 mg/l, 1 mg/l

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Absorb with liquid-binding material (sand, diatomite, universal binders).

## 7 Handling and storage

- **Handling:**
- **Information for safe handling:** Ensure good ventilation/exhaustion at the workplace.
- **Information about protection against explosions and fires:**
  - The product is not flammable.
  - The product can form flammable fumes when heated.
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** Store in a cool location.
- **Further information about storage conditions:**
  - Keep receptacle tightly sealed.
  - Protect from heat and direct sunlight.
  - Protect from humidity and water.
  - Protect from exposure to the light.
- **Recommended storage temperature:** 20°C +/- 5°C (approx. 68°F)

## \* 8 Exposure controls and personal protection

- **Additional information about design of technical systems:** No further data; see item 7.

### · Components with limit values that require monitoring at the workplace:

#### 67-68-5 dimethyl sulfoxide (≤ 2.5%)

|            |         |
|------------|---------|
| WEEL (USA) | 250 ppm |
|------------|---------|

#### 1310-73-2 sodium hydroxide (0.1-1.0%)

|             |   |
|-------------|---|
| PEL (USA)   | 2 mg/m <sup>3</sup>                     |
| REL (USA)   | Short-term value: C 2 mg/m <sup>3</sup> |
| TLV (USA)   | Short-term value: C 2 mg/m <sup>3</sup> |
| EL (Canada) | Short-term value: C 2 mg/m <sup>3</sup> |

- **Additional information:** The lists that were valid during the creation were used as basis.

### · Personal protective equipment:

#### · General protective and hygienic measures:

- Wash hands before breaks and at the end of work.
- Do not eat, drink, smoke or sniff while working.
- Avoid contact with the skin.
- Apply solvent resistant skin cream before beginning work.

- **Breathing equipment:** Use respiratory protective device against the effects of fumes/dust/aerosol.

- **Recommended filter device for short term use:** Filter A

#### · Protection of hands:

- Preventive skin protection by use of skin-protecting agents is recommended.
- Wear gloves in case of breakage / leakage.

#### · Material of gloves

- Nitrile rubber, NBR
- Recommended thickness of the material: ≥ 0.11 mm

#### · Penetration time of glove material

- The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
- Value for the permeation: Level ≥ 1 (10 min)

- **Eye protection:** Safety glasses with side-shields

- **Body protection:** Protective work clothing

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**Trade name: Verification Standard 530 nm / Reference Standard 2,0 mg/l, 0,2 mg/l, 0,5 mg/l, 1 mg/l**


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### 9 Physical and chemical properties

|   |   |
|---|---|
| <b>· Odor Threshold:</b>                          | Not applicable.   |
| <b>· Form:</b>                                    | Fluid   |
| <b>· Color:</b>                                   | Pink  |
| <b>· Odor:</b>                                    | Odorless  |
| <b>· Melting point/Melting range:</b>             | Not applicable.   |
| <b>· Boiling point/Boiling range:</b>             | 100°C (212°F)   |
| <b>· Freezing Point:</b>                          | Not applicable.   |
| <b>· Flash point:</b>                             | Undetermined.   |
| <b>· Flammability (solid, gaseous):</b>           |   |
| <b>Upper Flammable Limit:</b>                     | Not applicable.   |
| <b>Lower Flammable Limit:</b>                     | Not applicable.   |
| <b>· Ignition temperature:</b>                    | Undetermined.   |
| <b>· Sensitivity to Mechanical Impact:</b>        | None  |
| <b>· Sensitivity to Static Discharge:</b>         | None  |
| <b>· Auto igniting:</b>                           | Product is not selfigniting.  |
| <b>· Danger of explosion:</b>                     | Product is not explosive. However, formation of explosive air mixtures is possible. |
| <b>· Vapor Density:</b>                           | Not applicable.   |
| <b>· Specific Gravity:</b>                        | Not applicable.   |
| <b>· Density at 20°C (68°F):</b>                  | 1.006 g/cm <sup>3</sup>   |
| <b>· Solubility in / Miscibility with</b>         |   |
| <b>Water:</b>                                     | Fully miscible.   |
| <b>· Coefficient of Water / Oil Distribution:</b> | Not applicable.   |
| <b>· pH-value at 20°C (68°F):</b>                 | 6   |
| <b>· Solvent content:</b>                         |   |
| <b>Organic solvents:</b>                          | < 2.5 %   |
| <b>Water:</b>                                     | < 98 %  |
| <b>    Solids content:</b>                        | < 1 %   |

### \*10 Stability and reactivity

- **Thermal decomposition / conditions to be avoided:** To avoid thermal decomposition do not overheat.
- **Materials to be avoided:**
  - acids
  - metals
  - zinc
  - light metals
- **Dangerous products of decomposition:** see chapter 5

### \*11 Toxicological information

- **Acute toxicity:** Quantitative data on the toxicity of the preparation are not available.
- **Primary irritant effect:**
  - **on the skin:** No irritant effect.
  - **on the eye:** Irritating effect.
- **Sensitization:** No sensitizing effects known.

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Trade name: **Verification Standard 530 nm / Reference Standard 2,0 mg/l, 0,2 mg/l, 0,5 mg/l, 1 mg/l**

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· **Additional toxicological information:**

The product is not subject to classification according to internally approved calculation methods for preparations.

When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.

The usual precautionary measures for handling chemicals should be followed.

DMSO readily penetrates skin and may carry other dissolved chemicals into the body.

- **Carcinogenicity:** NTP? IARC Monographs? OSHA Regulated? see chapter 8 / 15
- **Teratogenicity:** Not found.
- **Mutagenicity:** Not found.
- **Reproductive Toxicity:** Not found.
- **Synergistic Products:** None

## 12 Ecological information

· **Information about elimination (persistence and degradability):**

· **Other information:**

Quantitative data on the ecological effect of this preparation are not available.

DMSO 3.1 % / 14 d

· **Behavior in environmental systems:**

**67-68-5 dimethyl sulfoxide**

log P(o/w) - 1.35 (.)

· **Ecotoxicological effects:**

· **Aquatic toxicity:**

**67-68-5 dimethyl sulfoxide**

LC50 33500 mg/l/48h (Lepomis macrochirus)

· **Additional ecological information:**

· **General notes:**

Water hazard class 1 (Self-assessment): slightly hazardous for water

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

Must not reach bodies of water or drainage ditch undiluted or unneutralized.

## 13 Disposal considerations

· **Product:**

· **Recommendation:**

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

Hand over to hazardous waste disposers.

· **Uncleaned packagings:**

· **Recommendation:** Disposal must be made according to official regulations.

· **Recommended cleansing agent:** Water, if necessary with cleansing agents.

## \* 14 Transport information

· **TDG / DOT regulations:**

· **Hazard class:** None

· **Land transport ADR/RID (cross-border):**

· **ADR/RID class:** None

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- **Maritime transport IMDG:**
- **IMDG Class:** None
- **Marine pollutant:** No

- **Air transport ICAO-TI and IATA-DGR:**
- **ICAO/IATA Class:** None
- **Proper shipping name:** None
- **Canadian TDG Class:** None

- **Transport/Additional information:** Not dangerous according to the above specifications.

### \*15 Regulations

- **Sara**

- **Section 355 (Extremely hazardous substances):**

None of the ingredients is listed.

- **Section 313 (Specific toxic chemical listings):**

None of the ingredients is listed.

- **TSCA (Toxic Substances Control Act):**

All ingredients are listed.

- **Proposition 65**

- **Chemicals known to cause cancer:**

None of the ingredients is listed.

- **Chemicals known to cause reproductive toxicity for females:**

None of the ingredients is listed.

- **Chemicals known to cause reproductive toxicity for males:**

None of the ingredients is listed.

- **Chemicals known to cause developmental toxicity:**

None of the ingredients is listed.

- **Canadian Ingredient Disclosure List**

- **Limit 0,1%**

None of the ingredients is listed.

- **Limit 1%**

67-68-5 dimethyl sulfoxide

1310-73-2 sodium hydroxide

- **Canadian Domestic Substances List (DSL)**

All ingredients are listed.

- **EPA (Environmental Protection Agency)**

None of the ingredients is listed.

- **IARC (International Agency for Research on Cancer)**

None of the ingredients is listed.

- **NTP (National Toxicology Program)**

None of the ingredients is listed.

- **NIOSH-Ca (National Institute for Occupational Safety and Health)**

None of the ingredients is listed.

- **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

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# Material Safety Data Sheet

## acc. to ISO/DIS 11014

Printing date 03/22/2010

Reviewed on 03/22/2010

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**Trade name: Verification Standard 530 nm / Reference Standard 2,0 mg/l, 0,2 mg/l, 0,5 mg/l, 1 mg/l**


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(Contd. of page 6)

|   |                    |        |
|---|--------------------|--------|
| · <b>Australian Inventory of Chemical Substances</b>              |                    |        |
| All ingredients are listed.                                       |                    |        |
| · <b>ENCS List (MITI):</b>  |                    |        |
| 67-68-5   | dimethyl sulfoxide | 2-1553 |
| 1310-73-2   | sodium hydroxide   | 1-410  |
| · <b>Standard for the Uniform Scheduling of Drugs and Poisons</b> |                    |        |
| 67-68-5   | dimethyl sulfoxide | S4, S6 |
| 1310-73-2   | sodium hydroxide   | S5, S6 |

· **Product related hazard informations:**

The product is not subject to identification regulations according to (EU) directives on hazardous materials.

· **Water hazard class:** Water hazard class 1 (Self-assessment): slightly hazardous for water.

· **CPR Classification:** Class D, Division 2B

· **This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR**

### \* 16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Relevant R-phrases**

35 Causes severe burns.

· **Abbreviations and acronyms:**

EC50: effective concentration, 50 percent (in vivo)

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)

ICAO: International Civil Aviation Organization

ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

NFPA: National Fire Protection Association (USA)

· **Sources** Data arise from manufacturers' data sheets, reference works and literature.

· **\* Data compared to the previous version altered.**