SAFETY DATA SHEET
( SDS )

This safety data sheet complies with the requirements of:

Revision Date 18-May-2015 WAI2 - EGHS - EUROPEAN Revision Number 1

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product Identifier

Product Name Total Alkalinity Reagent Solution

Product Number(s) 700011-WA

Pure substance/mixture Mixture

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

Recommended Use Use as laboratory reagent

Uses advised against No Information available

1.3. Details of the supplier of the safety data sheet

Manufacturer/Supplier Thermo Orion Inc. (Part of Thermo Fisher Scientific, Inc.) Water Analysis Instruments 22 Alpha Road Chelmsford, MA 01824, USA 1-978-232-6000

E-mail address wai.techservbev@thermofisher.com

Made in USA

1.4. Emergency telephone number

24 Hour Emergency Phone Number CHEMTREC®
Within USA and Canada: 1-800-424-9300 Outside USA and Canada: 1-703-527-3887 (collect calls accepted)
SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture
Classification - Mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

| Chronic aquatic toxicity | Category 2 \( -(H411) \) |

Classification according to EU Directives 67/548/EEC or 1999/45/EC
For the full text of the R-phrases and H-Statements mentioned in this Section, see Section 16.

Symbol(s)
Not dangerous goods

2.2. Label elements

Product Identifier

Hazard Statements
H411 - Toxic to aquatic life with long lasting effects
EURH210 - Safety data sheet available on request

Precautionary Statements
P273 - Avoid release to the environment
P202 - Do not handle until all safety precautions have been read and understood

2.3. Other hazards
Toxic to aquatic life
### SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

#### 3.1. Substances

<table>
<thead>
<tr>
<th>Component</th>
<th>Chemical Formula</th>
<th>EC-No.</th>
<th>CAS-No</th>
<th>Weight %</th>
<th>DSD Classification - 67/548/EEC</th>
<th>CLP Classification - Regulation (EC) No 1272/2008</th>
<th>REACH Reg. No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>No information available</td>
<td>EEC No. 231-791-2</td>
<td>7732-18-5</td>
<td>90 - 100%</td>
<td>-</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Potassium Chloride</td>
<td>No information available</td>
<td>EEC No. 231-211-8</td>
<td>7447-40-7</td>
<td>0 - 10%</td>
<td>-</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Succinic Acid</td>
<td>No information available</td>
<td>EEC No. 203-740-4</td>
<td>110-15-6</td>
<td>0 - 10%</td>
<td>-</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Chloroacetic Acid</td>
<td>No information available</td>
<td>EEC No. 201-178-4</td>
<td>79-11-8</td>
<td>0 - 10%</td>
<td>T; R23/24/25 C; R34 N; R50</td>
<td>Acute Tox. 3 (H331) Acute Tox. 3 (H301) Skin Corr. 1B (H314) Aquatic Acute 1 (H400) Acute Tox. 3 (H311)</td>
<td>No information available</td>
</tr>
<tr>
<td>Sodium Hydroxide</td>
<td>No information available</td>
<td>EEC No. 215-185-5</td>
<td>1310-73-2</td>
<td>0 - 10%</td>
<td>C; R35</td>
<td>Skin Corr. 1A (H314)</td>
<td></td>
</tr>
<tr>
<td>Hyamine 1622</td>
<td>No information available</td>
<td>EEC No. 204-479-9</td>
<td>121-54-0</td>
<td>0 - 10%</td>
<td>-</td>
<td>No information available</td>
<td></td>
</tr>
</tbody>
</table>

Note: *The exact percentage (concentration) of composition has been withheld as a trade secret*

For the full text of the R-phrases and H-Statements mentioned in this Section, see Section 16.

Full text of H- and EUH-phrases: see section 16
SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

General Advice
Use first aid treatment according to the nature of the injury. For further assistance, contact your local Poison Control Center. Show this safety data sheet to the doctor in attendance.

Eye Contact
In case of eye contact, remove contact lens and rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Obtain medical attention.

Skin Contact
Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. If symptoms persist, call a physician.

Inhalation
Move to fresh air. If breathing is difficult, give oxygen. If symptoms persist, obtain medical attention.

Ingestion
Clean mouth with water and drink afterwards plenty of water. Do not induce vomiting. Call a physician or Poison Control Center immediately.

Protection of First-aiders
Use personal protective equipment. See Section 8 for more detail. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.

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

Most important symptoms/effects
No information available

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

Notes to Physician
Treat symptomatically

SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing media

Suitable Extinguishing Media
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media
No information available

5.2. Special hazards arising from the substance or mixture

Thermal decomposition can lead to release of irritating gases and vapors.

5.3. Advice for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Personal Precautions
Use personal protective equipment. Evacuate personnel to safe areas.

6.2. Environmental precautions
Environmental Precautions  
Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.

6.3. Methods and material for containment and cleaning up

Methods for Containment  
Prevent further leakage or spillage if safe to do so.

Methods for Cleaning Up  
Soak up with inert absorbent material. Pick up and transfer to properly labeled containers.

Reference to Other Sections
Refer to protective measures listed in Sections 7 and 8
See Section 8 for information on appropriate personal protective equipment
See Section 12 for additional Ecological Information
See Section 13 for additional waste treatment information

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Advice on safe handling  
To avoid risks to human health and the environment, comply with the instructions for use. Wear personal protective equipment. Avoid breathing dust/fume/gas/mist/vapours/spray. Ensure adequate ventilation, especially in confined areas.

General hygiene considerations  
Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities

Storage Conditions  
Keep container tightly closed in a dry and well-ventilated place. Store at room temperature in the original container. Keep away from direct sunlight.

7.3. Specific end use(s)

Specific Use  
Laboratory reagent

Risk Management Methods (RMM)  
The information required is contained in this Safety Data Sheet.

SECTION 8: EXPOSURE CONTROLS/PERSOINAL PROTECTION

8.1. Control parameters

<table>
<thead>
<tr>
<th>Component</th>
<th>European Union</th>
<th>The United Kingdom</th>
<th>France</th>
<th>Spain</th>
<th>Germany</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chloroacetic Acid 79-11-8</td>
<td>-</td>
<td>STEL: 0.9 ppm 15 min STEL: 3.6 mg/m³ 15 min TWA: 0.3 ppm 8 hr TWA: 1.2 mg/m³ 8 hr Skin</td>
<td>-</td>
<td>TWA / VLA-ED: 0.5 ppm (8 horas) Piel</td>
<td>TWA: 1 ppm (8 Stunden). AGW - exposure factor 1 TWA: 4 mg/m³ (8 Stunden). AGW - exposure factor 1 Haut</td>
</tr>
<tr>
<td>Sodium Hydroxide 1310-73-2</td>
<td>-</td>
<td>STEL: 2 mg/m³ 15 min TWA / VME: 2 mg/m³ (8 heures).</td>
<td>-</td>
<td>STEL / VLA-EC: 2 mg/m³ (15 minutos).</td>
<td>-</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Component</th>
<th>Italy</th>
<th>Portugal</th>
<th>The Netherlands</th>
<th>Finland</th>
<th>Denmark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chloroacetic Acid 79-11-8</td>
<td>-</td>
<td>TWA: 0.5 ppm 8 horas Piel</td>
<td>-</td>
<td>STEL: 1 ppm 15 minuutteina STEL: 3.9 mg/m³ 15 minuutteina Ceiling: 1 ppm Ceiling: 3.9 mg/m³ lho</td>
<td></td>
</tr>
<tr>
<td>Sodium Hydroxide 1310-73-2</td>
<td>-</td>
<td>Ceiling: 2 mg/m³</td>
<td>-</td>
<td>STEL: 2 mg/m³ 15 minuutteina Ceiling: 2 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Component</td>
<td>Austria</td>
<td>Switzerland</td>
<td>Poland</td>
<td>Norway</td>
<td>Ireland</td>
</tr>
<tr>
<td>--------------------------</td>
<td>------------------</td>
<td>-------------</td>
<td>-------------------------</td>
<td>-------------------------</td>
<td>-----------------------------</td>
</tr>
<tr>
<td>Chloroacetic Acid 79-11-8</td>
<td>Haut</td>
<td>-</td>
<td>STEL: 4 mg/m³ 15 minutilch</td>
<td>TWA: 2 mg/m³ 8 godzinach</td>
<td>TWA: 0.3 ppm 8 hr. TWA: 1 mg/m³ 8 hr. STEL: 3 mg/m³ 15 min Skin</td>
</tr>
<tr>
<td></td>
<td>MAK-KZW: 1 ppm 15 Minuten</td>
<td>MAK-KZW: 4 mg/m³ 15 Minuten</td>
<td>Mustard</td>
<td>MAK-TMW: 1 ppm 8 Stunden</td>
<td>MAK-TMW: 4 mg/m³ 8 Stunden Ceiling: 1 ppm Ceiling: 4 mg/m³</td>
</tr>
<tr>
<td>Sodium Hydroxide 1310-73-2</td>
<td>MAK-KZW: 4 mg/m³ 15 Minuten</td>
<td>STEL: 2 mg/m³ 15 Minuten</td>
<td>STEL: 1 mg/m³ 15 minuten</td>
<td>TWA: 2 mg/m³ 8 Stunden</td>
<td>Ceiling: 2 mg/m³ STEL: 2 mg/m³ 15 min</td>
</tr>
</tbody>
</table>

Derived No Effect Level (DNEL) No information available

Predicted No Effect Concentration (PNEC) No information available

§2. Exposure controls

Engineering Measures Showers Eyewash stations Ventilation systems

Personal protective equipment

Eye/face Protection Wear chemical splash goggles. If splashes are likely to occur, wear: Face-shield.

Skin and body protection Wear protective gloves/clothing.

Respiratory Protection No protective equipment is needed under normal use conditions. In case of inadequate ventilation wear respiratory protection.

Environmental exposure controls No information available

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

§1. Information on basic physical and chemical properties

Physical State Liquid
Appearance Clear
Odor No information available
Odor Threshold No information available
pH Range 2.0 - 5.0

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Property</td>
<td>Remarks · Method</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>No information available</td>
</tr>
<tr>
<td>Boiling Point/Range</td>
<td>~ 100 °C / 212 °F</td>
</tr>
<tr>
<td>Flash Point (High in °C)</td>
<td>No information available</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>No information available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>No information available</td>
</tr>
<tr>
<td>Flammability Limit in Air</td>
<td>No information available</td>
</tr>
<tr>
<td>Upper flammability limit:</td>
<td>No information available</td>
</tr>
<tr>
<td>Lower flammability limit:</td>
<td>No information available</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>No information available</td>
</tr>
<tr>
<td>Vapor Density</td>
<td>No information available</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>No information available</td>
</tr>
<tr>
<td>Water Solubility</td>
<td>Soluble in water</td>
</tr>
<tr>
<td>Solubility in other solvents</td>
<td>No information available</td>
</tr>
</tbody>
</table>

Product Number(s) 700011-WA
Section 10: Stability and Reactivity

10.1. Reactivity
No information available

10.2. Chemical Stability
Stable under normal conditions

Explosion Data
Sensitivity to Mechanical Impact: None
Sensitivity to Static Discharge: None

10.3. Possibility of Hazardous Reactions
None under normal processing

10.4. Conditions to Avoid
Exposures of temperature and direct sunlight

10.5. Incompatible Materials
No information available

10.6. Hazardous Decomposition Products
Thermal decomposition can lead to release of irritating gases and vapors

Section 11: Toxicological Information

11.1. Information on Toxicological Effects

Acute Toxicity

Product Information
Product does not present an acute toxicity hazard based on known or supplied information.

- Inhalation: No information available
- Eye Contact: No information available
- Skin Contact: No information available
- Ingestion: No information available

Unknown Acute Toxicity: 0% of the mixture consists of ingredient(s) of unknown toxicity.

<table>
<thead>
<tr>
<th>Component</th>
<th>LD50 Oral</th>
<th>LD50 Dermal</th>
<th>LC50 Inhalation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>&gt; 90 mL/kg (Rat)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Potassium Chloride</td>
<td>= 2600 mg/kg (Rat)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Succinic Acid</td>
<td>2260 mg/kg (Rat)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Very toxic to aquatic life with long lasting effects
0.38% of the mixture consists of components(s) of unknown hazards to the aquatic environment

<table>
<thead>
<tr>
<th>Component</th>
<th>Freshwater Algae</th>
<th>Freshwater Fish</th>
<th>Water Flea</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potassium Chloride</td>
<td>2500: 72 h Desmodesmus subspicatus mg/L EC50</td>
<td>750 - 1020: 96 h Pimephales promelas mg/L LC50 static 1060.96 h Lepomis macrochirus mg/L LC50 static</td>
<td>83: 48 h Daphnia magna mg/L EC50 Static 825: 48 h Daphnia magna mg/L EC50</td>
</tr>
<tr>
<td>Chloroacetic Acid</td>
<td>1.8 mg/L EC50 = 72 h 0.025 mg/L EC50 = 72 h 0.028 mg/L EC50 = 48 h</td>
<td>145 mg/L LC50 96 h</td>
<td>71 - 85 mg/L EC50 48 h 77 mg/L EC50 = 48 h</td>
</tr>
<tr>
<td>Sodium Hydroxide</td>
<td>-</td>
<td>45.4: 96 h Oncorhynchus mykiss mg/L LC50 static</td>
<td>-</td>
</tr>
</tbody>
</table>

12.2. Persistence and degradability
No information available

12.3. Bioaccumulative potential
No information available

<table>
<thead>
<tr>
<th>Component</th>
<th>log Pow</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chloroacetic Acid</td>
<td>0.2</td>
</tr>
</tbody>
</table>

12.4. Mobility in soil
No information available

12.5. Results of PBT and vPvB assessment
No information available

12.6. Other adverse effects
No information available

Endocrine Disruptor Information
No information available
SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste from Residues / Unused Products: Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated Packaging: Improper disposal or reuse of this container may be dangerous and illegal.

SECTION 14: TRANSPORT INFORMATION

IMDG/IMO
14.1 UN-No: Not Regulated
14.2 Proper Shipping Name: Not Regulated
14.3 Hazard Class: Not Regulated
   Subsidiary Hazard Class: Not Regulated
14.4 Packing Group: Not Regulated
14.5 Marine Pollutant: Not Applicable
14.6 Special Provisions: None
14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: No information available

RID
14.1 UN-No: Not Regulated
14.2 Proper Shipping Name: Not Regulated
14.3 Hazard Class: Not Regulated
14.4 Packing Group: Not Regulated
14.5 Environmental hazard: Not Applicable
14.6 Special Provisions: None

ADR
14.1 UN-No: Not Regulated
14.2 Proper Shipping Name: Not Regulated
14.3 Hazard Class: Not Regulated
14.4 Packing Group: Not Regulated
14.5 Environmental hazard: Not Applicable
14.6 Special Provisions: None

ICAO
14.1 UN-No: Not Regulated
14.2 Proper Shipping Name: Not Regulated
14.3 Hazard Class: Not Regulated
   Subsidiary Hazard Class: Not Regulated
14.4 Packing Group: Not Regulated
14.5 Environmental hazard: Not Applicable
14.6 Special Provisions: None

IATA
14.1 UN-No: Not Regulated
14.2 Proper Shipping Name: Not Regulated
14.3 Hazard Class: Not Regulated
14.4 Packing Group: Not Regulated
14.5 Environmental hazard: Not Applicable
14.6 Special Provisions: None

SECTION 15: REGULATORY INFORMATION

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

Product Number(s) 700011-WA

Document No. 269308-001
European Union

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work

**International Inventories**

- USINV: Complies
- CANINV: Complies
- EINECS/ELINCS: Complies
- ENCS: Does not Comply
- IECSC: Complies
- KECL: Complies
- PICCS: Complies
- AICS: Complies

**USINV**: TSCA - United States Toxic Substances Control Act Section 8(b) Inventory  
**CANINV**: DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List  
**EINECS/ELINCS**: European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances  
**ENCS**: Japanese Existing and New Chemical Substances  
**IECSC**: Chinese Inventory of Existing Chemical Substances  
**KECL**: Korean Existing and Evaluated Chemical Substances  
**PICCS**: Philippines Inventory of Chemicals and Chemical Substances  
**AICS**: Australian Inventory of Chemical Substances

15.2. Chemical safety assessment

A chemical safety assessment according to regulation (EC) No. 1907/2006 is not required.

**SECTION 16: OTHER INFORMATION**

Key or legend to abbreviations and acronyms used in the safety data sheet

**Full text of R-phrases referred to under sections 2 and 3**

- **R34**: Causes burns
- **R50**: Very toxic to aquatic organisms
- **R23/24/25**: Toxic by inhalation, in contact with skin and if swallowed

**Full text of H-Statements referred to under section 3**

- **H311**: Toxic in contact with skin

<table>
<thead>
<tr>
<th>Legend</th>
<th>SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>TWA</td>
<td>TWA (time-weighted average)</td>
</tr>
<tr>
<td>Ceiling</td>
<td>Maximum limit value</td>
</tr>
<tr>
<td>STEL</td>
<td>STEL (Short Term Exposure Limit)</td>
</tr>
</tbody>
</table>

**Prepared By**: Environmental, Health and Safety

**Prepared For**: Thermo Fisher Scientific Inc.

**Issue Date**: No information available

**Revision Date**: 18-May-2015
Expiration Date  SDS is valid 3 years from revision date. Contact wai.techservbev@thermofisher.com for the latest revision.

Reason for revision  Update to CLP Format

This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006

Disclaimer

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End of Safety Data Sheet