# SAFETY DATA SHEET
# DEQUEST 2016D

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

### *1.1. Product identifier*

| | |
|---|---|
| **Product name** | DEQUEST 2016D |
| **Product number** | 60808 |
| **Synonyms; trade names** | HEDP 4Na, TETRASODIUM (1-HYDROXYETHYLIDENE)BISPHOSPHONATE |
| **REACH registration number** | 01-2119510382-52-XXXX |
| **CAS number** | 3794-83-0 |
| **EC number** | 223-267-7 |

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

| | |
|---|---|
| **Identified uses** | Chemical Intermediate Anti Scaling agent Cleaning agent. Cosmetics Personal Care Metal surface treatment Oilfield applications Paint. Paint Remover Surface coating Bleaching Agent Additive for Agrochemicals Ceramics Glass |

### *1.3. Details of the supplier of the safety data sheet*

| | |
|---|---|
| **Supplier** | Univar Solutions UK Ltd<br>Aquarius House<br>6 Mid Point Business Park<br>Bradford<br>BD3 7AY<br>+44 1274 267300<br>+44 1274 267306<br>SDS.EMEA@univarsolutions.com |

### *1.4. Emergency telephone number*

| | |
|---|---|
| **Emergency telephone** | SGS - +32 (0)3 575 55 55 (24h) |
| **Sds No.** | 60808 |

## SECTION 2: Hazards identification

### *2.1. Classification of the substance or mixture*

**Classification (EC 1272/2008)**

| | |
|---|---|
| **Physical hazards** | Not Classified |
| **Health hazards** | Acute Tox. 4 - H302 Eye Irrit. 2 - H319 |
| **Environmental hazards** | Not Classified |

### *2.2. Label elements*

| | |
|---|---|
| **EC number** | 223-267-7 |

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**Hazard pictograms**

| | |
|---|---|
| **Signal word** | Warning |
| **Hazard statements** | H302 Harmful if swallowed.<br>H319 Causes serious eye irritation. |
| **Precautionary statements** | P101 If medical advice is needed, have product container or label at hand.<br>P264 Wash contaminated skin thoroughly after handling.<br>P270 Do not eat, drink or smoke when using this product.<br>P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.<br>P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.<br>P501 Dispose of contents/ container in accordance with national regulations. |
| **Contains** | TETRASODIUM (1-HYDROXYETHYLIDENE)BISPHOSPHONATE |

### *2.3. Other hazards*

Avoid generation and spreading of dust. Dust may form explosive mixture with air. Take precautionary measures against static discharge.
This substance is not classified as PBT or vPvB according to current EU criteria.

## SECTION 3: Composition/information on ingredients

### *3.1. Substances*

**TETRASODIUM (1-HYDROXYETHYLIDENE)BISPHOSPHONATE** **81 - 88%**

CAS number: 3794-83-0 EC number: 223-267-7 REACH registration number: 01-2119510382-52-XXXX

**Classification**
Acute Tox. 4 - H302
Eye Irrit. 2 - H319

The full text for all hazard statements is displayed in Section 16.

| | |
|---|---|
| **Product name** | DEQUEST 2016D |
| **REACH registration number** | 01-2119510382-52-XXXX |
| **CAS number** | 3794-83-0 |
| **EC number** | 223-267-7 |
| **Composition comments** | The data shown are in accordance with the latest EC Directives. |

## SECTION 4: First aid measures

### *4.1. Description of first aid measures*

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| | |
|---|---|
| **Inhalation** | Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. If breathing stops, provide artificial respiration. When breathing is difficult, properly trained personnel may assist affected person by administering oxygen. It may be dangerous for first aid personnel to carry out mouth-to-mouth resuscitation. Get medical attention if symptoms are severe or persist. Place unconscious person on their side in the recovery position and ensure breathing can take place. Get medical attention immediately. Maintain an open airway. Loosen tight clothing such as collar, tie or belt. |
| **Ingestion** | Rinse mouth thoroughly with water. Remove any dentures. Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Give a few small glasses of water or milk to drink. Stop if the affected person feels sick as vomiting may be dangerous. Do not induce vomiting unless under the direction of medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if symptoms are severe or persist. Never give anything by mouth to an unconscious person. Place unconscious person on their side in the recovery position and ensure breathing can take place. Get medical attention immediately. Maintain an open airway. Loosen tight clothing such as collar, tie or belt. |
| **Skin contact** | After contact with skin, take off immediately all contaminated clothing, and wash immediately with plenty of water. Get medical attention if symptoms are severe or persist after washing. Wash clothing and clean shoes thoroughly before reuse. |
| **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 any discomfort continues. |
| **Protection of first aiders** | No action shall be taken without appropriate training or involving any personal risk. It may be dangerous for first aid personnel to carry out mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it from the affected person, or wear gloves. |

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

| | |
|---|---|
| **Inhalation** | Overexposure may cause the following adverse effects: Respiratory system irritation. Coughing. |
| **Ingestion** | Harmful if swallowed. |
| **Eye contact** | Causes serious eye irritation. Overexposure may cause the following adverse effects: Pain or irritation. Profuse watering of the eyes. Redness. |

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

| | |
|---|---|
| **Notes for the doctor** | Treat symptomatically. Contact specialist immediately poison treatment if large quantities have been ingested or inhaled |

## SECTION 5: Firefighting measures

### *5.1. Extinguishing media*

| | |
|---|---|
| **Suitable extinguishing media** | Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog. |
| **Unsuitable extinguishing media** | Do not use water jet as an extinguisher, as this will spread the fire. |

### *5.2. Special hazards arising from the substance or mixture*

| | |
|---|---|
| **Specific hazards** | When heated and in case of fire, toxic vapours/gases may be formed. Avoid generation and spreading of dust. Take precautionary measures against static discharges. Dust may form explosive mixture with air. |
| **Hazardous combustion products** | Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapours. Phosphine (PH3). Oxides of the following substances: Carbon. Phosphorus. |

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### *5.3. Advice for firefighters*

**Protective actions during firefighting** Evacuate area. No action shall be taken without appropriate training or involving any personal risk. Cool containers exposed to heat with water spray and remove them from the fire area if it can be done without risk. Control run-off water by containing and keeping it out of sewers and watercourses. Contain and collect extinguishing water.

**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** Provide adequate ventilation. Wear protective clothing as described in Section 8 of this safety data sheet. Follow precautions for safe handling described in this safety data sheet. Avoid inhalation of dust and contact with skin and eyes. Evacuate area. No action shall be taken without appropriate training or involving any personal risk. Keep unnecessary and unprotected personnel away from the spillage. Do not touch or walk into spilled material. Take precautionary measures against static discharges. No smoking, sparks, flames or other sources of ignition near spillage.

### *6.2. Environmental precautions*

**Environmental precautions** Do not discharge into drains or watercourses or onto the ground. 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** Move containers from spillage area. Use only non-sparking tools. Approach the spillage from upwind. Avoid the spillage or runoff entering drains, sewers or watercourses. Avoid generation and spreading of dust. Eliminate all sources of ignition. Remove spillage with vacuum cleaner or collect with a shovel and broom, or similar. Collect and place in suitable waste disposal containers and seal securely. Label the containers containing waste and contaminated materials and remove from the area as soon as possible.

### *6.4. Reference to other sections*

**Reference to other sections** Wear protective clothing as described in Section 8 of this safety data sheet. Collect and dispose of spillage as indicated in Section 13.

## SECTION 7: Handling and storage

### *7.1. Precautions for safe handling*

**Usage precautions** Provide adequate ventilation. Wear protective clothing as described in Section 8 of this safety data sheet. Follow precautions for safe handling described in this safety data sheet. Avoid inhalation of dust and contact with skin and eyes. Avoid handling which leads to dust formation. Use only non-sparking tools. In case of insufficient ventilation, wear suitable respiratory equipment. Container must be kept tightly closed when not in use. Eliminate all sources of ignition. Take precautionary measures against static discharges. Empty containers or liners may retain some product residues and hence be potentially hazardous. Do not reuse empty containers.

**Advice on general occupational hygiene** Do not eat, drink or smoke when using this product. Wash at the end of each work shift and before eating, smoking and using the toilet. Wash hands and any other contaminated areas of the body with soap and water before leaving the work site. Provide eyewash station and safety shower.

### *7.2. Conditions for safe storage, including any incompatibilities*

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**Storage precautions** Store in tightly-closed, original container in a dry, cool and well-ventilated place. Avoid exposure to high temperatures or direct sunlight. Store away from incompatible materials (see Section 10). Keep away from food and drink. Eliminate all sources of ignition. Avoid generation and spreading of dust. Store away from the following materials: Oxidising materials. Container must be kept tightly closed when not in use. Keep containers upright. Only store in correctly labelled containers. Use appropriate containment to avoid environmental contamination.

### *7.3. Specific end use(s)*

**Specific end use(s)** The identified uses for this product are detailed in Section 1.2.

## SECTION 8: Exposure controls/Personal protection

### *8.1. Control parameters*

**Ingredient comments** No exposure limits known for ingredient(s).

#### *TETRASODIUM (1-HYDROXYETHYLIDENE)BISPHOSPHONATE (CAS: 3794-83-0)*

**Ingredient comments** No exposure limits known for ingredient(s).

**DNEL**
General population - Oral; Long term systemic effects: 2.1 mg/kg/day
General population - Dermal; Long term systemic effects: 24 mg/kg/day
General population - Inhalation; Short term local effects: 10 mg/m³
General population - Inhalation; Long term local effects: 10 mg/m³
General population - Inhalation; Long term systemic effects: 4.2 mg/m³
Workers - Dermal; Long term systemic effects: 48 mg/kg/day
Workers - Inhalation; Short term local effects: 10 mg/m³
Workers - Inhalation; Long term local effects: 10 mg/m³
Workers - Inhalation; Long term systemic effects: 16.9 mg/m³

**PNEC**
- Fresh water; 0.136 mg/l
- STP; 20 mg/l
- Soil; 96 mg/kg
- marine water; 0.136 mg/l

### *8.2. Exposure controls*

**Protective equipment**

**Appropriate engineering controls** Provide adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls as the primary means to minimise worker exposure. Use explosion-proof electrical, ventilating and lighting equipment. Avoid heat, flames and other sources of ignition.

**Eye/face protection** Eyewear complying with an approved standard should be worn if a risk assessment indicates eye contact is possible. The following protection should be worn: Dust-resistant, chemical splash goggles. Personal protective equipment for eye and face protection should comply with European Standard EN166.

**Hand protection** Chemical-resistant, impervious gloves complying with an approved standard should be worn if a risk assessment indicates skin contact is possible. The most suitable glove should be chosen in consultation with the glove supplier/manufacturer, who can provide information about the breakthrough time of the glove material. To protect hands from chemicals, gloves should comply with European Standard EN374.

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| | |
|---|---|
| **Other skin and body protection** | Wear appropriate clothing to prevent repeated or prolonged skin contact. |
| **Hygiene measures** | When using do not eat, drink or smoke. Wash at the end of each work shift and before eating, smoking and using the toilet. Remove contaminated clothing and protective equipment before entering eating areas. Eye wash facilities and emergency shower must be available when handling this product. |
| **Respiratory protection** | Respiratory protection complying with an approved standard should be worn if a risk assessment indicates inhalation of contaminants is possible. Protection against nuisance dust must be used when the airborne concentration exceeds 10 mg/m3. Ensure all respiratory protective equipment is suitable for its intended use and is 'CE'-marked. If ventilation is inadequate, suitable respiratory protection must be worn. EN 136/140/141/145/143/149 |

## SECTION 9: Physical and chemical properties

### *9.1. Information on basic physical and chemical properties*

| | |
|---|---|
| **Appearance** | Dusty powder. |
| **Colour** | White. |
| **Odour** | Odourless. |
| **Odour threshold** | No information available. |
| **pH** | pH (diluted solution): 11 - 12 (10 g/l) |
| **Melting point** | >100°C |
| **Pour Point** | No information available. |
| **Freezing Point** | No information available. |
| **Initial boiling point and range** | No information available. |
| **Flash point** | No information available. |
| **Evaporation rate** | No information available. |
| **Evaporation factor** | No information available. |
| **Flammability (solid, gas)** | No information available. |
| **Upper/lower flammability or explosive limits** | No information available. |
| **Other flammability** | No information available. |
| **Vapour pressure** | No information available. |
| **Vapour density** | No information available. |
| **Relative density** | No information available. |
| **Bulk density** | No information available. |
| **Solubility(ies)** | Soluble in water. |
| **Partition coefficient** | No information available. |
| **Auto-ignition temperature** | No information available. |
| **Decomposition Temperature** | No information available. |
| **Viscosity** | No information available. |

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| | |
|---|---|
| **Explosive properties** | Not considered to be explosive.<br>Dust may form explosive mixture with air. |
| **Explosive under the influence of a flame** | No information available. |
| **Oxidising properties** | Does not meet the criteria for classification as oxidising. |

*9.2. Other information*

| | |
|---|---|
| **Other information** | No information available. |
| **Refractive index** | No information available. |
| **Particle size** | No information available. |
| **Molecular weight** | No information available. |
| **Volatility** | No information available. |
| **Saturation concentration** | No information available. |
| **Critical temperature** | No information available. |
| **Volatile organic compound** | No information available. |

## SECTION 10: Stability and reactivity

*10.1. Reactivity*

| | |
|---|---|
| **Reactivity** | No test data specifically related to reactivity available for this product or its ingredients. |

*10.2. Chemical stability*

| | |
|---|---|
| **Stability** | Stable at normal ambient temperatures and when used as recommended. |

*10.3. Possibility of hazardous reactions*

| | |
|---|---|
| **Possibility of hazardous reactions** | Dust may form explosive mixture with air. |

*10.4. Conditions to avoid*

| | |
|---|---|
| **Conditions to avoid** | Avoid the accumulation of dust. Avoid dust close to ignition sources. Take precautionary measures against static discharge.<br>Avoid exposure to high temperatures or direct sunlight. |

*10.5. Incompatible materials*

| | |
|---|---|
| **Materials to avoid** | Oxidising agents. Acids. Chemically-active metals. |

*10.6. Hazardous decomposition products*

| | |
|---|---|
| **Hazardous decomposition products** | Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapours. Phosphine (PH3). Oxides of the following substances: Carbon. Phosphorus. |

## SECTION 11: Toxicological information

*11.1. Information on toxicological effects*

**Acute toxicity - oral**

| | |
|---|---|
| **Notes (oral $LD_{50}$)** | Harmful if swallowed. |
| **ATE oral (mg/kg)** | 1,068.18 |

**Acute toxicity - dermal**

| | |
|---|---|
| **Notes (dermal $LD_{50}$)** | No specific test data are available. |

**Acute toxicity - inhalation**

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| | |
|---|---|
| **Notes (inhalation $LC_{50}$)** | No specific test data are available. |

**Skin corrosion/irritation**

| | |
|---|---|
| **Skin corrosion/irritation** | Not irritating. Rabbit |

**Serious eye damage/irritation**

| | |
|---|---|
| **Serious eye damage/irritation** | Causes serious eye irritation. Rabbit |

**Respiratory sensitisation**

| | |
|---|---|
| **Respiratory sensitisation** | No information available. |

**Skin sensitisation**

| | |
|---|---|
| **Skin sensitisation** | No information available. |

**Germ cell mutagenicity**

| | |
|---|---|
| **Genotoxicity - in vitro** | This substance has no evidence of mutagenic properties.<br>Bacterial reverse mutation test: Negative. Gene mutation: Negative. |
| **Genotoxicity - in vivo** | No information available. |

**Carcinogenicity**

| | |
|---|---|
| **Carcinogenicity** | No information available. |

**Reproductive toxicity**

| | |
|---|---|
| **Reproductive toxicity - fertility** | No information available. |
| **Reproductive toxicity - development** | No information available. |

**Specific target organ toxicity - single exposure**

| | |
|---|---|
| **STOT - single exposure** | No information available. |

**Specific target organ toxicity - repeated exposure**

| | |
|---|---|
| **STOT - repeated exposure** | No information available. |

**Aspiration hazard**

| | |
|---|---|
| **Aspiration hazard** | No information available. |

| | |
|---|---|
| **Inhalation** | Overexposure may cause the following adverse effects: Respiratory system irritation. Coughing. |
| **Ingestion** | Harmful if swallowed. |
| **Skin contact** | Skin irritation should not occur when used as recommended. |
| **Eye contact** | Causes serious eye irritation. Overexposure may cause the following adverse effects: Pain or irritation. Profuse watering of the eyes. Redness. |

**Toxicological information on ingredients.**

***TETRASODIUM (1-HYDROXYETHYLIDENE)BISPHOSPHONATE***

*Acute toxicity - oral*

| | |
|---|---|
| **Acute toxicity oral ($LD_{50}$ mg/kg)** | 940.0 |
| **Species** | Rat |
| **Notes (oral $LD_{50}$)** | Harmful if swallowed.<br>$LD_{50}$ 940 mg/kg, Oral, Rat OECD 401 |

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| | |
|---|---|
| **ATE oral (mg/kg)** | 940.0 |
| *Acute toxicity - dermal* | |
| **Acute toxicity dermal ($LD_{50}$ mg/kg)** | 2,000.0 |
| **Species** | Rabbit |
| **Notes (dermal $LD_{50}$)** | $LD_{50}$ > 2000 mg/kg, Dermal, Rabbit, Male, Female OECD 402 |
| *Acute toxicity - inhalation* | |
| **Notes (inhalation $LC_{50}$)** | No specific test data are available. |
| *Skin corrosion/irritation* | |
| **Skin corrosion/irritation** | Not irritating. Rabbit Erythema/eschar score: < 1 OECD 404 |
| *Serious eye damage/irritation* | |
| **Serious eye damage/irritation** | Causes serious eye irritation. Rabbit OECD 405 |
| *Respiratory sensitisation* | |
| **Respiratory sensitisation** | Conclusive data but not sufficient for classification. |
| *Skin sensitisation* | |
| **Skin sensitisation** | Conclusive data but not sufficient for classification. |
| *Germ cell mutagenicity* | |
| **Genotoxicity - in vitro** | This substance has no evidence of mutagenic properties.<br>Bacterial reverse mutation test: Negative. Gene mutation: Negative. |
| **Genotoxicity - in vivo** | No information available. |
| *Carcinogenicity* | |
| **Carcinogenicity** | Conclusive data but not sufficient for classification. |
| *Reproductive toxicity* | |
| **Reproductive toxicity - fertility** | Conclusive data but not sufficient for classification. |
| **Reproductive toxicity - development** | Conclusive data but not sufficient for classification. |
| *Specific target organ toxicity - single exposure* | |
| **STOT - single exposure** | No information available. |
| *Specific target organ toxicity - repeated exposure* | |
| **STOT - repeated exposure** | NOAEL 19 - 24 mg/kg, Oral, Rat |
| *Aspiration hazard* | |
| **Aspiration hazard** | Not applicable. |

| | |
|---|---|
| **Inhalation** | When heated, vapours/gases hazardous to health may be formed. Effects may be delayed. Keep affected person under observation. Prolonged or repeated exposure to vapours in high concentrations may cause the following adverse effects: Respiratory system irritation. Coughing. |

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**Ingestion** Harmful if swallowed. Ingestion may cause severe irritation of the mouth, the oesophagus and the gastrointestinal tract.

**Skin contact** Skin irritation should not occur when used as recommended.

**Eye contact** Causes serious eye irritation. Symptoms following overexposure may include the following: Pain or irritation. Profuse watering of the eyes. Redness.

## SECTION 12: Ecological information

**Ecotoxicity** The product is not expected to be hazardous to the environment. However, large or frequent spills may have hazardous effects on the environment.

**Ecological information on ingredients.**

*TETRASODIUM (1-HYDROXYETHYLIDENE)BISPHOSPHONATE*

**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*

**Acute aquatic toxicity**

**Acute toxicity - fish** $LC_{50}$, 96 hours: 368 mg/l, Oncorhynchus mykiss (Rainbow trout)
$LC_{50}$, 14 day: 180 mg/l, Oncorhynchus mykiss (Rainbow trout)

**Acute toxicity - aquatic invertebrates** $EC_{50}$, 48 hours: 527 mg/l, Daphnia magna

**Ecological information on ingredients.**

*TETRASODIUM (1-HYDROXYETHYLIDENE)BISPHOSPHONATE*

*Acute aquatic toxicity*

**Acute toxicity - fish** LC50, 96 hours: > 200 mg/l, Poecilia reticulata (Guppy)
OECD 203

**Acute toxicity - aquatic invertebrates** $EC_{50}$, 48 hours: 370 - 380 mg/l, Daphnia magna
OECD 202

**Acute toxicity - aquatic plants** $EC_{50}$, 96 hour: 9.16 mg/l, Selenastrum capricornutum

**Acute toxicity - microorganisms** $IC_{50}$, 0.5 hour: > 290 mg/l,

*12.2. Persistence and degradability*

**Persistence and degradability** Inherently biodegradable.

**Biodegradation** - Degradation 33%: 30 day
OECD 302B

**Ecological information on ingredients.**

*TETRASODIUM (1-HYDROXYETHYLIDENE)BISPHOSPHONATE*

**Persistence and degradability** The product is not readily biodegradable.

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| | |
|---|---|
| **Biodegradation** | - Degradation 0.4 - 4.8%: 79 day<br>OECD 304A<br>- Degradation 1.6%: 79 day<br>OECD 301E |

### *12.3. Bioaccumulative potential*

| | |
|---|---|
| **Bioaccumulative potential** | Bioaccumulation is unlikely.<br>BCF: 35, Fish |
| **Partition coefficient** | No information available. |

**Ecological information on ingredients.**

*TETRASODIUM (1-HYDROXYETHYLIDENE)BISPHOSPHONATE*

| | |
|---|---|
| **Bioaccumulative potential** | Bioaccumulation is unlikely.<br>BCF: 17.9, Fish OECD 305 C |
| **Partition coefficient** | log Pow: < -3.5 |

### *12.4. Mobility in soil*

| | |
|---|---|
| **Mobility** | The product is soluble in water. |

**Ecological information on ingredients.**

*TETRASODIUM (1-HYDROXYETHYLIDENE)BISPHOSPHONATE*

| | |
|---|---|
| **Mobility** | The product is soluble in water. |

### *12.5. Results of PBT and vPvB assessment*

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

**Ecological information on ingredients.**

*TETRASODIUM (1-HYDROXYETHYLIDENE)BISPHOSPHONATE*

| | |
|---|---|
| **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*

| | |
|---|---|
| **Other adverse effects** | Not determined. |

**Ecological information on ingredients.**

*TETRASODIUM (1-HYDROXYETHYLIDENE)BISPHOSPHONATE*

| | |
|---|---|
| **Other adverse effects** | Not determined. |

## SECTION 13: Disposal considerations

### *13.1. Waste treatment methods*

| | |
|---|---|
| **General information** | Waste is classified as hazardous waste. Do not puncture or incinerate, even when empty. |
| **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

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**General** The product is not covered by international regulations on the transport of dangerous goods (IMDG, IATA, ADR/RID).

### *14.1. UN number*

Not applicable.

### *14.2. UN proper shipping name*

Not applicable.

### *14.3. Transport hazard class(es)*

No transport warning sign required.

### *14.4. Packing group*

Not applicable.

### *14.5. Environmental hazards*

**Environmentally hazardous substance/marine pollutant**
No.

### *14.6. Special precautions for user*

Not applicable.

**Emergency Action Code** 2Z

### *14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code*

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** Not applicable.

## SECTION 15: Regulatory information

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

**EU legislation** Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (as amended).
Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures (as amended).
Commission Regulation (EU) No 2015/830 of 28 May 2015.

### *15.2. Chemical safety assessment*

A chemical safety assessment has been carried out.

**Inventories**

**EU - EINECS/ELINCS**
All the ingredients are listed or exempt.

**Canada - DSL/NDSL**
All the ingredients are listed or exempt.

**US - TSCA**
All the ingredients are listed or exempt.

**Australia - AICS**
All the ingredients are listed or exempt.

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**Japan - ENCS**
All the ingredients are listed or exempt.

**Korea - KECI**
All the ingredients are listed or exempt.

**China - IECSC**
All the ingredients are listed or exempt.

**Philippines – PICCS**
All the ingredients are listed or exempt.

**New Zealand - NZIOC**
All the ingredients are listed or exempt.

**Taiwan - TCSI**
All the ingredients are listed or exempt.

## SECTION 16: Other information

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**Abbreviations and acronyms used in the safety data sheet**

ATE: Acute Toxicity Estimate.
ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.
ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways.
CAS: Chemical Abstracts Service.
DNEL: Derived No Effect Level.
IATA: International Air Transport Association.
IMDG: International Maritime Dangerous Goods.
Kow: Octanol-water partition coefficient.
$LC_{50}$: Lethal Concentration to 50 % of a test population.
$LD_{50}$: Lethal Dose to 50% of a test population (Median Lethal Dose).
PBT: Persistent, Bioaccumulative and Toxic substance.
PNEC: Predicted No Effect Concentration.
REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006.
RID: European Agreement concerning the International Carriage of Dangerous Goods by Rail.
vPvB: Very Persistent and Very Bioaccumulative.
IARC: International Agency for Research on Cancer.
MARPOL 73/78: International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978.
cATpE: Converted Acute Toxicity Point Estimate.
BCF: Bioconcentration Factor.
BOD: Biochemical Oxygen Demand.
$EC_{50}$: 50% of maximal Effective Concentration.
LOAEC: Lowest Observed Adverse Effect Concentration.
LOAEL: Lowest Observed Adverse Effect Level.
NOAEC: No Observed Adverse Effect Concentration.
NOAEL: No Observed Adverse Effect Level.
NOEC: No Observed Effect Concentration.
LOEC: Lowest Observed Effect Concentration.
DMEL: Derived Minimal Effect Level.
EL50: Exposure Limit 50
hPa: Hectopascal
LL50: Lethal Loading fifty
OECD: Organisation for Economic Co-operation and Development
POW: Octanol-water partition coefficient
SCBA: self-contained breathing apparatus
STP: Sewage Treatment Plant
VOC: Volatile Organic Compounds

**Classification abbreviations and acronyms**

Acute Tox. = Acute toxicity
Aquatic Acute = Hazardous to the aquatic environment (acute)
Aquatic Chronic = Hazardous to the aquatic environment (chronic)

**Key literature references and sources for data**

Supplier's information.

**Classification procedures according to Regulation (EC) 1272/2008**

Acute Tox. 4 - H302: Expert judgement. Eye Irrit. 2 - H319: Expert judgement.

**Revision comments**

NOTE: Lines within the margin indicate significant changes from the previous revision.

**Revision date**

17/11/2021

# DEQUEST 2016D

| | |
|---|---|
| **Version number** | 2.000 |
| **Supersedes date** | 07/09/2020 |
| **SDS number** | 60808 |
| **SDS status** | Approved. |
| **Hazard statements in full** | H302 Harmful if swallowed.<br>H319 Causes serious eye irritation. |
| **Signature** | Lisa Bland |

# Exposure scenario
# Manufacture of substance

## Identification

| | |
|---|---|
| **Product name** | TETRASODIUM (1-HYDROXYETHYLIDENE)BISPHOSPHONATE |
| **REACH registration number** | 01-2119510382-52-XXXX |
| **CAS number** | 3794-83-0 |
| **EC number** | 223-267-7 |
| **Supplier** | Univar Solutions UK Ltd<br>Aquarius House<br>6 Mid Point Business Park<br>Bradford<br>BD3 7AY<br>+44 1274 267300<br>+44 1274 267306<br>SDS.EMEA@univarsolutions.com |

## 1. Title of exposure scenario

| | |
|---|---|
| **Main title** | Manufacture of substance |
| **Process scope** | Manufacture of the substance or use as a process chemical or extraction agent within closed or contained systems. Includes incidental exposures during recycling/recovery, material transfers, storage, sampling, associated laboratory activities, maintenance and loading (including marine vessel/barge, road/rail car and bulk container). |
| **Main sector** | SU3 Industrial uses |
| **Sector of use** | SU8 Manufacture of bulk, large-scale chemicals (including petroleum products)<br>SU9 Manufacture of fine chemicals |

***Environment***

| | |
|---|---|
| **Environmental release category** | ERC1 Manufacture of the substance |

***Worker***

# Manufacture of substance

**Process category**

PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions
PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions
PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition
PROC4 Chemical production where opportunity for exposure arises
PROC5 Mixing or blending in batch processes
PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities
PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities
PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)
PROC14 Tabletting, compression, extrusion, pelletisation, granulation
PROC15 Use as laboratory reagent.

## 2. Conditions of use affecting exposure (Industrial - Environment 1)

*Product characteristics*

**Physical state**

Solid , or: Solid in solution

**Concentration details**

Covers concentrations up to 100 %.

Organic salts.

*Risk management measures*

**Good practice**

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. Carefully handle the substance to minimise releases. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

*Conditions and measures related to external treatment of waste for disposal*

**Waste treatment**

External treatment and disposal of waste should comply with applicable local and/or national regulations. Dispose of waste cans and containers according to local regulations.

## 2. Conditions of use affecting exposure (Workers - Health 1)

*Product characteristics*

**Physical state**

Solid , or: Solid in solution

**Concentration details**

Covers concentrations up to 100 %.

Organic salts.

*Frequency and duration of use*

Covers daily exposures up to 8 hours (unless stated differently).

*Human factors not influenced by risk management*

# Manufacture of substance

**Potentially exposed body parts**

PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC15 Use as laboratory reagent. Covers skin contact area up to 240 cm².
PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC4 Chemical production where opportunity for exposure arises PROC5 Mixing or blending in batch processes PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing) Covers skin contact area up to 480 cm².
PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities Covers skin contact area up to 960 cm².

*Other given operational conditions affecting workers exposure*

**Setting**

Indoor/outdoor use.

*Technical conditions and measures at process level (source) to prevent release*

**Technical protective measures**

Provide extract ventilation to points where emissions occur. Ensure the ventilation system is regularly maintained and tested.
Control any potential exposure using measures such as contained or enclosed systems, properly designed and maintained facilities and a good standard of general ventilation. Drain down systems and clear transfer lines prior to breaking containment. Drain down and flush equipment where possible prior to maintenance. Where there is potential for exposure: Ensure relevant staff are informed of the nature of exposure and aware of basic actions to minimise exposures; Ensure suitable personal protective equipment is available; Clear up spills and dispose of waste in accordance with regulatory requirements; monitor effectiveness of control measures; consider the need for health surveillance; identify and implement corrective actions.

*Organisational measures to prevent/limit releases, dispersion and exposure*

**Organisational measures**

Assumes a good basic standard of occupational hygiene is implemented.

*Risk management measures*

Wear suitable working clothes.
Wear suitable gloves tested to EN374.
Use suitable eye protection.
Personal protective equipment for eye and face protection should comply with European Standard EN166.
Wear a respirator conforming to EN140 with Type A filter or better.

## 3. Exposure estimation (Environment 1)

**Assessment method**

Used EUSES model.

Predicted exposures are not expected to exceed the applicable exposure limits (given in Section 8 of the SDS) when the operational conditions/risk management measures given in Section 2 are implemented.

## 3. Exposure estimation (Health 1)

**Assessment method**

Used ECETOC TRA model.

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.

# Exposure scenario
# Formulation

## Identification

| | |
|---|---|
| **Product name** | TETRASODIUM (1-HYDROXYETHYLIDENE)BISPHOSPHONATE |
| **REACH registration number** | 01-2119510382-52-XXXX |
| **CAS number** | 3794-83-0 |
| **EC number** | 223-267-7 |
| **Supplier** | Univar Solutions UK Ltd<br>Aquarius House<br>6 Mid Point Business Park<br>Bradford<br>BD3 7AY<br>+44 1274 267300<br>+44 1274 267306<br>SDS.EMEA@univarsolutions.com |

## 1. Title of exposure scenario

| | |
|---|---|
| **Main title** | Formulation |
| **Process scope** | Formulation of the substance and its mixtures in batch or continuous operations within closed or contained systems, including incidental exposures during storage, materials transfers, mixing, maintenance, sampling and associated laboratory activities. |
| **Product category** | PC3 Air care products.<br>PC8 Biocidal products<br>PC9a Coatings and paints, thinners, paint removers.<br>PC9b Fillers, putties, plasters, modelling clay.<br>PC9c Finger paints.<br>PC12 Lawn and garden preparations (- fertilizers).<br>PC19 Intermediate.<br>PC20 Processing aids such as pH-regulators, flocculants, precipitants, neutralization agents<br>PC21 Laboratory chemicals.<br>PC23 Leather treatment products<br>PC26 Paper and board treatment products<br>PC27 Plant protection products.<br>PC28 Perfumes, fragrances.<br>PC30 Photochemicals.<br>PC31 Polishes and wax blends.<br>PC34 Textile dyes and impregnating products<br>PC35 Washing and cleaning products<br>PC36 Water softeners.<br>PC37 Water treatment chemicals.<br>PC39 Cosmetics, personal care.<br>PC40 Extraction agents. |
| **Main sector** | SU3 Industrial uses |

# Formulation

| | |
|---|---|
| **Sector of use** | SU8 Manufacture of bulk, large-scale chemicals (including petroleum products)<br>SU10 Formulation [mixing] of preparations and/or re-packaging |

*Environment*

| | |
|---|---|
| **Environmental release category** | ERC1 Manufacture of the substance<br>ERC2 Formulation into mixture<br>ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article) |

*Worker*

| | |
|---|---|
| **Process category** | PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions<br>PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions<br>PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition<br>PROC4 Chemical production where opportunity for exposure arises<br>PROC5 Mixing or blending in batch processes<br>PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities<br>PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities<br>PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)<br>PROC14 Tabletting, compression, extrusion, pelletisation, granulation<br>PROC15 Use as laboratory reagent.<br>PROC26 Handling of solid inorganic substances at ambient temperature |

## 2. Conditions of use affecting exposure (Industrial - Environment 1)

*Product characteristics*

| | |
|---|---|
| **Physical state** | Solid , or: Solid in solution |
| **Concentration details** | Concentration of substance in product: 25%<br>Organic salts. |

*Risk management measures*

| | |
|---|---|
| **Good practice** | Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. Carefully handle the substance to minimise releases. |

*Technical onsite conditions and measures to reduce or limit discharges to air, water and soil*

| | |
|---|---|
| **Water** | Onsite wastewater treatment required. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of the local water authority. Risk from environmental exposure is driven by marine water. |

*Conditions and measures related to external treatment of waste for disposal*

| | |
|---|---|
| **Waste treatment** | External treatment and disposal of waste should comply with applicable local and/or national regulations. Dispose of waste cans and containers according to local regulations. |

## 2. Conditions of use affecting exposure (Workers - Health 1)

*Product characteristics*

| | |
|---|---|
| **Physical state** | Solid , or: Solid in solution |
| **Concentration details** | Concentration of substance in product: 25%<br>Organic salts. |

# Formulation

*Frequency and duration of use*

Covers daily exposures up to 8 hours (unless stated differently).

*Human factors not influenced by risk management*

**Potentially exposed body parts**

PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC15 Use as laboratory reagent. Covers skin contact area up to 240 cm².
PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC4 Chemical production where opportunity for exposure arises PROC5 Mixing or blending in batch processes PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing) Covers skin contact area up to 480 cm².
PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities Covers skin contact area up to 960 cm².
PROC26 Handling of solid inorganic substances at ambient temperature Covers skin contact area up to 1980 cm².

*Other given operational conditions affecting workers exposure*

**Setting**

Indoor/outdoor use.

*Technical conditions and measures at process level (source) to prevent release*

**Technical protective measures**

Provide extract ventilation to points where emissions occur. Ensure the ventilation system is regularly maintained and tested.
Control any potential exposure using measures such as contained or enclosed systems, properly designed and maintained facilities and a good standard of general ventilation. Drain down systems and clear transfer lines prior to breaking containment. Drain down and flush equipment where possible prior to maintenance. Where there is potential for exposure: Ensure relevant staff are informed of the nature of exposure and aware of basic actions to minimise exposures; Ensure suitable personal protective equipment is available; Clear up spills and dispose of waste in accordance with regulatory requirements; monitor effectiveness of control measures; consider the need for health surveillance; identify and implement corrective actions.

*Organisational measures to prevent/limit releases, dispersion and exposure*

**Organisational measures**

Assumes a good basic standard of occupational hygiene is implemented.

*Risk management measures*

Wear suitable working clothes.
Wear suitable gloves tested to EN374.
Use suitable eye protection.
Personal protective equipment for eye and face protection should comply with European Standard EN166.
Wear a respirator conforming to EN140 with Type A filter or better.

## 3. Exposure estimation (Environment 1)

**Assessment method**

Used EUSES model.

Predicted exposures are not expected to exceed the applicable exposure limits (given in Section 8 of the SDS) when the operational conditions/risk management measures given in Section 2 are implemented.

# Formulation

## 3. Exposure estimation (Health 1)

**Assessment method**

Used ECETOC TRA model.

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.

# Exposure scenario
# Antiscaling Agents

## Identification

| | |
|---|---|
| **Product name** | TETRASODIUM (1-HYDROXYETHYLIDENE)BISPHOSPHONATE |
| **REACH registration number** | 01-2119510382-52-XXXX |
| **CAS number** | 3794-83-0 |
| **EC number** | 223-267-7 |
| **Supplier** | Univar Solutions UK Ltd<br>Aquarius House<br>6 Mid Point Business Park<br>Bradford<br>BD3 7AY<br>+44 1274 267300<br>+44 1274 267306<br>SDS.EMEA@univarsolutions.com |

## 1. Title of exposure scenario

| | |
|---|---|
| **Main title** | Antiscaling Agents |
| **Process scope** | Formulation of the substance and its mixtures in batch or continuous operations within closed or contained systems, including incidental exposures during storage, materials transfers, mixing, maintenance, sampling and associated laboratory activities. |
| **Product category** | PC35 Washing and cleaning products<br>PC36 Water softeners. |
| **Main sector** | SU3 Industrial uses |

*Environment*

| | |
|---|---|
| **Environmental release category** | ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article)<br>ERC8a Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) |

*Worker*

| | |
|---|---|
| **Process category** | PROC7 Industrial spraying<br>PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities<br>PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities<br>PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)<br>PROC10 Roller application or brushing |

## 2. Conditions of use affecting exposure (Industrial - Environment 1)

*Product characteristics*

| | |
|---|---|
| **Physical state** | Solid , or: Solid in solution |

# Antiscaling Agents

**Concentration details** Concentration of substance in product: 25%

Organic salts.

*Risk management measures*

**Good practice** Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. Carefully handle the substance to minimise releases.

*Technical onsite conditions and measures to reduce or limit discharges to air, water and soil*

**Water** Onsite wastewater treatment required. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of the local water authority. Risk from environmental exposure is driven by marine water.

*Conditions and measures related to external treatment of waste for disposal*

**Waste treatment** External treatment and disposal of waste should comply with applicable local and/or national regulations. Dispose of waste cans and containers according to local regulations.

## 2. Conditions of use affecting exposure (Workers - Health 1)

*Product characteristics*

**Physical state** Solid , or: Solid in solution

**Concentration details** Concentration of substance in product: 25%

Organic salts.

*Frequency and duration of use*

Covers daily exposures up to 8 hours (unless stated differently).

*Human factors not influenced by risk management*

**Potentially exposed body parts** PROC7 Industrial spraying PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities Covers skin contact area up to 240 $cm^2$.
PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing) PROC10 Roller application or brushing Covers skin contact area up to 480 $cm^2$.

*Other given operational conditions affecting workers exposure*

**Setting** Indoor/outdoor use.

*Technical conditions and measures at process level (source) to prevent release*

**Technical protective measures** Provide extract ventilation to points where emissions occur. Ensure the ventilation system is regularly maintained and tested.
Control any potential exposure using measures such as contained or enclosed systems, properly designed and maintained facilities and a good standard of general ventilation. Drain down systems and clear transfer lines prior to breaking containment. Drain down and flush equipment where possible prior to maintenance. Where there is potential for exposure: Ensure relevant staff are informed of the nature of exposure and aware of basic actions to minimise exposures; Ensure suitable personal protective equipment is available; Clear up spills and dispose of waste in accordance with regulatory requirements; monitor effectiveness of control measures; consider the need for health surveillance; identify and implement corrective actions.

*Organisational measures to prevent/limit releases, dispersion and exposure*

**Organisational measures** Assumes a good basic standard of occupational hygiene is implemented.

# Antiscaling Agents

***Risk management measures***

Wear suitable working clothes.
Wear suitable gloves tested to EN374.
Use suitable eye protection.
Personal protective equipment for eye and face protection should comply with European Standard EN166.
Wear a respirator conforming to EN140 with Type A filter or better.

## 3. Exposure estimation (Environment 1)

**Assessment method**

Used EUSES model.

Predicted exposures are not expected to exceed the applicable exposure limits (given in Section 8 of the SDS) when the operational conditions/risk management measures given in Section 2 are implemented.

## 3. Exposure estimation (Health 1)

**Assessment method**

Used ECETOC TRA model.

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.

# Exposure scenario
# Use in Cleaning Agents - Industrial

## Identification

| | |
|---|---|
| **Product name** | TETRASODIUM (1-HYDROXYETHYLIDENE)BISPHOSPHONATE |
| **REACH registration number** | 01-2119510382-52-XXXX |
| **CAS number** | 3794-83-0 |
| **EC number** | 223-267-7 |
| **Supplier** | Univar Solutions UK Ltd<br>Aquarius House<br>6 Mid Point Business Park<br>Bradford<br>BD3 7AY<br>+44 1274 267300<br>+44 1274 267306<br>SDS.EMEA@univarsolutions.com |

## 1. Title of exposure scenario

| | |
|---|---|
| **Main title** | Use in Cleaning Agents - Industrial |
| **Process scope** | Covers the use as a component of cleaning products, including transfer from storage, pouring/unloading from drums or containers and exposures during mixing/diluting in the preparatory phase and cleaning activities (including spraying, brushing, dipping, wiping, automated and by hand), related equipment cleaning and maintenance. |
| **Product category** | PC35 Washing and cleaning products<br>PC36 Water softeners. |
| **Main sector** | SU3 Industrial uses |

*Environment*

| | |
|---|---|
| **Environmental release category** | ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article) |

*Worker*

| | |
|---|---|
| **Process category** | PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions<br>PROC4 Chemical production where opportunity for exposure arises<br>PROC7 Industrial spraying<br>PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities |

## 2. Conditions of use affecting exposure (Industrial - Environment 1)

*Product characteristics*

| | |
|---|---|
| **Physical state** | Solid , or: Solid in solution |
| **Concentration details** | Covers concentrations up to 100 %. |

# Use in Cleaning Agents - Industrial

Organic salts.

*Frequency and duration of use*

Emission days: 365 days/year

*Risk management measures*

**Good practice** Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. Carefully handle the substance to minimise releases.

*Technical onsite conditions and measures to reduce or limit discharges to air, water and soil*

**Air** No air emission controls required; required removal efficiency is 0%.

**Water** Typical onsite wastewater treatment technology provides removal efficiency of 50%. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of the local water authority.

*Conditions and measures related to external treatment of waste for disposal*

**Sludge treatment** Sludge is disposed of or recovered.

**Waste treatment** External treatment and disposal of waste should comply with applicable local and/or national regulations. Dispose of waste cans and containers according to local regulations.

## 2. Conditions of use affecting exposure (Workers - Health 1)

*Product characteristics*

**Physical state** Solid , or: Solid in solution

**Concentration details** Covers concentrations up to 100 %.

Organic salts.

*Amounts used*

Amount per use: 50 kg

*Frequency and duration of use*

Covers daily exposures up to 8 hours (unless stated differently).

*Human factors not influenced by risk management*

**Potentially exposed body parts** PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC4 Chemical production where opportunity for exposure arises PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities Covers skin contact area up to 480 cm². PROC7 Industrial spraying Covers skin contact area up to 1500 cm².

*Other given operational conditions affecting workers exposure*

**Setting** Indoor/outdoor use.

*Technical conditions and measures at process level (source) to prevent release*

# Use in Cleaning Agents - Industrial

**Technical protective measures** Provide extract ventilation to points where emissions occur. Ensure the ventilation system is regularly maintained and tested.
Control any potential exposure using measures such as contained or enclosed systems, properly designed and maintained facilities and a good standard of general ventilation. Drain down systems and clear transfer lines prior to breaking containment. Drain down and flush equipment where possible prior to maintenance. Where there is potential for exposure: Ensure relevant staff are informed of the nature of exposure and aware of basic actions to minimise exposures; Ensure suitable personal protective equipment is available; Clear up spills and dispose of waste in accordance with regulatory requirements; monitor effectiveness of control measures; consider the need for health surveillance; identify and implement corrective actions.

***Organisational measures to prevent/limit releases, dispersion and exposure***

**Organisational measures** Assumes a good basic standard of occupational hygiene is implemented. Clean equipment and the work area every day.

***Risk management measures***

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent/minimise exposures and to report any skin problems that may develop.
Wear suitable working clothes.
Wear suitable gloves tested to EN374.
Use suitable eye protection.
Personal protective equipment for eye and face protection should comply with European Standard EN166.
Wear a respirator conforming to EN140 with Type A filter or better.

## 3. Exposure estimation (Environment 1)

**Assessment method** Used EUSES model.

Predicted exposures are not expected to exceed the applicable exposure limits (given in Section 8 of the SDS) when the operational conditions/risk management measures given in Section 2 are implemented.

## 3. Exposure estimation (Health 1)

**Assessment method** Used ECETOC TRA model.

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.

# Exposure scenario
# Laundry and dish-washing products

## Identification

| | |
|---|---|
| **Product name** | TETRASODIUM (1-HYDROXYETHYLIDENE)BISPHOSPHONATE |
| **REACH registration number** | 01-2119510382-52-XXXX |
| **CAS number** | 3794-83-0 |
| **EC number** | 223-267-7 |
| **Supplier** | Univar Solutions UK Ltd<br>Aquarius House<br>6 Mid Point Business Park<br>Bradford<br>BD3 7AY<br>+44 1274 267300<br>+44 1274 267306<br>SDS.EMEA@univarsolutions.com |

## 1. Title of exposure scenario

| | |
|---|---|
| **Main title** | Laundry and dish-washing products |
| **Process scope** | Covers the use as a component of cleaning products within closed or contained systems, including incidental exposures during transfer from storage, mixing/diluting in the preparatory phase and cleaning activities, related equipment cleaning and maintenance. |
| **Product category** | PC3 Air care products.<br>PC31 Polishes and wax blends.<br>PC35 Washing and cleaning products<br>PC36 Water softeners. |
| **Main sector** | SU22 Professional uses |

***Environment***

| | |
|---|---|
| **Environmental release category** | ERC8a Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)<br>ERC8d Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor) |

***Worker***

# Laundry and dish-washing products

| | |
|---|---|
| **Process category** | PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions<br>PROC4 Chemical production where opportunity for exposure arises<br>PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities<br>PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities<br>PROC10 Roller application or brushing<br>PROC11 Non industrial spraying<br>PROC13 Treatment of articles by dipping and pouring.<br>PROC15 Use as laboratory reagent.<br>PROC19 Manual activities involving hand contact |

## 2. Conditions of use affecting exposure (Industrial - Environment 1)

*Product characteristics*

| | |
|---|---|
| **Physical state** | Solid , or: Solid in solution |
| **Concentration details** | Covers concentrations up to 100 %.<br>Organic salts. |

*Frequency and duration of use*

Continuous use/release.

*Risk management measures*

| | |
|---|---|
| **Good practice** | Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. Carefully handle the substance to minimise releases. |

*Technical onsite conditions and measures to reduce or limit discharges to air, water and soil*

| | |
|---|---|
| **Air** | No air emission controls required; required removal efficiency is 0%. |
| **Water** | Typical onsite wastewater treatment technology provides removal efficiency of 50%. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of the local water authority. |

*Conditions and measures related to external treatment of waste for disposal*

| | |
|---|---|
| **Sludge treatment** | Sludge is disposed of or recovered. |
| **Waste treatment** | External treatment and disposal of waste should comply with applicable local and/or national regulations. Dispose of waste cans and containers according to local regulations. |

## 2. Conditions of use affecting exposure (Workers - Health 1)

*Product characteristics*

| | |
|---|---|
| **Physical state** | Solid , or: Solid in solution |
| **Concentration details** | Covers concentrations up to 100 %.<br>Organic salts. |

*Amounts used*

Amount per use: 30 kg

*Frequency and duration of use*

Covers daily exposures up to 8 hours (unless stated differently).

*Human factors not influenced by risk management*

# Laundry and dish-washing products

**Potentially exposed body parts**

PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC4 Chemical production where opportunity for exposure arises PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC13 Treatment of articles by dipping and pouring. Covers skin contact area up to 480 cm².
PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities PROC10 Roller application or brushing Covers skin contact area up to 960 cm².
PROC11 Non industrial spraying Covers skin contact area up to 1500 cm².
PROC15 Use as laboratory reagent. Covers skin contact area up to 240 cm².
PROC19 Manual activities involving hand contact Covers skin contact area up to 1980 cm².

*Other given operational conditions affecting workers exposure*

**Setting**

Indoor/outdoor use.

*Technical conditions and measures at process level (source) to prevent release*

**Technical protective measures**

Provide extract ventilation to points where emissions occur. Ensure the ventilation system is regularly maintained and tested.
Control any potential exposure using measures such as contained or enclosed systems, properly designed and maintained facilities and a good standard of general ventilation. Drain down systems and clear transfer lines prior to breaking containment. Drain down and flush equipment where possible prior to maintenance. Where there is potential for exposure: Ensure relevant staff are informed of the nature of exposure and aware of basic actions to minimise exposures; Ensure suitable personal protective equipment is available; Clear up spills and dispose of waste in accordance with regulatory requirements; monitor effectiveness of control measures; consider the need for health surveillance; identify and implement corrective actions.

*Organisational measures to prevent/limit releases, dispersion and exposure*

**Organisational measures**

Assumes a good basic standard of occupational hygiene is implemented. Clean equipment and the work area every day.

*Risk management measures*

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent/minimise exposures and to report any skin problems that may develop.
Wear suitable working clothes.
Wear suitable gloves tested to EN374.
Use suitable eye protection.
Personal protective equipment for eye and face protection should comply with European Standard EN166.
Wear a respirator conforming to EN140 with Type A filter or better.

## 3. Exposure estimation (Environment 1)

**Assessment method**

Used EUSES model.

Predicted exposures are not expected to exceed the applicable exposure limits (given in Section 8 of the SDS) when the operational conditions/risk management measures given in Section 2 are implemented.

## 3. Exposure estimation (Health 1)

**Assessment method**

Used ECETOC TRA model.

## Laundry and dish-washing products

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.

# Exposure scenario
# Use in Cleaning Agents - Consumer

## Identification

| | |
|---|---|
| **Product name** | TETRASODIUM (1-HYDROXYETHYLIDENE)BISPHOSPHONATE |
| **REACH registration number** | 01-2119510382-52-XXXX |
| **CAS number** | 3794-83-0 |
| **EC number** | 223-267-7 |
| **Supplier** | Univar Solutions UK Ltd<br>Aquarius House<br>6 Mid Point Business Park<br>Bradford<br>BD3 7AY<br>+44 1274 267300<br>+44 1274 267306<br>SDS.EMEA@univarsolutions.com |

## 1. Title of exposure scenario

| | |
|---|---|
| **Main title** | Use in Cleaning Agents - Consumer |
| **Process scope** | Covers general exposures to consumers arising from the use of household products sold as washing and cleaning products, aerosols, coatings, de-icers, lubricants and air care products. |
| **Product category** | PC3 Air care products.<br>PC31 Polishes and wax blends.<br>PC35 Washing and cleaning products<br>PC36 Water softeners. |
| **Main sector** | SU21 Consumer uses |

*Environment*

| | |
|---|---|
| **Environmental release category** | ERC8a Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)<br>ERC8d Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor) |

## 2. Conditions of use affecting exposure (Non-industrial - Environment 1)

*Product characteristics*

| | |
|---|---|
| **Physical state** | Solid , or: Solid in solution |
| **Concentration details** | Limit the substance content in the product to 25%.<br>Organic salts. |

*Frequency and duration of use*

Continuous use/release.

*Risk management measures*

# Use in Cleaning Agents - Consumer

| | |
|---|---|
| **Good practice** | Common practices vary across sites, thus conservative process release estimates used. Carefully handle the substance to minimise releases. |
| **Technical measures** | Prevent environmental discharge consistent with regulatory requirements. Prevent discharge of undissolved substance to or recover from onsite waste water. |
| **STP type** | Municipal STP. |

## 2. Conditions of use affecting exposure (Non-industrial - Health 1)

*Product characteristics*

| | |
|---|---|
| **Physical state** | Solid , or: Solid in solution |
| **Concentration details** | Concentration of substance in product: 25%<br>Organic salts. |

*Amounts used*

Amount per use: 30 kg

*Other given operational conditions affecting Non-industrial exposure*

| | |
|---|---|
| **Setting** | Indoor/outdoor use. |

*Other given operational conditions affecting Non-industrial exposure*

Use suitable eye protection and gloves. Wear suitable working clothes. Wear a suitable dust mask.

## 3. Exposure estimation (Environment 1)

| | |
|---|---|
| **Assessment method** | Used EUSES model.<br>Predicted exposures are not expected to exceed the applicable exposure limits (given in Section 8 of the SDS) when the operational conditions/risk management measures given in Section 2 are implemented. |

## 3. Exposure estimation (Health 1)

| | |
|---|---|
| **Assessment method** | Used ECETOC TRA model.<br>Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. |

# Exposure scenario
# Cosmetics, personal care products - Professional

## Identification

| | |
|---|---|
| **Product name** | TETRASODIUM (1-HYDROXYETHYLIDENE)BISPHOSPHONATE |
| **REACH registration number** | 01-2119510382-52-XXXX |
| **CAS number** | 3794-83-0 |
| **EC number** | 223-267-7 |
| **Supplier** | Univar Solutions UK Ltd<br>Aquarius House<br>6 Mid Point Business Park<br>Bradford<br>BD3 7AY<br>+44 1274 267300<br>+44 1274 267306<br>SDS.EMEA@univarsolutions.com |

## 1. Title of exposure scenario

| | |
|---|---|
| **Main title** | Cosmetics, personal care products - Professional |
| **Process scope** | Covers the use as a component of cleaning products, including pouring/unloading from drums or containers and exposures during mixing/diluting in the preparatory phase and cleaning activities (including spraying, brushing, dipping, wiping, automated and by hand). |
| **Product category** | PC36 Water softeners.<br>PC39 Cosmetics, personal care. |
| **Main sector** | SU22 Professional uses |

***Environment***

| | |
|---|---|
| **Environmental release category** | ERC8a Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) |

***Worker***

| | |
|---|---|
| **Process category** | PROC11 Non industrial spraying<br>PROC19 Manual activities involving hand contact |

## 2. Conditions of use affecting exposure (Industrial - Environment 1)

***Product characteristics***

| | |
|---|---|
| **Physical state** | Solid , or: Solid in solution |
| **Concentration details** | Limit the substance content in the product to 25%.<br>Organic salts. |

***Frequency and duration of use***

# Cosmetics, personal care products - Professional

Emission days: 365 days/year
Continuous.

*Risk management measures*

**Good practice** Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. Carefully handle the substance to minimise releases.

*Technical onsite conditions and measures to reduce or limit discharges to air, water and soil*

**Air** Air emission controls are not applicable as there is no direct release to air.

**Water** Typical onsite wastewater treatment technology provides removal efficiency of 50%. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of the local water authority.

*Conditions and measures related to external treatment of waste for disposal*

**Sludge treatment** Sludge is disposed of or recovered.

**Waste treatment** External treatment and disposal of waste should comply with applicable local and/or national regulations. Dispose of waste cans and containers according to local regulations.

## 2. Conditions of use affecting exposure (Workers - Health 1)

*Product characteristics*

**Physical state** Solid , or: Solid in solution

**Concentration details** Covers concentrations up to 100 %.

Organic salts.

*Amounts used*

Amount per use: 0.55 kg

*Frequency and duration of use*

Covers daily exposures up to 8 hours (unless stated differently).

*Human factors not influenced by risk management*

**Potentially exposed body parts** PROC11 Non industrial spraying Covers skin contact area up to 1500 cm².
PROC19 Manual activities involving hand contact Covers skin contact area up to 1980 cm².

*Other given operational conditions affecting workers exposure*

**Setting** Indoor use.

*Technical conditions and measures at process level (source) to prevent release*

**Technical protective measures** Provide extract ventilation to points where emissions occur. Ensure the ventilation system is regularly maintained and tested.

*Organisational measures to prevent/limit releases, dispersion and exposure*

**Organisational measures** Assumes a good basic standard of occupational hygiene is implemented. Clean equipment and the work area every day.

*Risk management measures*

# Cosmetics, personal care products - Professional

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent/minimise exposures and to report any skin problems that may develop.
Wear suitable working clothes.
Wear suitable gloves tested to EN374.
Use suitable eye protection.
Personal protective equipment for eye and face protection should comply with European Standard EN166.
Wear a respirator conforming to EN140 with Type A filter or better.

## 3. Exposure estimation (Environment 1)

**Assessment method**

Used EUSES model.

Predicted exposures are not expected to exceed the applicable exposure limits (given in Section 8 of the SDS) when the operational conditions/risk management measures given in Section 2 are implemented.

## 3. Exposure estimation (Health 1)

**Assessment method**

Used ECETOC TRA model.

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.

# Exposure scenario
# Cosmetics, personal care products - Consumer

## Identification

| | |
|---|---|
| **Product name** | TETRASODIUM (1-HYDROXYETHYLIDENE)BISPHOSPHONATE |
| **REACH registration number** | 01-2119510382-52-XXXX |
| **CAS number** | 3794-83-0 |
| **EC number** | 223-267-7 |
| **Supplier** | Univar Solutions UK Ltd<br>Aquarius House<br>6 Mid Point Business Park<br>Bradford<br>BD3 7AY<br>+44 1274 267300<br>+44 1274 267306<br>SDS.EMEA@univarsolutions.com |

## 1. Title of exposure scenario

| | |
|---|---|
| **Main title** | Cosmetics, personal care products - Consumer |
| **Process scope** | Covers general exposures to consumers arising from the use of household products sold as washing and cleaning products, aerosols, coatings, de-icers, lubricants and air care products. |
| **Product category** | PC36 Water softeners.<br>PC39 Cosmetics, personal care. |
| **Main sector** | SU21 Consumer uses |

***Environment***

| | |
|---|---|
| **Environmental release category** | ERC8a Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)<br>ERC8d Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor) |

## 2. Conditions of use affecting exposure (Non-industrial - Environment 1)

***Product characteristics***

| | |
|---|---|
| **Physical state** | Solid , or: Solid in solution |
| **Concentration details** | Limit the substance content in the product to 25%.<br>Organic salts. |

***Frequency and duration of use***

Continuous use/release.

***Risk management measures***

# Cosmetics, personal care products - Consumer

| | |
|---|---|
| **Good practice** | Common practices vary across sites, thus conservative process release estimates used. Carefully handle the substance to minimise releases. |
| **Technical measures** | Prevent environmental discharge consistent with regulatory requirements. Prevent discharge of undissolved substance to or recover from onsite waste water. |
| **STP type** | Municipal STP. |

## 2. Conditions of use affecting exposure (Non-industrial - Health 1)

*Product characteristics*

| | |
|---|---|
| **Physical state** | Solid , or: Solid in solution |
| **Concentration details** | Concentration of substance in product: 25%<br>Organic salts. |

*Amounts used*

Amount per use: 30 kg

*Other given operational conditions affecting Non-industrial exposure*

| | |
|---|---|
| **Setting** | Indoor/outdoor use. |

*Other given operational conditions affecting Non-industrial exposure*

Use suitable eye protection and gloves. Wear suitable working clothes. Wear a suitable dust mask.

## 3. Exposure estimation (Environment 1)

| | |
|---|---|
| **Assessment method** | Used EUSES model.<br>Predicted exposures are not expected to exceed the applicable exposure limits (given in Section 8 of the SDS) when the operational conditions/risk management measures given in Section 2 are implemented. |

## 3. Exposure estimation (Health 1)

| | |
|---|---|
| **Assessment method** | Used ECETOC TRA model.<br>Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. |

# Exposure scenario
# Use in Coatings - Consumer

## Identification

| | |
|---|---|
| **Product name** | TETRASODIUM (1-HYDROXYETHYLIDENE)BISPHOSPHONATE |
| **REACH registration number** | 01-2119510382-52-XXXX |
| **CAS number** | 3794-83-0 |
| **EC number** | 223-267-7 |
| **Supplier** | Univar Solutions UK Ltd<br>Aquarius House<br>6 Mid Point Business Park<br>Bradford<br>BD3 7AY<br>+44 1274 267300<br>+44 1274 267306<br>SDS.EMEA@univarsolutions.com |

## 1. Title of exposure scenario

| | |
|---|---|
| **Main title** | Use in Coatings - Consumer |
| **Process scope** | Covers the use in coatings (paints, inks, adhesives, etc.), including exposures during use (including product transfer and preparation, application by brush, spray by hand or similar methods) and equipment cleaning. |
| **Product category** | PC9a Coatings and paints, thinners, paint removers. |
| **Article category** | AC4 Stone, plaster, cement, glass and ceramic articles<br>AC7 Metal articles<br>AC11 Wood articles |
| **Main sector** | SU21 Consumer uses |

***Environment***

| | |
|---|---|
| **Environmental release category** | ERC8c Widespread use leading to inclusion into/onto article (indoor)<br>ERC8f Widespread use leading to inclusion into/onto article (outdoor) |

## 2. Conditions of use affecting exposure (Non-industrial - Environment 1)

***Product characteristics***

| | |
|---|---|
| **Physical state** | Solid , or: Solid in solution |
| **Concentration details** | Avoid using at a product concentration greater than 0.048mg/cm². |
| | Organic salts. |

***Frequency and duration of use***

Continuous use/release.

***Risk management measures***

# Use in Coatings - Consumer

| | |
|---|---|
| **Good practice** | Common practices vary across sites, thus conservative process release estimates used. Carefully handle the substance to minimise releases. |
| **Technical measures** | Prevent environmental discharge consistent with regulatory requirements. Prevent discharge of undissolved substance to or recover from onsite waste water. |
| **STP type** | Municipal STP. |

## 2. Conditions of use affecting exposure (Non-industrial - Health 1)

*Product characteristics*

| | |
|---|---|
| **Physical state** | Solid , or: Solid in solution |
| **Concentration details** | Avoid using at a product concentration greater than 0.048mg/cm². |
| | Organic salts. |

*Amounts used*

Amount per use: 16 litre

*Other given operational conditions affecting Non-industrial exposure*

| | |
|---|---|
| **Setting** | Indoor/outdoor use. |

*Other given operational conditions affecting Non-industrial exposure*

Use suitable eye protection and gloves. Wear suitable working clothes. Wear a suitable dust mask.

## 3. Exposure estimation (Environment 1)

| | |
|---|---|
| **Assessment method** | Used EUSES model. |
| | Predicted exposures are not expected to exceed the applicable exposure limits (given in Section 8 of the SDS) when the operational conditions/risk management measures given in Section 2 are implemented. |

## 3. Exposure estimation (Health 1)

| | |
|---|---|
| **Assessment method** | Used ECETOC TRA model. |
| | Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. |

# Exposure scenario
# Water treatment

## Identification

| | |
|---|---|
| **Product name** | TETRASODIUM (1-HYDROXYETHYLIDENE)BISPHOSPHONATE |
| **REACH registration number** | 01-2119510382-52-XXXX |
| **CAS number** | 3794-83-0 |
| **EC number** | 223-267-7 |
| **Supplier** | Univar Solutions UK Ltd<br>Aquarius House<br>6 Mid Point Business Park<br>Bradford<br>BD3 7AY<br>+44 1274 267300<br>+44 1274 267306<br>SDS.EMEA@univarsolutions.com |

## 1. Title of exposure scenario

| | |
|---|---|
| **Main title** | Water treatment |
| **Process scope** | Covers the use of the substance for the treatment of water at industrial facilities in closed or contained systems, including incidental exposures during material transfers and equipment cleaning. |
| **Product category** | PC20 Processing aids such as pH-regulators, flocculants, precipitants, neutralization agents<br>PC36 Water softeners.<br>PC37 Water treatment chemicals. |
| **Main sector** | SU3 Industrial uses |
| **Sector of use** | SU23 Electricity, steam, gas, water supply and sewage treatment |
| ***Environment*** | |
| **Environmental release category** | ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article) |
| ***Worker*** | |
| **Process category** | PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions<br>PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions<br>PROC4 Chemical production where opportunity for exposure arises<br>PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities<br>PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities |

## 2. Conditions of use affecting exposure (Industrial - Environment 1)

# Water treatment

*Product characteristics*

**Physical state** Solid , or: Solid in solution

**Concentration details** Concentration of substance in product: 65%

Organic salts.

*Frequency and duration of use*

Emission days: 365 days/year

*Risk management measures*

**Good practice** Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. Carefully handle the substance to minimise releases.

*Technical onsite conditions and measures to reduce or limit discharges to air, water and soil*

**Water** Onsite wastewater treatment required. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of the local water authority. Risk from environmental exposure is driven by marine water.

*Conditions and measures related to external treatment of waste for disposal*

**Waste treatment** External treatment and disposal of waste should comply with applicable local and/or national regulations. Dispose of waste cans and containers according to local regulations.

## 2. Conditions of use affecting exposure (Workers - Health 1)

*Product characteristics*

**Physical state** Solid , or: Solid in solution

**Concentration details** Concentration of substance in product: 25%

Organic salts.

*Amounts used*

PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions
PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions
Amount per use: 0.06 kg
PROC4 Chemical production where opportunity for exposure arises
Amount per use: 2.5 kg
PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities
PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities
Amount per use: 0.44 kg

*Frequency and duration of use*

Covers daily exposures up to 8 hours (unless stated differently).

*Human factors not influenced by risk management*

# Water treatment

**Potentially exposed body parts**

PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions Covers skin contact area up to 240 cm². PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC4 Chemical production where opportunity for exposure arises PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities Covers skin contact area up to 480 cm². PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities Covers skin contact area up to 960 cm².

*Other given operational conditions affecting workers exposure*

**Setting**

Indoor/outdoor use.

*Technical conditions and measures at process level (source) to prevent release*

**Technical protective measures**

Provide extract ventilation to points where emissions occur. Ensure the ventilation system is regularly maintained and tested.
Control any potential exposure using measures such as contained or enclosed systems, properly designed and maintained facilities and a good standard of general ventilation. Drain down systems and clear transfer lines prior to breaking containment. Drain down and flush equipment where possible prior to maintenance. Where there is potential for exposure: Ensure relevant staff are informed of the nature of exposure and aware of basic actions to minimise exposures; Ensure suitable personal protective equipment is available; Clear up spills and dispose of waste in accordance with regulatory requirements; monitor effectiveness of control measures; consider the need for health surveillance; identify and implement corrective actions.

*Organisational measures to prevent/limit releases, dispersion and exposure*

**Organisational measures**

Assumes a good basic standard of occupational hygiene is implemented.

*Risk management measures*

Wear suitable working clothes.
Wear suitable gloves tested to EN374.
Use suitable eye protection.
Personal protective equipment for eye and face protection should comply with European Standard EN166.
Wear a respirator conforming to EN140 with Type A filter or better.

## 3. Exposure estimation (Environment 1)

**Assessment method**

Used EUSES model.

Predicted exposures are not expected to exceed the applicable exposure limits (given in Section 8 of the SDS) when the operational conditions/risk management measures given in Section 2 are implemented.

## 3. Exposure estimation (Health 1)

**Assessment method**

Used ECETOC TRA model.

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.

# Exposure scenario
# Metal surface treatment products, including galvanic and electroplating products

## Identification

| | |
|---|---|
| **Product name** | TETRASODIUM (1-HYDROXYETHYLIDENE)BISPHOSPHONATE |
| **REACH registration number** | 01-2119510382-52-XXXX |
| **CAS number** | 3794-83-0 |
| **EC number** | 223-267-7 |
| **Supplier** | Univar Solutions UK Ltd<br>Aquarius House<br>6 Mid Point Business Park<br>Bradford<br>BD3 7AY<br>+44 1274 267300<br>+44 1274 267306<br>SDS.EMEA@univarsolutions.com |

## 1. Title of exposure scenario

| | |
|---|---|
| **Main title** | Metal surface treatment products, including galvanic and electroplating products |
| **Process scope** | Covers the use as a component of cleaning products within closed or contained systems, including incidental exposures during transfer from storage, mixing/diluting in the preparatory phase and cleaning activities, related equipment cleaning and maintenance. |
| **Product category** | PC7 Base metals and alloys.<br>PC14 Metal surface treatment products |
| **Main sector** | SU3 Industrial uses |
| **Sector of use** | SU14 Manufacture of basic metals, including alloys<br>SU15 Manufacture of fabricated metal products, except machinery and equipment |

***Environment***

| | |
|---|---|
| **Environmental release category** | ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article)<br>ERC5 Use at industrial site leading to inclusion into/onto article<br>ERC6b Use of reactive processing aid at industrial site (no inclusion into or onto article)<br>ERC8a Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)<br>ERC8b Widespread use of reactive processing aid (no inclusion into or onto article, indoor)<br>ERC8c Widespread use leading to inclusion into/onto article (indoor)<br>ERC7 Use of functional fluid at industrial site |

***Worker***

# Metal surface treatment products, including galvanic and electroplating products

| | |
|---|---|
| **Process category** | PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions<br>PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition<br>PROC5 Mixing or blending in batch processes<br>PROC7 Industrial spraying<br>PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)<br>PROC13 Treatment of articles by dipping and pouring. |

## 2. Conditions of use affecting exposure (Industrial - Environment 1)

*Product characteristics*

| | |
|---|---|
| **Physical state** | Solid , or: Solid in solution |
| **Concentration details** | Concentration of substance in product: 25%<br>Organic salts. |

*Amounts used*

Annual amount per site: 1000 kg

*Risk management measures*

| | |
|---|---|
| **Good practice** | Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. Carefully handle the substance to minimise releases. |

*Technical onsite conditions and measures to reduce or limit discharges to air, water and soil*

| | |
|---|---|
| **Water** | Onsite wastewater treatment required. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of the local water authority. Risk from environmental exposure is driven by marine water. |

*Conditions and measures related to external treatment of waste for disposal*

| | |
|---|---|
| **Waste treatment** | External treatment and disposal of waste should comply with applicable local and/or national regulations. Dispose of waste cans and containers according to local regulations. |

## 2. Conditions of use affecting exposure (Workers - Health 1)

*Product characteristics*

| | |
|---|---|
| **Physical state** | Solid , or: Solid in solution |
| **Concentration details** | Concentration of substance in product: 25%<br>Organic salts. |

*Amounts used*

Amount per use: 3.3 kg

*Frequency and duration of use*

Covers daily exposures up to 8 hours (unless stated differently).

*Human factors not influenced by risk management*

# Metal surface treatment products, including galvanic and electroplating products

**Potentially exposed body parts**

PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition Covers skin contact area up to 240 cm².
PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC5 Mixing or blending in batch processes PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing) PROC13 Treatment of articles by dipping and pouring. Covers skin contact area up to 480 cm².
PROC7 Industrial spraying Covers skin contact area up to 1500 cm².

*Other given operational conditions affecting workers exposure*

**Setting**

Indoor/outdoor use.

*Technical conditions and measures at process level (source) to prevent release*

**Technical protective measures**

Handle substance within a closed system. Provide extract ventilation to points where emissions occur. Ensure the ventilation system is regularly maintained and tested.
Control any potential exposure using measures such as contained or enclosed systems, properly designed and maintained facilities and a good standard of general ventilation. Drain down systems and clear transfer lines prior to breaking containment. Drain down and flush equipment where possible prior to maintenance. Where there is potential for exposure: Ensure relevant staff are informed of the nature of exposure and aware of basic actions to minimise exposures; Ensure suitable personal protective equipment is available; Clear up spills and dispose of waste in accordance with regulatory requirements; monitor effectiveness of control measures; consider the need for health surveillance; identify and implement corrective actions.

*Organisational measures to prevent/limit releases, dispersion and exposure*

**Organisational measures**

Assumes a good basic standard of occupational hygiene is implemented.

*Risk management measures*

Wear suitable working clothes.
Wear suitable gloves tested to EN374.
Use suitable eye protection.
Personal protective equipment for eye and face protection should comply with European Standard EN166.
Wear a respirator conforming to EN140 with Type A filter or better.

## 3. Exposure estimation (Environment 1)

**Assessment method**

Used EUSES model.

Predicted exposures are not expected to exceed the applicable exposure limits (given in Section 8 of the SDS) when the operational conditions/risk management measures given in Section 2 are implemented.

## 3. Exposure estimation (Health 1)

**Assessment method**

Used ECETOC TRA model.

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.

# Exposure scenario
# Oil field scale inhibitor

## Identification

| | |
|---|---|
| **Product name** | TETRASODIUM (1-HYDROXYETHYLIDENE)BISPHOSPHONATE |
| **REACH registration number** | 01-2119510382-52-XXXX |
| **CAS number** | 3794-83-0 |
| **EC number** | 223-267-7 |
| **Supplier** | Univar Solutions UK Ltd<br>Aquarius House<br>6 Mid Point Business Park<br>Bradford<br>BD3 7AY<br>+44 1274 267300<br>+44 1274 267306<br>SDS.EMEA@univarsolutions.com |

## 1. Title of exposure scenario

| | |
|---|---|
| **Main title** | Oil field scale inhibitor |
| **Process scope** | Oil field well drilling and production operations (including drilling muds and well cleaning), including material transfers, onsite formulation, well head operations, shaker room activities and related maintenance. |
| **Product category** | PC35 Washing and cleaning products<br>PC37 Water treatment chemicals. |
| **Main sector** | SU3 Industrial uses |
| **Sector of use** | SU2a Mining (without offshore industries)<br>SU2b Offshore industries |

***Environment***

| | |
|---|---|
| **Environmental release category** | ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article) |

***Worker***

| | |
|---|---|
| **Process category** | PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions<br>PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition<br>PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities<br>PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities |

## 2. Conditions of use affecting exposure (Industrial - Environment 1)

***Product characteristics***

# Oil field scale inhibitor

| | |
|---|---|
| **Physical state** | Solid , or: Solid in solution |
| **Concentration details** | Covers concentrations up to 100 %.<br>Organic salts. |

*Frequency and duration of use*

Emission days: 365 days/year

*Risk management measures*

| | |
|---|---|
| **Good practice** | Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. Carefully handle the substance to minimise releases. |

*Technical onsite conditions and measures to reduce or limit discharges to air, water and soil*

| | |
|---|---|
| **Water** | Onsite wastewater treatment required. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of the local water authority. Risk from environmental exposure is driven by marine water. |

*Conditions and measures related to external treatment of waste for disposal*

| | |
|---|---|
| **Waste treatment** | External treatment and disposal of waste should comply with applicable local and/or national regulations. Dispose of waste cans and containers according to local regulations. |

## 2. Conditions of use affecting exposure (Workers - Health 1)

*Product characteristics*

| | |
|---|---|
| **Physical state** | Solid , or: Solid in solution |
| **Concentration details** | Covers concentrations up to 100 %.<br>Organic salts. |

*Amounts used*

Daily amount per site: 0.75 tonnes

*Frequency and duration of use*

Covers daily exposures up to 8 hours (unless stated differently).

*Human factors not influenced by risk management*

| | |
|---|---|
| **Potentially exposed body parts** | PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition Covers skin contact area up to 240 cm².<br>PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities Covers skin contact area up to 480 cm².<br>PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities Covers skin contact area up to 960 cm². |

*Other given operational conditions affecting workers exposure*

| | |
|---|---|
| **Setting** | Indoor/outdoor use. |

*Technical conditions and measures at process level (source) to prevent release*

# Oil field scale inhibitor

**Technical protective measures** Provide extract ventilation to points where emissions occur. Ensure the ventilation system is regularly maintained and tested.
Control any potential exposure using measures such as contained or enclosed systems, properly designed and maintained facilities and a good standard of general ventilation. Drain down systems and clear transfer lines prior to breaking containment. Drain down and flush equipment where possible prior to maintenance. Where there is potential for exposure: Ensure relevant staff are informed of the nature of exposure and aware of basic actions to minimise exposures; Ensure suitable personal protective equipment is available; Clear up spills and dispose of waste in accordance with regulatory requirements; monitor effectiveness of control measures; consider the need for health surveillance; identify and implement corrective actions.

***Organisational measures to prevent/limit releases, dispersion and exposure***

**Organisational measures** Assumes a good basic standard of occupational hygiene is implemented.

***Risk management measures***

Wear suitable working clothes.
Wear suitable gloves tested to EN374.
Use suitable eye protection.
Personal protective equipment for eye and face protection should comply with European Standard EN166.
Wear a respirator conforming to EN140 with Type A filter or better.

## 3. Exposure estimation (Environment 1)

**Assessment method** Used EUSES model.

Predicted exposures are not expected to exceed the applicable exposure limits (given in Section 8 of the SDS) when the operational conditions/risk management measures given in Section 2 are implemented.

## 3. Exposure estimation (Health 1)

**Assessment method** Used ECETOC TRA model.

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.

# Exposure scenario
# Use in Coatings - Industrial

## Identification

| | |
|---|---|
| **Product name** | TETRASODIUM (1-HYDROXYETHYLIDENE)BISPHOSPHONATE |
| **REACH registration number** | 01-2119510382-52-XXXX |
| **CAS number** | 3794-83-0 |
| **EC number** | 223-267-7 |
| **Supplier** | Univar Solutions UK Ltd<br>Aquarius House<br>6 Mid Point Business Park<br>Bradford<br>BD3 7AY<br>+44 1274 267300<br>+44 1274 267306<br>SDS.EMEA@univarsolutions.com |

## 1. Title of exposure scenario

| | |
|---|---|
| **Main title** | Use in Coatings - Industrial |
| **Process scope** | Covers the use in coatings (paints, inks, adhesives, etc.), including exposures during use (including materials receipt, storage, preparation and transfer from bulk and semi-bulk, application by spray, roller, spreader, dip, flow, fluidised bed on production lines and film formation) and equipment cleaning, maintenance and associated laboratory activities. |
| **Product category** | PC9a Coatings and paints, thinners, paint removers. |
| **Article category** | AC1 Vehicles<br>AC2 Machinery, mechanical appliances, electrical/electronic articles<br>AC4 Stone, plaster, cement, glass and ceramic articles<br>AC7 Metal articles<br>AC11 Wood articles |
| **Main sector** | SU3 Industrial uses |
| **Sector of use** | SU17 General manufacturing, e.g. machinery, equipment, vehicles, other transport equipment<br>SU18 Manufacture of furniture |

***Environment***

| | |
|---|---|
| **Environmental release category** | ERC5 Use at industrial site leading to inclusion into/onto article<br>ERC8c Widespread use leading to inclusion into/onto article (indoor) |

***Worker***

# Use in Coatings - Industrial

**Process category**

PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions
PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions
PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition
PROC5 Mixing or blending in batch processes
PROC7 Industrial spraying
PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities
PROC10 Roller application or brushing
PROC13 Treatment of articles by dipping and pouring.

## 2. Conditions of use affecting exposure (Industrial - Environment 1)

*Product characteristics*

**Physical state**

Solid , or: Solid in solution

**Concentration details**

Concentration of substance in product: 25%

Organic salts.

*Amounts used*

Annual amount per site: 1000 kg

*Frequency and duration of use*

Continuous.

*Risk management measures*

**Good practice**

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. Carefully handle the substance to minimise releases.

*Technical onsite conditions and measures to reduce or limit discharges to air, water and soil*

**Water**

Onsite wastewater treatment required. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of the local water authority. Risk from environmental exposure is driven by marine water.

*Conditions and measures related to external treatment of waste for disposal*

**Waste treatment**

External treatment and disposal of waste should comply with applicable local and/or national regulations. Dispose of waste cans and containers according to local regulations.

## 2. Conditions of use affecting exposure (Workers - Health 1)

*Product characteristics*

**Physical state**

Solid , or: Solid in solution

**Concentration details**

Concentration of substance in product: 100%

Organic salts.

*Amounts used*

Amount per use: 12.1 kg

*Frequency and duration of use*

Covers daily exposures up to 8 hours (unless stated differently).

*Human factors not influenced by risk management*

# Use in Coatings - Industrial

| | |
|---|---|
| **Potentially exposed body parts** | PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition Covers skin contact area up to 240 cm².<br>PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC5 Mixing or blending in batch processes PROC10 Roller application or brushing Covers skin contact area up to 480 cm².<br>PROC13 Treatment of articles by dipping and pouring. Covers skin contact area up to 960 cm².<br>PROC7 Industrial spraying Covers skin contact area up to 1500 cm². |

***Other given operational conditions affecting workers exposure***

| | |
|---|---|
| **Setting** | Indoor/outdoor use. |

***Technical conditions and measures at process level (source) to prevent release***

| | |
|---|---|
| **Technical protective measures** | Provide extract ventilation to points where emissions occur. Ensure the ventilation system is regularly maintained and tested.<br>Control any potential exposure using measures such as contained or enclosed systems, properly designed and maintained facilities and a good standard of general ventilation. Drain down systems and clear transfer lines prior to breaking containment. Drain down and flush equipment where possible prior to maintenance. Where there is potential for exposure: Ensure relevant staff are informed of the nature of exposure and aware of basic actions to minimise exposures; Ensure suitable personal protective equipment is available; Clear up spills and dispose of waste in accordance with regulatory requirements; monitor effectiveness of control measures; consider the need for health surveillance; identify and implement corrective actions. |

***Organisational measures to prevent/limit releases, dispersion and exposure***

| | |
|---|---|
| **Organisational measures** | Assumes a good basic standard of occupational hygiene is implemented. |

***Risk management measures***

Wear suitable working clothes.
Wear suitable gloves tested to EN374.
Use suitable eye protection.
Personal protective equipment for eye and face protection should comply with European Standard EN166.
Wear a respirator conforming to EN140 with Type A filter or better.

## 3. Exposure estimation (Environment 1)

| | |
|---|---|
| **Assessment method** | Used EUSES model.<br><br>Predicted exposures are not expected to exceed the applicable exposure limits (given in Section 8 of the SDS) when the operational conditions/risk management measures given in Section 2 are implemented. |

## 3. Exposure estimation (Health 1)

| | |
|---|---|
| **Assessment method** | Used ECETOC TRA model.<br><br>Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. |

# Exposure scenario
# Use in Coatings - Professional

## Identification

| | |
|---|---|
| **Product name** | TETRASODIUM (1-HYDROXYETHYLIDENE)BISPHOSPHONATE |
| **REACH registration number** | 01-2119510382-52-XXXX |
| **CAS number** | 3794-83-0 |
| **EC number** | 223-267-7 |
| **Supplier** | Univar Solutions UK Ltd<br>Aquarius House<br>6 Mid Point Business Park<br>Bradford<br>BD3 7AY<br>+44 1274 267300<br>+44 1274 267306<br>SDS.EMEA@univarsolutions.com |

## 1. Title of exposure scenario

| | |
|---|---|
| **Main title** | Use in Coatings - Professional |
| **Process scope** | Covers the use in coatings (paints, inks, adhesives, etc.), including exposures during use (including materials receipt, storage, preparation and transfer from bulk and semi-bulk, application by spray, roller, spreader, dip, flow, fluidised bed on production lines and film formation) and equipment cleaning, maintenance and associated laboratory activities. |
| **Product category** | PC9a Coatings and paints, thinners, paint removers. |
| **Article category** | AC4 Stone, plaster, cement, glass and ceramic articles<br>AC7 Metal articles<br>AC11 Wood articles |
| **Main sector** | SU22 Professional uses |
| **Sector of use** | SU19 Building and construction work |

*Environment*

| | |
|---|---|
| **Environmental release category** | ERC5 Use at industrial site leading to inclusion into/onto article<br>ERC8c Widespread use leading to inclusion into/onto article (indoor)<br>ERC8f Widespread use leading to inclusion into/onto article (outdoor) |

*Worker*

# Use in Coatings - Professional

| | |
|---|---|
| **Process category** | PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions<br>PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition<br>PROC4 Chemical production where opportunity for exposure arises<br>PROC5 Mixing or blending in batch processes<br>PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities<br>PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities<br>PROC10 Roller application or brushing<br>PROC11 Non industrial spraying<br>PROC19 Manual activities involving hand contact |

## 2. Conditions of use affecting exposure (Industrial - Environment 1)

*Product characteristics*

| | |
|---|---|
| **Physical state** | Solid , or: Solid in solution |
| **Concentration details** | Covers concentrations up to 100 %.<br>Organic salts. |

*Amounts used*

Annual amount per site: 625 litre

*Frequency and duration of use*

Continuous.

*Risk management measures*

| | |
|---|---|
| **Good practice** | Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. Carefully handle the substance to minimise releases. |

*Technical onsite conditions and measures to reduce or limit discharges to air, water and soil*

| | |
|---|---|
| **Water** | Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of the local water authority. Risk from environmental exposure is driven by marine water. |

*Conditions and measures related to external treatment of waste for disposal*

| | |
|---|---|
| **Waste treatment** | External treatment and disposal of waste should comply with applicable local and/or national regulations. Dispose of waste cans and containers according to local regulations. |

## 2. Conditions of use affecting exposure (Workers - Health 1)

*Product characteristics*

| | |
|---|---|
| **Physical state** | Solid , or: Solid in solution |
| **Concentration details** | Concentration of substance in product: 100% Unless otherwise stated.<br>Organic salts. |

*Amounts used*

Amount per use: 12.1 kg

*Frequency and duration of use*

Covers daily exposures up to 8 hours (unless stated differently).

*Human factors not influenced by risk management*

# Use in Coatings - Professional

**Potentially exposed body parts**

PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition Covers skin contact area up to 240 cm².
PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC4 Chemical production where opportunity for exposure arises PROC5 Mixing or blending in batch processes PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities Covers skin contact area up to 480 cm².
PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities PROC10 Roller application or brushing Covers skin contact area up to 960 cm².
PROC11 Non industrial spraying Covers skin contact area up to 1500 cm².
PROC19 Manual activities involving hand contact Covers skin contact area up to 1980 cm².

*Other given operational conditions affecting workers exposure*

**Setting**

Indoor/outdoor use.

*Technical conditions and measures at process level (source) to prevent release*

**Technical protective measures**

Provide extract ventilation to points where emissions occur. Ensure the ventilation system is regularly maintained and tested.

Control any potential exposure using measures such as contained or enclosed systems, properly designed and maintained facilities and a good standard of general ventilation. Drain down systems and clear transfer lines prior to breaking containment. Drain down and flush equipment where possible prior to maintenance. Where there is potential for exposure: Ensure relevant staff are informed of the nature of exposure and aware of basic actions to minimise exposures; Ensure suitable personal protective equipment is available; Clear up spills and dispose of waste in accordance with regulatory requirements; monitor effectiveness of control measures; consider the need for health surveillance; identify and implement corrective actions. PROC11 Non industrial spraying Limit the substance content in the product to 1%.

*Organisational measures to prevent/limit releases, dispersion and exposure*

**Organisational measures**

Assumes a good basic standard of occupational hygiene is implemented.

*Risk management measures*

Wear suitable working clothes.
Wear suitable gloves tested to EN374.
Use suitable eye protection.
Personal protective equipment for eye and face protection should comply with European Standard EN166.
Wear a respirator conforming to EN140 with Type A filter or better.

## 3. Exposure estimation (Environment 1)

**Assessment method**

Used EUSES model.

Predicted exposures are not expected to exceed the applicable exposure limits (given in Section 8 of the SDS) when the operational conditions/risk management measures given in Section 2 are implemented.

## 3. Exposure estimation (Health 1)

**Assessment method**

Used ECETOC TRA model.

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.

# Exposure scenario
# Paper and board dye, finishing and impregnation products: including bleaches and other processing aids

## Identification

| | |
|---|---|
| **Product name** | TETRASODIUM (1-HYDROXYETHYLIDENE)BISPHOSPHONATE |
| **REACH registration number** | 01-2119510382-52-XXXX |
| **CAS number** | 3794-83-0 |
| **EC number** | 223-267-7 |
| **Supplier** | Univar Solutions UK Ltd<br>Aquarius House<br>6 Mid Point Business Park<br>Bradford<br>BD3 7AY<br>+44 1274 267300<br>+44 1274 267306<br>SDS.EMEA@univarsolutions.com |

## 1. Title of exposure scenario

| | |
|---|---|
| **Main title** | Paper and board dye, finishing and impregnation products: including bleaches and other processing aids |
| **Process scope** | Covers the use as a component of cleaning products, including transfer from storage, pouring/unloading from drums or containers and exposures during mixing/diluting in the preparatory phase and cleaning activities (including spraying, brushing, dipping, wiping, automated and by hand), related equipment cleaning and maintenance. |
| **Product category** | PC26 Paper and board treatment products<br>PC36 Water softeners. |
| **Article category** | AC8 Paper articles |
| **Main sector** | SU3 Industrial uses |
| **Sector of use** | SU6b Manufacture of pulp, paper and paper products |

*Environment*

| | |
|---|---|
| **Environmental release category** | ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article)<br>ERC8a Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)<br>ERC11a Widespread use of articles with low release (indoor) |

*Worker*

| | |
|---|---|
| **Process category** | PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions<br>PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition<br>PROC5 Mixing or blending in batch processes |

# Paper and board dye, finishing and impregnation products: including bleaches and other processing aids

## 2. Conditions of use affecting exposure (Industrial - Environment 1)

*Product characteristics*

| | |
|---|---|
| **Physical state** | Solid , or: Solid in solution |
| **Concentration details** | Concentration of substance in product: 100%<br>Organic salts. |

*Frequency and duration of use*

Continuous.

*Risk management measures*

| | |
|---|---|
| **Good practice** | Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. Carefully handle the substance to minimise releases. |

*Technical onsite conditions and measures to reduce or limit discharges to air, water and soil*

| | |
|---|---|
| **Water** | Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of the local water authority. Risk from environmental exposure is driven by marine water. |

*Conditions and measures related to external treatment of waste for disposal*

| | |
|---|---|
| **Waste treatment** | External treatment and disposal of waste should comply with applicable local and/or national regulations. Dispose of waste cans and containers according to local regulations. |

## 2. Conditions of use affecting exposure (Workers - Health 1)

*Product characteristics*

| | |
|---|---|
| **Physical state** | Solid , or: Solid in solution |
| **Concentration details** | Concentration of substance in product: 100%<br>Organic salts. |

*Amounts used*

Amount per use: 83 kg

*Frequency and duration of use*

Covers daily exposures up to 8 hours (unless stated differently).

*Human factors not influenced by risk management*

| | |
|---|---|
| **Potentially exposed body parts** | PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition Covers skin contact area up to 240 cm².<br>PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC5 Mixing or blending in batch processes Covers skin contact area up to 480 cm². |

*Other given operational conditions affecting workers exposure*

| | |
|---|---|
| **Setting** | Indoor/outdoor use. |

*Technical conditions and measures at process level (source) to prevent release*

# Paper and board dye, finishing and impregnation products: including bleaches and other processing aids

**Technical protective measures** Provide extract ventilation to points where emissions occur. Ensure the ventilation system is regularly maintained and tested.
Control any potential exposure using measures such as contained or enclosed systems, properly designed and maintained facilities and a good standard of general ventilation. Drain down systems and clear transfer lines prior to breaking containment. Drain down and flush equipment where possible prior to maintenance. Where there is potential for exposure: Ensure relevant staff are informed of the nature of exposure and aware of basic actions to minimise exposures; Ensure suitable personal protective equipment is available; Clear up spills and dispose of waste in accordance with regulatory requirements; monitor effectiveness of control measures; consider the need for health surveillance; identify and implement corrective actions.

***Organisational measures to prevent/limit releases, dispersion and exposure***

**Organisational measures** Assumes a good basic standard of occupational hygiene is implemented.

***Risk management measures***

Wear suitable working clothes.
Wear suitable gloves tested to EN374.
Use suitable eye protection.
Personal protective equipment for eye and face protection should comply with European Standard EN166.
Wear a respirator conforming to EN140 with Type A filter or better.

## 3. Exposure estimation (Environment 1)

**Assessment method** Used EUSES model.

Predicted exposures are not expected to exceed the applicable exposure limits (given in Section 8 of the SDS) when the operational conditions/risk management measures given in Section 2 are implemented.

## 3. Exposure estimation (Health 1)

**Assessment method** Used ECETOC TRA model.

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.

# Exposure scenario
# Bleaching agent

## Identification

| | |
|---|---|
| **Product name** | TETRASODIUM (1-HYDROXYETHYLIDENE)BISPHOSPHONATE |
| **REACH registration number** | 01-2119510382-52-XXXX |
| **CAS number** | 3794-83-0 |
| **EC number** | 223-267-7 |
| **Supplier** | Univar Solutions UK Ltd<br>Aquarius House<br>6 Mid Point Business Park<br>Bradford<br>BD3 7AY<br>+44 1274 267300<br>+44 1274 267306<br>SDS.EMEA@univarsolutions.com |

## 1. Title of exposure scenario

| | |
|---|---|
| **Main title** | Bleaching agent |
| **Process scope** | Covers the use as a component of cleaning products, including transfer from storage, pouring/unloading from drums or containers and exposures during mixing/diluting in the preparatory phase and cleaning activities (including spraying, brushing, dipping, wiping, automated and by hand), related equipment cleaning and maintenance. |
| **Product category** | PC20 Processing aids such as pH-regulators, flocculants, precipitants, neutralization agents<br>PC23 Leather treatment products<br>PC34 Textile dyes and impregnating products |
| **Article category** | AC5 Fabrics, textiles and apparel |
| **Main sector** | SU3 Industrial uses |
| **Sector of use** | SU5 Manufacture of textiles, leather, fur |

*Environment*

| | |
|---|---|
| **Environmental release category** | ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article) |

*Worker*

| | |
|---|---|
| **Process category** | PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions<br>PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities<br>PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities<br>PROC13 Treatment of articles by dipping and pouring. |

## 2. Conditions of use affecting exposure (Industrial - Environment 1)

# Bleaching agent

*Product characteristics*

**Physical state** Solid , or: Solid in solution

**Concentration details** Concentration of substance in product: 100%

Organic salts.

*Amounts used*

Annual site tonnage: 11 - 12 tonnes

*Frequency and duration of use*

Continuous.

*Risk management measures*

**Good practice** Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. Carefully handle the substance to minimise releases.

*Technical onsite conditions and measures to reduce or limit discharges to air, water and soil*

**Water** Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of the local water authority. Risk from environmental exposure is driven by marine water.

*Conditions and measures related to external treatment of waste for disposal*

**Waste treatment** External treatment and disposal of waste should comply with applicable local and/or national regulations. Dispose of waste cans and containers according to local regulations.

## 2. Conditions of use affecting exposure (Workers - Health 1)

*Product characteristics*

**Physical state** Solid , or: Solid in solution

**Concentration details** Concentration of substance in product: 100%

Organic salts.

*Amounts used*

Amount per use: 60 kg

*Frequency and duration of use*

Covers daily exposures up to 8 hours (unless stated differently).

*Human factors not influenced by risk management*

**Potentially exposed body parts** PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC13 Treatment of articles by dipping and pouring. Covers skin contact area up to 480 cm².
PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities Covers skin contact area up to 960 cm².

*Other given operational conditions affecting workers exposure*

**Setting** Indoor/outdoor use.

*Technical conditions and measures at process level (source) to prevent release*

# Bleaching agent

**Technical protective measures** Provide extract ventilation to points where emissions occur. Ensure the ventilation system is regularly maintained and tested.
Control any potential exposure using measures such as contained or enclosed systems, properly designed and maintained facilities and a good standard of general ventilation. Drain down systems and clear transfer lines prior to breaking containment. Drain down and flush equipment where possible prior to maintenance. Where there is potential for exposure: Ensure relevant staff are informed of the nature of exposure and aware of basic actions to minimise exposures; Ensure suitable personal protective equipment is available; Clear up spills and dispose of waste in accordance with regulatory requirements; monitor effectiveness of control measures; consider the need for health surveillance; identify and implement corrective actions.

***Organisational measures to prevent/limit releases, dispersion and exposure***

**Organisational measures** Assumes a good basic standard of occupational hygiene is implemented.

***Risk management measures***

Wear suitable working clothes.
Wear suitable gloves tested to EN374.
Use suitable eye protection.
Personal protective equipment for eye and face protection should comply with European Standard EN166.
Wear a respirator conforming to EN140 with Type A filter or better.

## 3. Exposure estimation (Environment 1)

**Assessment method** Used EUSES model.

Predicted exposures are not expected to exceed the applicable exposure limits (given in Section 8 of the SDS) when the operational conditions/risk management measures given in Section 2 are implemented.

## 3. Exposure estimation (Health 1)

**Assessment method** Used ECETOC TRA model.

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.

# Exposure scenario
# Antiscaling agent in closed or contained systems

## Identification

| | |
|---|---|
| **Product name** | TETRASODIUM (1-HYDROXYETHYLIDENE)BISPHOSPHONATE |
| **REACH registration number** | 01-2119510382-52-XXXX |
| **CAS number** | 3794-83-0 |
| **EC number** | 223-267-7 |
| **Supplier** | Univar Solutions UK Ltd<br>Aquarius House<br>6 Mid Point Business Park<br>Bradford<br>BD3 7AY<br>+44 1274 267300<br>+44 1274 267306<br>SDS.EMEA@univarsolutions.com |

## 1. Title of exposure scenario

| | |
|---|---|
| **Main title** | Antiscaling agent in closed or contained systems |
| **Process scope** | Covers the use as a component of cleaning products within closed or contained systems, including incidental exposures during transfer from storage, mixing/diluting in the preparatory phase and cleaning activities, related equipment cleaning and maintenance. |
| **Product category** | PC20 Processing aids such as pH-regulators, flocculants, precipitants, neutralization agents<br>PC36 Water softeners.<br>PC37 Water treatment chemicals. |
| **Main sector** | SU3 Industrial uses |
| **Sector of use** | SU23 Electricity, steam, gas, water supply and sewage treatment |

*Environment*

| | |
|---|---|
| **Environmental release category** | ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article) |

*Worker*

| | |
|---|---|
| **Process category** | PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions<br>PROC5 Mixing or blending in batch processes<br>PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities<br>PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities |

## 2. Conditions of use affecting exposure (Industrial - Environment 1)

*Product characteristics*

| | |
|---|---|
| **Physical state** | Solid , or: Solid in solution |

# Antiscaling agent in closed or contained systems

**Concentration details** Concentration of substance in product: 100%

Organic salts.

***Amounts used***

Annual site tonnage: 24 tonnes

***Frequency and duration of use***

Continuous.

***Risk management measures***

**Good practice** Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. Carefully handle the substance to minimise releases.

***Technical onsite conditions and measures to reduce or limit discharges to air, water and soil***

**Water** Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of the local water authority. Risk from environmental exposure is driven by marine water. Typical onsite wastewater treatment technology provides removal efficiency of 57%.

***Conditions and measures related to external treatment of waste for disposal***

**Waste treatment** External treatment and disposal of waste should comply with applicable local and/or national regulations. Dispose of waste cans and containers according to local regulations.

## 2. Conditions of use affecting exposure (Workers - Health 1)

***Product characteristics***

**Physical state** Solid , or: Solid in solution

**Concentration details** Concentration of substance in product: 100%

Organic salts.

***Amounts used***

Amount per use: 60 kg

***Frequency and duration of use***

Covers daily exposures up to 8 hours (unless stated differently).

***Human factors not influenced by risk management***

**Potentially exposed body parts** PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC13 Treatment of articles by dipping and pouring. Covers skin contact area up to 480 $cm^2$.
PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities Covers skin contact area up to 960 $cm^2$.

***Other given operational conditions affecting workers exposure***

**Setting** Indoor/outdoor use.

***Technical conditions and measures at process level (source) to prevent release***

# Antiscaling agent in closed or contained systems

**Technical protective measures** Provide extract ventilation to points where emissions occur. Ensure the ventilation system is regularly maintained and tested.
Control any potential exposure using measures such as contained or enclosed systems, properly designed and maintained facilities and a good standard of general ventilation. Drain down systems and clear transfer lines prior to breaking containment. Drain down and flush equipment where possible prior to maintenance. Where there is potential for exposure: Ensure relevant staff are informed of the nature of exposure and aware of basic actions to minimise exposures; Ensure suitable personal protective equipment is available; Clear up spills and dispose of waste in accordance with regulatory requirements; monitor effectiveness of control measures; consider the need for health surveillance; identify and implement corrective actions.

***Organisational measures to prevent/limit releases, dispersion and exposure***

**Organisational measures** Assumes a good basic standard of occupational hygiene is implemented.

***Risk management measures***

Wear suitable working clothes.
Wear suitable gloves tested to EN374.
Use suitable eye protection.
Personal protective equipment for eye and face protection should comply with European Standard EN166.
Wear a respirator conforming to EN140 with Type A filter or better.

## 3. Exposure estimation (Environment 1)

**Assessment method** Used EUSES model.

Predicted exposures are not expected to exceed the applicable exposure limits (given in Section 8 of the SDS) when the operational conditions/risk management measures given in Section 2 are implemented.

## 3. Exposure estimation (Health 1)

**Assessment method** Used ECETOC TRA model.

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.

# Exposure scenario
# Use in Fertilizers - Professional

## Identification

| | |
|---|---|
| **Product name** | TETRASODIUM (1-HYDROXYETHYLIDENE)BISPHOSPHONATE |
| **REACH registration number** | 01-2119510382-52-XXXX |
| **CAS number** | 3794-83-0 |
| **EC number** | 223-267-7 |
| **Supplier** | Univar Solutions UK Ltd<br>Aquarius House<br>6 Mid Point Business Park<br>Bradford<br>BD3 7AY<br>+44 1274 267300<br>+44 1274 267306<br>SDS.EMEA@univarsolutions.com |

## 1. Title of exposure scenario

| | |
|---|---|
| **Main title** | Use in Fertilizers - Professional |
| **Process scope** | Use as an agrochemical excipient for application by manual or machine spraying, smokes and fogging, including equipment clean-downs and disposal. |
| **Product category** | PC12 Lawn and garden preparations (- fertilizers). |
| **Main sector** | SU22 Professional uses |
| **Sector of use** | SU1 Agriculture, forestry, fishery |

***Environment***

| | |
|---|---|
| **Environmental release category** | ERC8d Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor) |

***Worker***

| | |
|---|---|
| **Process category** | PROC5 Mixing or blending in batch processes<br>PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities<br>PROC11 Non industrial spraying |

## 2. Conditions of use affecting exposure (Industrial - Environment 1)

***Product characteristics***

| | |
|---|---|
| **Physical state** | Solid , or: Solid in solution |
| **Concentration details** | Covers concentrations up to 100 %.<br><br>Organic salts. |

***Frequency and duration of use***

# Use in Fertilizers - Professional

Continuous.

*Risk management measures*

**Good practice** Use appropriate containment to avoid environmental contamination. Carefully handle the substance to minimise releases.

*Technical onsite conditions and measures to reduce or limit discharges to air, water and soil*

**Water** No wastewater treatment required. Risk from environmental exposure is driven by marine water.

*Conditions and measures related to external treatment of waste for disposal*

**Waste treatment** External treatment and disposal of waste should comply with applicable local and/or national regulations. Dispose of waste cans and containers according to local regulations.

## 2. Conditions of use affecting exposure (Workers - Health 1)

*Product characteristics*

**Physical state** Solid , or: Solid in solution

**Concentration details** Concentration of substance in product: 100% Unless otherwise stated.

Organic salts.

*Amounts used*

Amount per use: 13.7 kg

*Frequency and duration of use*

Covers daily exposures up to 8 hours (unless stated differently).

*Human factors not influenced by risk management*

**Potentially exposed body parts** PROC5 Mixing or blending in batch processes Covers skin contact area up to 480 cm².
PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities Covers skin contact area up to 960 cm².
PROC11 Non industrial spraying Covers skin contact area up to 1500 cm².

*Other given operational conditions affecting workers exposure*

**Setting** Indoor/outdoor use.

*Technical conditions and measures at process level (source) to prevent release*

**Technical protective measures** Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).

*Organisational measures to prevent/limit releases, dispersion and exposure*

**Organisational measures** Assumes a good basic standard of occupational hygiene is implemented. Ensure control measures are regularly inspected and maintained. Clean equipment and the work area every day. Only allow access to authorised persons.

*Risk management measures*

Wear suitable working clothes.
Wear suitable gloves tested to EN374.
Use suitable eye protection.
Personal protective equipment for eye and face protection should comply with European Standard EN166.
Wear a respirator conforming to EN140 with Type A filter or better.

## 3. Exposure estimation (Environment 1)

# Use in Fertilizers - Professional

| | |
|---|---|
| **Assessment method** | Used EUSES model.<br><br>Predicted exposures are not expected to exceed the applicable exposure limits (given in Section 8 of the SDS) when the operational conditions/risk management measures given in Section 2 are implemented. |

## 3. Exposure estimation (Health 1)

| | |
|---|---|
| **Assessment method** | Used ECETOC TRA model.<br><br>Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. |

# Exposure scenario
# Use in Agrochemicals - Consumer

## Identification

| | |
|---|---|
| **Product name** | TETRASODIUM (1-HYDROXYETHYLIDENE)BISPHOSPHONATE |
| **REACH registration number** | 01-2119510382-52-XXXX |
| **CAS number** | 3794-83-0 |
| **EC number** | 223-267-7 |
| **Supplier** | Univar Solutions UK Ltd<br>Aquarius House<br>6 Mid Point Business Park<br>Bradford<br>BD3 7AY<br>+44 1274 267300<br>+44 1274 267306<br>SDS.EMEA@univarsolutions.com |

## 1. Title of exposure scenario

| | |
|---|---|
| **Main title** | Use in Agrochemicals - Consumer |
| **Process scope** | Covers the consumer use in agrochemicals in liquid and solid forms. |
| **Product category** | PC0 Other products.<br>PC12 Lawn and garden preparations (- fertilizers). |
| **Main sector** | SU21 Consumer uses |

***Environment***

| | |
|---|---|
| **Environmental release category** | ERC8d Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor) |

## 2. Conditions of use affecting exposure (Non-industrial - Environment 1)

***Product characteristics***

| | |
|---|---|
| **Physical state** | Solid , or: Solid in solution |
| **Concentration details** | Covers concentrations up to 100 %.<br>Organic salts. |

***Frequency and duration of use***

Continuous use/release.

***Environmental factors not influenced by risk management measures***

| | |
|---|---|
| **Other factors** | Domestic sewage treatment is not assumed. |

***Risk management measures***

# Use in Agrochemicals - Consumer

| | |
|---|---|
| **Good practice** | Common practices vary across sites, thus conservative process release estimates used. Carefully handle the substance to minimise releases. |
| **Technical measures** | Prevent environmental discharge consistent with regulatory requirements. Prevent discharge of undissolved substance to or recover from onsite waste water. |
| **STP type** | Municipal STP. |

## 2. Conditions of use affecting exposure (Non-industrial - Health 1)

*Product characteristics*

**Physical state**

Solid , or: Solid in solution

Organic salts.

*Amounts used*

Not applicable.

*Other given operational conditions affecting Non-industrial exposure*

**Setting**

Indoor/outdoor use.

*Other given operational conditions affecting Non-industrial exposure*

Use suitable eye protection and gloves. Wear suitable working clothes. Wear a suitable dust mask.

## 3. Exposure estimation (Environment 1)

**Assessment method**

Used EUSES model.

Predicted exposures are not expected to exceed the applicable exposure limits (given in Section 8 of the SDS) when the operational conditions/risk management measures given in Section 2 are implemented.

## 3. Exposure estimation (Health 1)

**Assessment method**

Used ECETOC TRA model.

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.

# Exposure scenario
# Manufacture of ceramics and glass

## Identification

| | |
|---|---|
| **Product name** | TETRASODIUM (1-HYDROXYETHYLIDENE)BISPHOSPHONATE |
| **REACH registration number** | 01-2119510382-52-XXXX |
| **CAS number** | 3794-83-0 |
| **EC number** | 223-267-7 |
| **Supplier** | Univar Solutions UK Ltd<br>Aquarius House<br>6 Mid Point Business Park<br>Bradford<br>BD3 7AY<br>+44 1274 267300<br>+44 1274 267306<br>SDS.EMEA@univarsolutions.com |

## 1. Title of exposure scenario

| | |
|---|---|
| **Main title** | Manufacture of ceramics and glass |
| **Product category** | PC20 Processing aids such as pH-regulators, flocculants, precipitants, neutralization agents |
| **Main sector** | SU3 Industrial uses |
| **Sector of use** | SU10 Formulation [mixing] of preparations and/or re-packaging |

***Environment***

| | |
|---|---|
| **Environmental release category** | ERC2 Formulation into mixture |

***Worker***

| | |
|---|---|
| **Process category** | PROC5 Mixing or blending in batch processes<br>PROC26 Handling of solid inorganic substances at ambient temperature |

## 2. Conditions of use affecting exposure (Industrial - Environment 1)

***Product characteristics***

| | |
|---|---|
| **Physical state** | Solid , or: Solid in solution |
| **Concentration details** | Concentration of substance in product: 100%<br>Organic salts. |

***Amounts used***

Annual amount per site: 75 kg

***Frequency and duration of use***

Continuous.

# Manufacture of ceramics and glass

*Risk management measures*

**Good practice** Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. Carefully handle the substance to minimise releases.

*Technical onsite conditions and measures to reduce or limit discharges to air, water and soil*

**Water** Onsite wastewater treatment required. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of the local water authority.

*Conditions and measures related to external treatment of waste for disposal*

**Sludge treatment** Sludge is disposed of or recovered.

**Waste treatment** External treatment and disposal of waste should comply with applicable local and/or national regulations. Dispose of waste cans and containers according to local regulations.

## 2. Conditions of use affecting exposure (Workers - Health 1)

*Product characteristics*

**Physical state** Solid , or: Solid in solution

**Concentration details** Concentration of substance in product: 100%

Organic salts.

*Amounts used*

Amount per use: 0.24 kg

*Frequency and duration of use*

Covers daily exposures up to 8 hours (unless stated differently).

*Human factors not influenced by risk management*

**Potentially exposed body parts** PROC5 Mixing or blending in batch processes Covers skin contact area up to 480 cm². PROC26 Handling of solid inorganic substances at ambient temperature Covers skin contact area up to 1980 cm².

*Other given operational conditions affecting workers exposure*

**Setting** Indoor/outdoor use.

*Technical conditions and measures at process level (source) to prevent release*

**Technical protective measures** Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Ensure the ventilation system is regularly maintained and tested.

*Organisational measures to prevent/limit releases, dispersion and exposure*

**Organisational measures** Assumes a good basic standard of occupational hygiene is implemented.

*Risk management measures*

Wear suitable working clothes.
Wear suitable gloves tested to EN374.
Use suitable eye protection.
Personal protective equipment for eye and face protection should comply with European Standard EN166.
Wear a respirator conforming to EN140 with Type A filter or better.

## 3. Exposure estimation (Environment 1)

**Assessment method** Used EUSES model.

# Manufacture of ceramics and glass

Predicted exposures are not expected to exceed the applicable exposure limits (given in Section 8 of the SDS) when the operational conditions/risk management measures given in Section 2 are implemented.

## 3. Exposure estimation (Health 1)

**Assessment method**

Used ECETOC TRA model.

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.