

SAFETY DATA SHEET

Version: 4.0 Date: 5th February 2021



ACCORDING TO EC-REGULATIONS 1907/2006 (REACH), 1272/2008 (CLP) & 2015/830

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

1.1 Product identifier

Product name SODIUM CARBONATE
Substance name Sodium carbonate
Alternative names Disodium carbonate, soda ash
Chemical Formula Na_2CO_3
CAS No. 497-19-8
EINECS No. 207-838-8
REACH Registration No. 01-2119485498-19-0018

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

Identified Use(s) Glass production; Intermediate in chemicals production; Water treatment chemicals; Washing and cleaning products; Other industrial, professional and consumer uses.

| No. | Exposure Scenario | Page: |
|-----|--|-------|
| 1 | Manufacturing of sodium carbonate | 8 |
| 2 | Glass production | 11 |
| 3 | Formulation | 14 |
| 4 | Other industrial and professional uses | 17 |
| 5 | Consumer use | 24 |

Uses advised against None

1.3 Details of the supplier of the safety data sheet

Company Identification Tata Chemicals Europe Ltd
Natrium House
Winnington Lane
Northwich
Cheshire
CW8 4GW

Telephone +44 (0)1606 724000
E-mail (competent person) reach@tatachemicals.com
Website <https://www.tatachemicalseurope.com/>

Only representative

Company Identification Yordas Group GmbH
Company Address Äußere Nürnberger Straße 62, 91301 Forchheim, Germany
Telephone +49 (0)9191 9504233
E-mail (competent person) info@yordasgroup.com

1.4 Emergency telephone number

Emergency Phone No. +44 (0) 1606 724000 24 hours
Languages spoken English

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

2.1.1 Regulation (EC) No. 1272/2008 (CLP) Eye Irrit. 2; H319

2.2 Label elements According to Regulation (EC) No. 1272/2008 (CLP)

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Product Name SODIUM CARBONATE
Substance name Sodium carbonate
CAS No. 497-19-8
EINECS No. 207-838-8

Hazard Pictogram(s)



Signal Word(s) WARNING

Hazard Statement(s) H319: Causes serious eye irritation.

Precautionary Statement(s) P264: Wash hands and exposed skin thoroughly after handling.
P280: Wear protective gloves/protective clothing/eye protection/face protection.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313: If eye irritation persists: Get medical advice/attention.

Supplemental information None assigned.

2.3 Other hazards None known

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

| SUBSTANCE | CAS No. | EC No. | REACH Registration No. | %W/W |
|------------------|----------|-----------|------------------------|------|
| Sodium carbonate | 497-19-8 | 207-838-8 | 01-2119485498-19-0018 | >90 |

Hazardous impurities

No other components or impurities which will influence the classification of the product

SECTION 4: FIRST AID MEASURES



4.1 Description of first aid measures

Self-protection of the first aider Use personal protective equipment as required. Wear appropriate personal protective equipment, avoid direct contact. Ensure adequate ventilation. Avoid contact with eyes. Contaminated clothing should be laundered before reuse. Avoid breathing vapours.

Inhalation IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.

Skin contact IF ON SKIN: Gently wash with plenty of soap and water. If irritation develops and persists, get medical attention.

Eye contact IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical advice/attention.

Ingestion IF SWALLOWED: Rinse mouth. Give plenty of water to drink. Do NOT induce vomiting. If you feel unwell, seek medical advice (show the label where possible).

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- 4.2 **Most important symptoms and effects, both acute and delayed** Causes serious eye irritation.
- 4.3 **Indication of any immediate medical attention and special treatment needed** Treat symptomatically.

SECTION 5: FIREFIGHTING MEASURES

- 5.1 **Extinguishing media**
Suitable extinguishing media As appropriate for surrounding fire.
Unsuitable extinguishing media Do not use water jet. Direct water jet may spread the fire.
- 5.2 **Special hazards arising from the substance or mixture** Not flammable.
- 5.3 **Advice for firefighters** Fight fire with normal precautions from a reasonable distance. Fire fighters should wear complete protective clothing including self-contained breathing apparatus. Keep containers cool by spraying with water if exposed to fire. Avoid run off to waterways and sewers.

SECTION 6: ACCIDENTAL RELEASE MEASURES

- 6.1 **Personal precautions, protective equipment and emergency procedures** No action should be taken involving personal risk. Wear appropriate personal protective equipment, avoid direct contact. Ensure adequate ventilation. Avoid breathing dust. Remove contaminated clothing and wash all affected areas with plenty of water. Avoid dust generation.
- 6.2 **Environmental precautions** Avoid release to the environment.
- 6.3 **Methods and material for containment and cleaning up** Damp down to avoid dust generation. Use vacuum cleaner to collect spilt material. Recover the product where possible. Ventilate the area and wash spill site after material pick-up is complete. Transfer to a container for disposal or recovery.
- 6.4 **Reference to other sections** See Section: 8,13

SECTION 7: HANDLING AND STORAGE

- 7.1 **Precautions for safe handling** Ensure adequate ventilation. Use personal protective equipment as required. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. Wash hands before breaks and after work. Remove contaminated clothing and wash clothing before reuse.
- 7.2 **Conditions for safe storage, including any incompatibilities** Keep container tightly closed. Store in a cool/low-temperature, well-ventilated (dry) place away from heat and ignition sources. Control dust formation. Keep in a cool, well ventilated place.
- Storage temperature
Suitable material: Polyethylene
Unsuitable material: Material moisture permeable
- Incompatible materials
Finely divided aluminium
- 7.3 **Specific end use(s)** See Section: 1.2

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

- 8.1 **Control parameters**
- 8.1.1 **Occupational exposure limits** The UK HSE (EH40) recommends the following limits for dusts: 10 mg/m³ (8hr TWA) total inhalable dust; 4 mg/m³ (8hr TWA) total respirable dust.
- 8.1.2 **Biological limit value** Not established
- 8.1.3 **PNECs and DNELs**

| Sodium carbonate Derived No Effect Level | Oral | Inhalation | Dermal |
|--|------|----------------------|--------|
| Worker - Long Term - Systemic effects | - | 10 mg/m ³ | - |
| Consumer - Long Term - Systemic effects | - | 10 mg/m ³ | - |

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The lowest L(E)C50 value is > 100 mg/l (48-h EC50 is 200 mg/l in daphnids (Ceriodaphnia sp)). Therefore sodium carbonate need not be classified according to Directive 67/548/EEC and EU Classification, Labelling and Packaging of Substances and Mixtures (CLP) Regulation (EC) No. 1272/2008

8.2 Exposure controls

8.2.1 Appropriate engineering controls

Ensure adequate ventilation. Special ventilation should be used to convey finely divided metallic dust generated by grinding, sawing or polishing operations, in order to eliminate explosion hazards.

8.2.2 Individual protection measures, such as personal protective equipment

Keep good industrial hygiene. Wear appropriate personal protective equipment, avoid direct contact. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke at the work place. Avoid breathing dust.

Protective clothing should be selected specifically for the working place, depending on concentration and quantity of the hazardous substances handled. The resistance of the protective clothing to chemicals should be ascertained with the respective supplier.

Eye/ face protection



Wear eye protection with side protection (EN166). Eyewash bottles should be available.

Skin protection



Hand protection: Wear impervious gloves (EN374). Gloves should be changed regularly to avoid permeation problems. Breakthrough time of the glove material: refer to the information provided by the gloves' producer. Protective index 6, corresponding > 480 minutes of permeation time according to EN 374. Recommended: Butyl rubber, Neoprene, Nitrile (Minimum thickness 0.5mm)

Body protection: Wear dust-resistant protective clothing.

Respiratory protection



Not normally required. Wear suitable respiratory protective equipment if processing involves working in areas where dusts or vapours are likely to be evolved. In case of inadequate ventilation wear respiratory protection. Recommended: EN143 Type A-P2.

Thermal hazards

Not applicable.

8.2.3 Environmental exposure controls

Avoid release to the environment.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

| | |
|--|--|
| Appearance | White powder |
| Odour | Odourless |
| Odour threshold | Not applicable |
| pH | >11 (saturated solution, study result, OECD 105) |
| Melting point/freezing point | 851°C |
| Initial boiling point and boiling range | Not applicable >300°C (Melting point) |
| Flash point | Not applicable (inorganic substance) |
| Evaporation rate | Not applicable >300°C (Melting point) |
| Flammability (solid, gas) | Not flammable (study result, EU Method A.10) |
| Upper/lower flammability or explosive limits | Not flammable |
| Vapour pressure | Not applicable (inorganic substance, vapour pressure negligible) |
| Vapour density | Not applicable |
| Relative density | 2.52 @ 20°C (study result, EU Method A.3) |

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| | |
|--|--|
| Solubility(ies) | In water: 212.5 g/l @ 20°C (study result OECD 105) |
| Partition coefficient: n-octanol/water | Not applicable |
| Auto-ignition temperature | Not applicable |
| Decomposition temperature | Not flammable |
| Viscosity | Not relevant (solid) |
| Explosive properties | Not explosive |
| Oxidising properties | Not oxidising |

9.2 Other information None known

SECTION 10: STABILITY AND REACTIVITY

| | |
|---|---|
| 10.1 Reactivity | Decomposes by reaction with strong acids. |
| 10.2 Chemical stability | Stable under normal conditions. |
| 10.3 Possibility of hazardous reactions | None anticipated. |
| 10.4 Conditions to avoid | Avoid contact with acids. Exposure to moisture. |
| 10.5 Incompatible materials | Finely divided aluminium. |
| 10.6 Hazardous decomposition products | Contact with acid will evolve CO ₂ . |

SECTION 11: TOXICOLOGICAL INFORMATION

| | |
|---|---|
| 11.1 Information on toxicological effects | |
| Acute Toxicity - Ingestion | Based upon the available data, the classification criteria are not met. |
| Acute Toxicity - Inhalation | Based upon the available data, the classification criteria are not met. |
| Acute Toxicity - Skin contact | Based upon the available data, the classification criteria are not met. |
| Skin corrosion/irritation | Based upon the available data, the classification criteria are not met. |
| Serious eye damage/irritation | Eye Irrit. 2; H319: Causes serious eye irritation. EU Harmonised Classification Irritating to eyes. (rabbit) (Rinehart, WE, 1978) |
| Respiratory or skin sensitisation | Based upon the available data, the classification criteria are not met. |
| Germ cell mutagenicity | Based upon the available data, the classification criteria are not met. |
| Carcinogenicity | Based upon the available data, the classification criteria are not met. |
| Reproductive toxicity | Based upon the available data, the classification criteria are not met. |
| STOT - single exposure | Based upon the available data, the classification criteria are not met. |
| STOT - repeated exposure | Based upon the available data, the classification criteria are not met. |
| Aspiration hazard | Based upon the available data, the classification criteria are not met. |
| 11.2 Other information | None known. |

SECTION 12: ECOLOGICAL INFORMATION

| | |
|---|--|
| 12.1 Toxicity | Based upon the available data, the classification criteria are not met. Estimated LC50 (Substance): >100 mg/l. |
| 12.2 Persistence and degradability | Not applicable for inorganic substances. |
| 12.3 Bioaccumulative potential | Not applicable for inorganic substances. |
| 12.4 Mobility in soil | Not applicable for inorganic substances. |
| 12.5 Results of PBT and vPvB assessment | According to Annex XIII of the REACH Regulation 1907/2006/EC inorganic substances do not need to be subjected to a PBT assessment. |
| 12.6 Other adverse effects | None known. |

SECTION 13: DISPOSAL CONSIDERATIONS

| | |
|------------------------------|---|
| 13.1 Waste treatment methods | Dispose of contents in accordance with local, state or national legislation. Do not allow to enter drains, sewers or watercourses. Recycle packaging. |
| 13.2 Additional information | Avoid release to the environment. Dispose of empty containers and wastes safely. |

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SECTION 14: TRANSPORT INFORMATION

Not classified according to the United Nations 'Recommendations on the Transport of Dangerous Goods'.

| | ADR/RID | IMDG | IATA/ICAO |
|---|---------------------------|---------------------------------------|---------------------------|
| 14.1 UN number | None assigned. | None assigned. | None assigned. |
| 14.2 UN proper shipping name | None assigned. | None assigned. | None assigned. |
| 14.3 Transport hazard class(es) | None assigned. | None assigned. | None assigned. |
| 14.4 Packing group | None assigned. | None assigned. | None assigned. |
| 14.5 Environmental hazards | Not classified | Not classified as a Marine Pollutant. | Not classified |
| 14.6 Special precautions for user | See Section: 2 | | |
| 14.7 Transport in bulk according to Annex II of Marpol and the IBC Code | No information available. | No information available. | No information available. |

SECTION 15: REGULATORY INFORMATION

| | |
|---|--|
| 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture | |
| 15.1.1 EU regulations | Authorisations and/or restrictions on use Not restricted |
| 15.1.2 National regulations | Germany Water hazard class (WGK): 1 TSCA Inventory Listed |
| 15.2 Chemical Safety Assessment | A REACH chemical safety assessment has been carried out. |

SECTION 16: OTHER INFORMATION

The following sections contain revisions or new statements: Updated substance / mixture classification. Updated version and date. New format has been issued, all sections have been updated to include new information. Review SDS with care.

References:

Existing Safety Data Sheet (SDS), Chemical Safety Report,
Harmonised Classification and existing ECHA registration for Sodium carbonate (CAS No. 497-19-8).

Literature References:

1. Rinehart, WE, 1978. Rabbit Eye Irritation Study. Toxicological Resources Unit, Bio/dynamics Inc. Taken from OECD SIDS UNEP for Sodium Carbonate.

EU Classification: This Safety Data Sheet was prepared in accordance with EC Regulation (EC) 1907/2006 (REACH), 1272/2008 (CLP) & 2015/830.

Legend

| | |
|-------|--|
| ADR | ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road |
| CLP | Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures |
| DNEL | Derived no effect level |
| EU | European Union |
| IATA | IATA: International Air Transport Association |
| ICAO | ICAO: International Civil Aviation Organization |
| IMDG | IMDG: International Maritime Dangerous Goods |
| LC50 | Lethal concentration at which 50% of the population is killed |
| LD50 | Lethal dose at which 50% of the population is killed |
| LTEL | Long term exposure limit |
| PBT | PBT: Persistent, Bioaccumulative and Toxic |
| PNEC | Predicted No Effect Concentration |
| REACH | Registration, Evaluation, Authorisation and Restriction of Chemicals |
| RID | RID: Regulations concerning the international railway transport of dangerous goods |
| STEL | Short term exposure limit |

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vPvB vPvB: very Persistent and very Bioaccumulative
WGK Wassergefährdungsklasse (Germany) / Water hazard class

Hazard classification / Classification code:

Eye Irrit. 2; Eye Irritation, Category 2

Hazard Statement(s)

H319: Causes serious eye irritation.

Training advice: Consideration should be given to the work procedures involved and the potential extent of exposure as they may determine whether a higher level of protection is required.

Disclaimers

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Annex to the extended Safety Data Sheet (eSDS)

See below -

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Exposure Scenario for communication:
ES 1: Manufacturing of sodium carbonate

0. General information

| | |
|---------------|------------|
| ES identifier | ES 1 |
| Version | 01 |
| Revision date | 28.10.2010 |
| EC # | 207-838-8 |
| CAS # | 497-19-8 |

1. List of use descriptors

Manufacturing of sodium carbonate

Market sector: SU 3 (Industrial uses)

Sector of uses SU: SU 8 (SU8 Manufacture of bulk, large scale chemicals (including petroleum products))

Environment: (Environmental Release Categories (ERC)) Manufacture of substances

ERC 1

Worker (Process category [PROC] - Phrase)

Use in closed process, no likelihood of exposure

PROC 1

Use in closed, continuous process with occasional controlled exposure

PROC 2

Use in closed batch process (synthesis or formulation)

PROC 3

Use in batch and other process (synthesis) where opportunity for exposure arises

PROC 4

Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities

PROC 8a

Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities

PROC 8b

Transfer of substance or preparation into small containers (dedicated filling line, including weighing)

PROC 9

Potentially closed processing operations with minerals/metals at elevated temperature; industrial setting

PROC 22

Processes, tasks, activities covered

Manufacturing, maintenance, loading, packaging, sampling and monitoring.

2. Conditions of use affecting exposure

2.0 Product characteristics

Physical form of product

Solid

Volatility

Not relevant

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| | |
|---|--|
| Level of dustiness | Medium (PROCs 1, 2, 3, 4, 8a, 8b, 9) Low (PROC 22) |
| 2.1. Control of environmental exposure: | |
| Manufacture of substances – ERC 1 | |
| Amounts used | |
| Annual site tonnage (tons/year): up to 600 000. | |
| Frequency and duration of use | |
| Continuous | |
| Other given operational conditions affecting environmental exposure | |
| Not applicable. | |
| Technical and organisational conditions and measures | |
| See section 8 of Safety Data Sheet | |
| Conditions and measures related to municipal sewage treatment plant | |
| Wastewater streams from sodium carbonate production sites contain inorganic substances and are therefore not treated in sewage treatment plants | |
| Conditions and measures related to external treatment of waste for disposal | |
| In Chapter 2.3.5 of the Reference Document on Best Available Techniques for the Manufacture of Large Volume Inorganic Chemicals - Solids and Others Industry (EC, 2007) two types of solid waste, generated during the manufacturing of sodium carbonate, are discussed. Both types of solid waste originate from raw materials and the concentration of sodium carbonate in the solid waste is negligible. For this reason specific waste related measures are not needed. | |
| Additional good practice advice beyond the REACH CSR (Chemical Safety Report) | |
| See sections 6 and 13 of Safety Data Sheet | |
| 2.2. Control of worker exposure | |
| Valid for PROCs 1, 2, 3, 4, 8a, 8b, 9, 22. | |
| Amount used, frequency and duration of use/exposure | |
| Amounts used | Not relevant Not considered to influence the exposure as such for this scenario |
| Frequency and duration of use | Daily use 8h/day |
| Technical and organisational conditions and measures | |
| See section 8 of Safety Data Sheet Ensure operatives are trained to minimise exposures. | |
| Additional good practice advice beyond the REACH CSR (Chemical Safety Report) | |
| See sections 7 and 8 of Safety Data Sheet | |
| 3. Exposure estimation and reference to its source | |
| 3.1 Environment exposure estimation and reference to its source | |

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The table below gives the summary of the environment exposure estimation made in the Chemical Safety Report, referring to Document on Best Available Techniques for the Manufacture of Large Volume Inorganic Chemicals - Solids and Others Industry.

| Compartment | Measured release (kg/d) | Explanation / source of measured data |
|--------------------|-------------------------|--|
| Aquatic | Negligible | Reference Document on Best Available Techniques (EC, 2007) |
| Air (direct) | 2.2 - 118 | |
| Soil (direct only) | Negligible | Reference Document on Best Available Techniques (EC, 2007) |

3.2 Workers exposure estimation and reference to its source

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

Production of sodium carbonate: long-term exposure concentrations to workers

| Route of Exposure | Exposure concentrations (mg/m ³) | Explanation / source of measured data (Characteristics, Duration, Frequency, OC and RMM described above) |
|-------------------------------|--|---|
| Modelled exposure data | | |
| Dermal exposure | Not relevant | No assessment for dermal exposure because of no local skin effects and no systemic availability after dermal contact. |
| Inhalation exposure | 0.01 | ECETOC TRA V2. PROC 1 |
| | 0.5 | ECETOC TRA V2. PROC 2 |
| | 1 | ECETOC TRA V2. PROC 3 |
| | 5 | ECETOC TRA V2. PROC 4 |
| | 5 | ECETOC TRA V2. PROC 8a |
| | 5 | ECETOC TRA V2. PROC 8b |
| | 5 | ECETOC TRA V2. PROC 9 |
| | 1 | ECETOC TRA V2. PROC 22 |
| Measured exposure data | | |
| Inhalation exposure | 7.9 | An extensive set (in total: 698 observations) of worker exposure data from 4 sites that manufacture sodium carbonate. Measurements are representative for a workday of 8 hours. |

4. Guidance to DU to evaluate whether he works inside the boundaries set by the ES

4.1 Environment.

Not applicable: this scenario does not concern DU.

4.2 Health.

Not applicable: this scenario does not concern DU.

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Substance: Sodium Carbonate ; EC : 207-838-8 ; CAS : 497-19-8

Exposure Scenario for communication:
ES 2: Glass production

0. General information

| | |
|---------------|------------|
| ES identifier | ES 2 |
| Version | 01 |
| Revision date | 28.10.2010 |
| EC # | 207-838-8 |
| CAS # | 497-19-8 |

1. List of use descriptors

Glass production

Market sector: SU 3 (Industrial uses)
Sector of uses SU: SU 8 (Industrial uses)

Environment: (Environmental Release Categories (ERC) Industrial use resulting in manufacture of another substance (use of intermediates) ERC 6a

Worker (Process category [PROC] - Phrase)

| | |
|--|---------|
| Use in closed process, no likelihood of exposure | PROC 1 |
| Use in closed, continuous process with occasional controlled exposure | PROC 2 |
| Use in closed batch process (synthesis or formulation) | PROC 3 |
| Use in batch and other process (synthesis) where opportunity for exposure arises | PROC 4 |
| Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities | PROC 8a |
| Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities | PROC 8b |
| Potentially closed processing operations with minerals/metals at elevated temperature; industrial setting | PROC 22 |
| Open processing and transfer operations with minerals/metals at elevated temperature | PROC 23 |
| Handling of solid inorganic substances at ambient temperature | PROC 26 |

Processes, tasks, activities covered

Manufacturing, maintenance, loading, packaging, sampling and monitoring.

2. Conditions of use affecting exposure

2.0 Product characteristics

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| | |
|---|--|
| Physical form of product | Solid |
| Volatility | Not relevant |
| Level of dustiness | Medium (PROCs 1, 2, 3, 4, 8a, 8b, 26) High (PROCs 22 and 23) |
| Concentration of substance in preparation/mixture or article | |
| For PROCs 1, 2, 3, 4, 8a, 8b and 26 the neat substance is taken into account, because the neat substance is transferred to the process. Percentage of 5-25% sodium carbonate in the mixture during the melting process is assumed. | |
| 2.1. Control of environmental exposure: | |
| Use as an intermediate: Industrial use resulting in manufacture of another substance (use of intermediates). | |
| Amounts used | |
| Up to 200 000 tons/year. | |
| Frequency and duration of use | |
| Continuous | |
| Other given operational conditions affecting environmental exposure | |
| The impact of glass manufacturing on the environment has been described extensively in the Reference Document on Best Available Techniques in the Glass Manufacturing Industry (EC, 2001). The document was established in the context of the EU Directive on Integrated Pollution Prevention and Control (Directive 96/61/EC). | |
| Technical and organisational conditions and measures | |
| See section 8 of Safety Data Sheet In case of dust formation, use filter to reduce atmospheric emissions. | |
| Conditions and measures related to municipal sewage treatment plant | |
| Wastewater streams of the glass industry do not contain sodium carbonate as it is stored in covered silos and not linked to internal sewage systems. For this reason an emission assessment for the sewage treatment plant is not needed for the industrial end use of sodium carbonate in the glass industry. | |
| Conditions and measures related to external treatment of waste for disposal | |
| No specific measures identified. | |
| Additional good practice advice beyond the REACH CSR (Chemical Safety Report) | |
| See sections 6 and 13 of Safety Data Sheet | |
| 2.2. Control of worker exposure | |
| Valid for PROCs 1, 2, 3, 4, 8a, 8b, 9, 22, 26. | |
| Amount used, frequency and duration of use/exposure | |
| Amounts used | Not relevant Not considered to influence the exposure as such for this scenario |
| Frequency and duration of use | Daily use 8h/day |
| Technical and organisational conditions and measures | |
| See section 8 of Safety Data Sheet | |
| Additional good practice advice beyond the REACH CSR (Chemical Safety Report) | |

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ACCORDING TO EC-REGULATIONS 1907/2006 (REACH), 1272/2008 (CLP) & 2015/830

See sections 7 and 8 of Safety Data Sheet

3. Exposure estimation and reference to its source

3.1 Environment exposure estimation and reference to its source

The table below gives the summary of the environment exposure estimation made in the Chemical Safety Report, referring to Document on Best Available Techniques in the Glass Manufacturing Industry (EC, 2001).

| Compartment | Measured release (kg/d) | Explanation / source of measured data |
|--------------------|-------------------------|--|
| Aquatic | Negligible | Reference Document on Best Available Techniques (EC, 2001) |
| Air (direct) | Negligible | Reference Document on Best Available Techniques (EC, 2001) |
| Soil (direct only) | Negligible | Reference Document on Best Available Techniques (EC, 2001) |

3.2 Workers exposure estimation and reference to its source

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

Glass production: long-term exposure concentrations to workers

| Route of Exposure | Exposure concentrations (mg/m ³) | Explanation / source of measured data (Characteristics, Duration, Frequency, OC and RMM described above) |
|---------------------|--|---|
| Dermal exposure | Not relevant | No assessment for dermal exposure because of no local skin effects and no systemic availability after dermal contact. |
| Inhalation exposure | 0.01 | ECETOC TRA V2. PROC 1 |
| | 0.5 | ECETOC TRA V2. PROC 2 |
| | 1 | ECETOC TRA V2. PROC 3 |
| | 5 | ECETOC TRA V2. PROC 4 |
| | 5 | ECETOC TRA V2. PROC 8a |
| | 5 | ECETOC TRA V2. PROC 8b |
| | 1 | ECETOC TRA V2. PROC 22a |
| | 1 | ECETOC TRA V2. PROC 23a |

PROC26 is not foreseen in ECETOC TRA but it involves activities which are described by PROC 8a and 8b. Therefore the calculation with PROC 8a and 8b covers PROC 26.

4. Guidance to DU to evaluate whether he works inside the boundaries set by the ES

4.1 Environment.

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

4.2 Health.

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

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ACCORDING TO EC-REGULATIONS 1907/2006 (REACH), 1272/2008 (CLP) & 2015/830

Substance: Sodium Carbonate ; EC : 207-838-8 ; CAS : 497-19-8

Exposure Scenario for communication:
ES 3: Formulation

0. General information

| | |
|---------------|------------|
| ES identifier | ES 3 |
| Version | 01 |
| Revision date | 28.10.2010 |
| EC # | 207-838-8 |
| CAS # | 497-19-8 |

1. List of use descriptors

Formulation

Market sector: SU 3 (Industrial uses)
Sector of uses SU:10 (Formulation [mixing] of preparations and/or re-packaging (excluding alloys))

Environment: (Environmental Release Categories (ERC) Formulation of preparations) ERC 2

Worker (Process category [PROC] - Phrase)

| | |
|--|---------|
| Use in closed process, no likelihood of exposure | PROC 1 |
| Use in closed, continuous process with occasional controlled exposure | PROC 2 |
| Use in closed batch process (synthesis or formulation) | PROC 3 |
| Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact) | PROC 5 |
| Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities | PROC 8a |
| Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities | PROC 8b |
| Transfer of substance or preparation into small containers (dedicated filling line, including weighing) | PROC 9 |
| Production of preparations or articles by tableting, compression, extrusion, pelletisation | PROC 14 |
| Use as laboratory reagent | PROC 15 |

Processes, tasks, activities covered

Storage, materials transfers, mixing, maintenance, sampling and associated laboratory activities.

2. Conditions of use affecting exposure

2.0 Product characteristics

| | |
|--------------------------|--------------|
| Physical form of product | Solid |
| Volatility | Not relevant |

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| | |
|---|--|
| Level of dustiness | Medium |
| Concentration of substance in preparation/mixture or article | |
| Not relevant: for exposure estimation the neat substance is taken into account, because the neat substance is added to the formulation process. | |
| 2.1. Control of environmental exposure: | |
| Formulation of preparations – ERC 2 SPERC (AISE, 2010E) are also used (http://www.aise.eu/reach/exposureass_sub4.htm). | |
| Amounts used | |
| Up to 5 000 tonnes/year | |
| Frequency and duration of use | |
| Continuous | |
| Other given operational conditions affecting environmental exposure | |
| See sections 8 and 13 of Safety Data Sheet | |
| Technical and organisational conditions and measures | |
| In case of dust formation, use filter to reduce atmospheric emissions. | |
| Conditions and measures related to municipal sewage treatment plant | |
| Control the pH of the liquid effluent if the effluent is sent to STP. | |
| Conditions and measures related to external treatment of waste for disposal | |
| No specific measures identified. | |
| Additional good practice advice beyond the REACH CSR (Chemical Safety Report) | |
| See sections 6 and 13 of Safety Data Sheet | |
| 2.2. Control of worker exposure | |
| Valid for PROCs 1, 2, 3, 5, 4, 8a, 8b, 9, 14, 15. | |
| Amount used (or contained in articles), frequency and duration of use/exposure | |
| Amounts used | Not relevant Not considered to influence the exposure as such for this scenario |
| Frequency and duration of use | Daily use 8h/day |
| Technical and organisational conditions and measures | |
| See section 8 of Safety Data Sheet | |
| Additional good practice advice beyond the REACH CSR (Chemical Safety Report) | |
| See sections 7 and 8 of Safety Data Sheet | |
| 3. Exposure estimation and reference to its source | |
| 3.1 Environment exposure estimation and reference to its source | |
| The table below gives the summary of the environment exposure estimation made in the Chemical Safety Report and in Specific Environmental Release Categories (SPERC) (AISE, 2010): | |

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| Compartment | Measured release (kg/d) | Explanation / source of measured data |
|--------------------|-------------------------|--|
| Aquatic | Negligible | |
| Air (direct) | 2.7 | Specific Environmental Release Categories (SPERC) (AISE, 2010) |
| Soil (direct only) | Negligible | Specific Environmental Release Categories (SPERC) (AISE, 2010) |

3.2 Workers exposure estimation and reference to its source

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

Formulation: long-term exposure concentrations to workers

| Route of Exposure | Exposure concentrations (mg/m ³) | Explanation / source of measured data (Characteristics, Duration, Frequency, OC and RMM described above) |
|---------------------|--|---|
| Dermal exposure | Not relevant | No assessment for dermal exposure because of no local skin effects and no systemic availability after dermal contact. |
| Inhalation exposure | 0.01 | ECETOC TRA V2. PROC 1 |
| | 0.5 | ECETOC TRA V2. PROC 2 |
| | 1 | ECETOC TRA V2. PROC 3 |
| | 5 | ECETOC TRA V2. PROC 4 |
| | 5 | ECETOC TRA V2. PROC 5 |
| | 5 | ECETOC TRA V2. PROC 8a |
| | 5 | ECETOC TRA V2. PROC 8b |
| | 5 | ECETOC TRA V2. PROC 9 |
| | 1 | ECETOC TRA V2. PROC 14 |
| 0.5 | ECETOC TRA V2. PROC 15 | |

4. Guidance to DU to evaluate whether he works inside the boundaries set by the ES

4.1 Environment.

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

4.2 Health.

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

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Substance: Sodium Carbonate ; EC : 207-838-8 ; CAS : 497-19-8

Exposure Scenario for communication:
ES 4: Other industrial and professional uses

0. General information

| | |
|---------------|------------|
| ES identifier | ES 4 |
| Version | 01 |
| Revision date | 28.10.2010 |
| EC # | 207-838-8 |
| CAS # | 497-19-8 |

1. List of use descriptors

1.1 Industrial uses

Market sector: SU 3 (Industrial uses)
Sector of uses SU: No restriction (SUs 0-20, 23, 24)

Environment: (Environmental Release Categories (ERC))

| | |
|--|--------|
| Formulation of preparations | ERC 4 |
| Industrial use resulting in inclusion into or onto a matrix | ERC 5 |
| Industrial use resulting in manufacture of another substance (use of intermediates) | ERC 6a |
| Industrial use of reactive processing aids | ERC 6b |
| Industrial use of process regulators for polymerisation processes in production of resins, rubbers, polymers | ERC 6d |
| Industrial use of substances in closed systems | ERC 7 |

Worker (Process category [PROC] - Phrase)

| | |
|--|---------|
| Use in closed process, no likelihood of exposure | PROC 1 |
| Use in closed, continuous process with occasional controlled exposure | PROC 2 |
| Use in closed batch process (synthesis or formulation) | PROC 3 |
| Use in batch and other process (synthesis) where opportunity for exposure arises | PROC 4 |
| Spraying in industrial settings and applications | PROC 7 |
| Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities | PROC 8a |

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| | |
|---|---------|
| Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities | PROC 8b |
| Transfer of substance or preparation into small containers (dedicated filling line, including weighing) | PROC 9 |
| Roller application or brushing of adhesive and other coating. | PROC 10 |
| Treatment of articles by dipping and pouring | PROC 13 |
| Use as laboratory reagent | PROC 15 |
| Lubrication at high energy conditions and in partly open process | PROC 17 |
| Greasing at high energy conditions | PROC 18 |
| Hand-mixing with intimate contact and only PPE available | PROC 19 |
| Potentially closed processing operations with minerals/metals at elevated temperature; industrial setting. The process temperature is higher than the melting point (High fugacity) | PROC 22 |
| Open processing and transfer operations with minerals/metals at elevated temperature. The process temperature is higher than the melting point (High fugacity) | PROC 23 |
| Handling of solid inorganic substances at ambient temperature | PROC 26 |
| Processes, tasks, activities covered | |
| Manufacturing, maintenance, loading, packaging, sampling and monitoring. | |
| 1.2 Professional uses | |
| Market sector: SU 22 (Professional uses) Sector of uses SU: SU 22 (Professional uses) | |
| Environment: (Environmental Release Categories (ERC)) | |
| Wide dispersive indoor use of processing aids in open systems | ERC 8a |
| Wide dispersive indoor use of reactive substances in open systems | ERC 8b |
| Wide dispersive indoor use resulting in inclusion into or onto a matrix | ERC 8c |
| Wide dispersive outdoor use of processing aids in open systems | ERC 8d |
| Wide dispersive outdoor use of reactive substances in open systems | ERC 8e |
| Wide dispersive outdoor use resulting in inclusion into or onto a matrix | ERC 8f |
| Wide dispersive indoor use of substances in closed systems | ERC 9a |

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| | |
|--|--|
| Wide dispersive outdoor use of substances in closed systems | ERC 9b |
| Worker (Process category [PROC] -Phrase) | |
| Use in closed process, no likelihood of exposure | PROC 1 |
| Use in closed, continuous process with occasional controlled exposure | PROC 2 |
| Use in batch and other process (synthesis) where opportunity for exposure arises | PROC 4 |
| Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities | PROC 8a |
| Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities | PROC 8b |
| Transfer of substance or preparation into small containers (dedicated filling line, including weighing) | PROC 9 |
| Roller application or brushing of adhesive and other coating. | PROC 10 |
| Non industrial spraying | PROC 11 |
| Treatment of articles by dipping and pouring | PROC 13 |
| Use as laboratory reagent | PROC 15 |
| Hand-mixing with intimate contact and only PPE available | PROC 19 |
| Processes, tasks, activities covered Manufacturing, maintenance, loading, packaging, sampling and monitoring. | |
| 2. Conditions of use affecting exposure | |
| 2.0 Product characteristics | |
| Physical form of product | Solid |
| Volatility | Not relevant |
| Level of dustiness | Medium (PROCs 1, 2, 3, 4, 8a, 8b, 9, 15, 19) High (PROCs 22 and 23) |
| 2.1. Control of environmental exposure: | |
| Industrial uses: ERC4, ERC5, ERC 6a/6b/6d, ERC 7. Professional uses: ERC 8a/8b/8c/8d/8e/8f; ERC 9a/9b. | |
| Amounts used | |
| Industrial use up to 100 000 tons/year. Professional use much lower | |
| Frequency and duration of use | |
| Up to continuous. | |

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| | |
|---|--|
| Other given operational conditions affecting environmental exposure | |
| See sections 8 and 13 of Safety Data Sheet | |
| Technical and organisational conditions and measures | |
| In case of dust formation, use filter to reduce atmospheric emissions. | |
| Conditions and measures related to municipal sewage treatment plant | |
| Control the pH of the liquid effluent if the effluent is sent to STP. | |
| Conditions and measures related to external treatment of waste for disposal | |
| No specific waste related measures are to be defined. | |
| Additional good practice advice beyond the REACH CSR (Chemical Safety Report) | |
| See sections 6 and 13 of Safety Data Sheet | |
| 2.2. Control of worker exposure | |
| Valid for PROC 1-4, 7, 8a, 8b, 9, 10, 11, 13, 15, 17, 18, 19, 22, 23, 26. | |
| Amount used (or contained in articles), frequency and duration of use/exposure | |
| Amounts used | Not relevant Not considered to influence the exposure as such for this scenario |
| Frequency and duration of use | |

| Operational conditions of use | Process category [PROC] | Industrial (Data) | Professional (Data) |
|---|-------------------------|--------------------------------|--------------------------|
| Exposure duration per day in workplace [1 Worker] | PROC 1 | | Less than 15 min/day |
| | PROC 2 | | Less than 15 min/day |
| | PROC 3 | > 4 hours/day (Liquid mixture) | |
| | PROC 4 | | > 4 hours/day |
| | PROC 7 | > 4 hours/day (Liquid mixture) | |
| | PROC 8a | | 15 min/day to 1 hour/day |
| | PROC 8b | | 15 min/day to 1 hour/day |
| | PROC 9 | > 4 hours/day (Liquid mixture) | |
| | PROC 10 | | > 4 hours/day |
| | PROC 11 | | > 4 hours/day |
| | PROC 13 | | 15 min/day to 1 hour/day |
| | PROC 15 | | 15 min/day to 1 hour/day |
| | PROC 17 | > 4 hours/day Liquid mixture) | |
| | PROC 18 | > 4 hours/day (Liquid mixture) | |

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| | | | |
|---|---------|--|--------------------------|
| | PROC 19 | | 15 min/day to 1 hour/day |
| PROC26 is not foreseen in ECETOC TRA but it involves activities which are described by PROC 8a and 8b. Therefore the calculation with PROC 8a and 8b covers PROC 26 | | | |
| Technical and organisational conditions and measures | | | |
| See section 8 of Safety Data Sheet | | | |
| Additional good practice advice beyond the REACH CSR (Chemical Safety Report) | | | |
| See sections 7 and 8 of Safety Data Sheet | | | |

3. Exposure estimation and reference to its source

3.1 Environment exposure estimation and reference to its source

The table below gives the summary of the environment exposure estimation made in the Chemical Safety Report and in Specific Environmental Release Categories :

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| Compartment | Measured release (kg/d) |
|--------------------|---|
| Aquatic | Negligible |
| Air (direct) | Small releases might be possible |
| Soil (direct only) | Negligible in all cases except agricultural use Max application use rates of soda ash as co-formulant in plant protection products: Professional agricultural: 0.0126 kg/ ha (tier 1 default use rate: 1 kg/ ha) |

3.2 Workers exposure estimation and reference to its source

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

| Route of Exposure | Explanation / source of measured data (Characteristics, Duration and Frequency of use: , OC and RMM described above) | Industrial: Exposure concentrations (mg/m ³) | Professional: Exposure concentrations (mg/m ³) |
|---------------------|--|--|--|
| Dermal exposure | No local effects and no systemic availability after dermal contact | Not relevant | Not relevant |
| Inhalation exposure | PROC 1 | 0.01 | 0.0044 (Liquid) 0.001 (Solid) |
| | PROC 2 | 0.5 (solid) | 0.044 (Liquid) 0.1 (Solid) |
| | PROC 3 | 1 (solid) | 0.044 (Liquid) |
| | PROC 4 | 5 | 0.044 (Liquid) 5 (Solid) |
| | PROC 7 | 0.022 | |
| | PROC 8a | 5 | 0.088 (Liquid) 1 (Solid) |
| | PROC 8b | 5 (solid) | 0.088 (Liquid) |
| | PROC 9 | 5 (solid) | 0.044 (Liquid) |
| | PROC 10 | | 0.44 (Liquid mixture only) |
| | PROC 11 | | 0.44 (Liquid mixture only) |
| | PROC 13 | | 0.088 (Liquid mixture only) |
| | PROC 15 | 5 (solid) | 0.088 (Liquid mixture only) |
| | PROC 17 | 0.022 (Liquid mixture only) | |
| | PROC 18 | 0.022 (Liquid mixture) | |
| | PROC 19 | 5 | 0.088 (Liquid) 1 (Solid) |
| | PROC 22 | 1 | |
| PROC 23 | 1 | | |
| | Professional agricultural with solid mixture, outdoor, no PPE (ECPA OWB Tier 1: default use rate) | | 0.142 (Solid) |

PROC26 is not foreseen in ECETOC TRA but it involves activities which are described by PROC 8a and 8b. Therefore the calculation with PROC 8a and 8b covers PROC 26.

4. Guidance to DU to evaluate whether he works inside the boundaries set by the ES

4.1 Environment.

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

4.2 Health.

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

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Substance: Sodium Carbonate ; EC : 207-838-8 ; CAS : 497-19-8

Exposure Scenario for communication:
ES 5: Consumer use

0. General information

| | |
|---------------|------------|
| ES identifier | ES 5 |
| Version | 01 |
| Revision date | 28.10.2010 |
| EC # | 207-838-8 |
| CAS # | 497-19-8 |

1. List of use descriptors

Consumer use

Market sector: SU 21 Consumer uses: Private households (= general public = consumers)
Sector of uses SU: SU 21 Consumer uses: Private households (= general public = consumers)

Environment:
(Environmental Release Categories (ERC): ERC 8 a/b/c/d/e/f; ERC 9 a/b.)

Product Category (PC): No restriction (from PC 0 to PC 40)

Process category [PROC]: Not applicable

Processes, tasks, activities covered
Cleaning activities

2. Conditions of use affecting exposure

2.0 Product characteristics

| | |
|--------------------------|--|
| Physical form of product | Solid or dissolved in water |
| Volatility | Not relevant |
| Level of dustiness | Medium for Powdered Detergents, Low for Household soda |

Concentration of substance in preparation / mixture or article

Laundry detergents and surface cleaners: 30%
Machine dish washing tablets: 45%
Household soda (pure sodium carbonate decahydrate) : 37% content of sodium carbonate
Surface cleaning sprays: 10%
Air care products: 5% (PC 3)
Furniture, floor and leather care: 10% (PC 31)

2.1. Control of environmental exposure:

Consumer use – ERC 8 a/b/c/d/e/f; ERC 9 a/b.

Amounts used

Not relevant – Exposure negligible

Frequency and duration of use

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| | | |
|---|--|--|
| Not relevant – Exposure negligible | | |
| Other given operational conditions affecting environmental exposure | | |
| See sections 8 and 13 of Safety Data Sheet | | |
| Technical and organisational conditions and measures | | |
| See section 8 of Safety Data Sheet | | |
| Conditions and measures related to municipal sewage treatment plant | | |
| See section 13 of Safety Data Sheet | | |
| Conditions and measures related to external treatment of waste for disposal | | |
| See section 13 of Safety Data Sheet | | |
| Additional good practice advice beyond the REACH CSR (Chemical Safety Report) | | |
| See sections 6 and 13 of Safety Data Sheet | | |
| 2.2. Control of worker exposure | | |
| Amount used (or contained in articles), frequency and duration of use/exposure | | |
| Amounts used | Household soda: 37 g/l (Worst case assumption) | |
| Frequency and duration of use | Household soda: one time per week (Frequency) and 5 min (Duration) (Worst case assumption) | |
| Technical and organisational conditions and measures | | |
| <i>Keep out of reach of children and avoid contact with eyes. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.</i> | | |
| Additional good practice advice beyond the REACH CSR (Chemical Safety Report) | | |
| See sections 7 and 8 of Safety Data Sheet | | |
| 3. Exposure estimation and reference to its source | | |
| 3.1 Environment exposure estimation and reference to its source | | |
| The table below gives the summary of the environment exposure estimation made in the Chemical Safety Report, referring to HERA (2005a) and to Specific Environmental Release Categories (SPERC) (AISE, 2010). | | |
| Compartment | Measured release (kg/d) | Explanation / source of measured data |
| Aquatic | Negligible | HERA (2005a); see section 9.5.2.3.2 |
| Air (direct) | Negligible | Specific Environmental Release Categories (SPERC) (AISE, 2010) |
| Soil (direct only) | Negligible | Specific Environmental Release Categories (SPERC) (AISE, 2010) |
| 3.2 Consumers exposure estimation and reference to its source | | |
| Exposures have been calculated with the software tool REACT (Reach Exposure Assessment Consumer Tool) Consumer - dermal, long-term: | | |
| Product category | Ingredient Weight fraction | Estimated uptake value (mg/kg bw/day) |

TATA CHEMICALS EUROPE LIMITED

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Natrium House, Winnington Lane, Winnington, Northwich, Cheshire CW8 4GW
Tel: +44(0)1606 724000 web: www.tatachemicalseurope.com

SAFETY DATA SHEET

Version: 4.0 Date: 5th February 2021



ACCORDING TO EC-REGULATIONS 1907/2006 (REACH), 1272/2008 (CLP) & 2015/830

| | | |
|--|-----|----------|
| Laundry regular (AISE C1, PC35), Powder | 0.3 | 1.56E-02 |
| Laundry regular (AISE C1, PC35), Liquid | 0.3 | 2.29E-02 |
| Laundry compact (AISE C2, PC35), Powder | 0.3 | 1.60E-02 |
| Laundry compact (AISE C2, PC35), Liquid/Gel | 0.3 | 2.29E-02 |
| Laundry additives (AISE C4, PC35), Liquid Bleach | 0.3 | 2.21E-02 |
| Hand Dishwashing (AISE C5, PC35) | 0.3 | 3.12E-04 |
| Surface cleaning (AISE C7, PC35), Gel | 0.3 | 4.29E-02 |

The negligible inhalation has been confirmed for the laundry washing scenario reported by HERA (2005a).

4. Guidance to DU to evaluate whether he works inside the boundaries set by the ES

4.1 Environment.

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

4.2 Health.

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

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