

**KEYSTONE BLEACH****Section: 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING****1.1 Product identifier**

Product name : KEYSTONE BLEACH  
UFI : H8JJ-XTGS-DW0X-R25N  
Product code : 123949E  
Use of the Substance/Mixture : Bleach  
Substance type: : Mixture

**For professional users only.**

Product dilution information : No dilution information provided.

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

Identified uses : Laundry aid (gasing). Automatic process  
General purpose cleaner. Manual process  
Recommended restrictions : Reserved for industrial and professional use.  
on use

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

Company : Ecolab Limited  
Forest Park  
Mullingar Industrial Estate, Mullingar Co. Westmeath Ireland +353  
1 276 3500  
infoireland@ecolab.com  
  
Ecolab Ltd.  
PO Box 11; Winnington Avenue  
Northwich, Cheshire, United Kingdom CW8 4DX  
+353 (0)1 276 3500  
ccs@ecolab.com

**1.4 Emergency telephone number**

Emergency telephone number : +353766805288  
+32-(0)3-575-5555 Trans-European  
Poison Information Centre telephone number : National Poisons Information Centre Beaumont Hospital PO Box  
1297 Beaumont Road 9 Dublin +353 1 809 2566(Healthcare  
professionals- 24/7)+353 1 809 2166(public,8am – 10 pm,7/7)

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**Section: 2. HAZARDS IDENTIFICATION**

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**2.1 Classification of the substance or mixture**

**Classification (REGULATION (EC) No 1272/2008)**

Corrosive to metals, Category 1	H290
Skin corrosion, Category 1	H314
Serious eye damage, Category 1	H318
Acute aquatic toxicity, Category 1	H400
Chronic aquatic toxicity, Category 2	H411

**2.2 Label elements**

**Labelling (REGULATION (EC) No 1272/2008)**

Hazard pictograms : 

Signal Word : Danger

Hazard Statements : H290 May be corrosive to metals.  
 H314 Causes severe skin burns and eye damage.  
 H400 Very toxic to aquatic life.  
 H411 Toxic to aquatic life with long lasting effects.

Supplemental Hazard Statements : EUH031 Contact with acids liberates toxic gas.

Precautionary Statements : **Prevention:**  
 P273 Avoid release to the environment.  
 P280 Wear protective gloves/ eye protection/ face protection.

**Response:**  
 P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.  
 P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
 P310 Immediately call a POISON CENTER/doctor.

Hazardous components which must be listed on the label:  
 sodium hypochlorite

**2.3 Other hazards**

Mixing this product with acid or ammonia releases chlorine gas.

**Section: 3. COMPOSITION/INFORMATION ON INGREDIENTS**

**3.2 Mixtures**

**Hazardous components**

Chemical Name	CAS-No. EC-No. REACH No.	Classification REGULATION (EC) No 1272/2008	Concentration : [%]
sodium hypochlorite	7681-52-9	Nota B Skin corrosion Sub-category 1B;	>= 5 - < 10

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	231-668-3 01-2119488154-34	H314 Serious eye damage Category 1; H318 Acute aquatic toxicity Category 1; H400 Chronic aquatic toxicity Category 1; H410	
		EUH031 5 - 100 % M = 10 M(Chronic) = 1	

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

**Section: 4. FIRST AID MEASURES**

**4.1 Description of first aid measures**

- In case of eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately.
- In case of skin contact : Wash off immediately with plenty of water for at least 15 minutes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.
- If swallowed : Rinse mouth with water. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. If conscious, give 2 glasses of water. Get medical attention immediately.
- If inhaled : Remove to fresh air. Treat symptomatically. Get medical attention if symptoms occur.

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

See Section 11 for more detailed information on health effects and symptoms.

**4.3 Indication of immediate medical attention and special treatment needed**

- Treatment : Treat symptomatically.

**Section: 5. FIREFIGHTING MEASURES**

**5.1 Extinguishing media**

- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Unsuitable extinguishing media : None known.

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

- Specific hazards during firefighting : Exposure to decomposition products may be a hazard to health.
- Hazardous combustion products : Not applicable.

**5.3 Advice for firefighters**

- Special protective equipment for firefighters : Use personal protective equipment.

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Further information : Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. In the event of fire and/or explosion do not breathe fumes.

**Section: 6. ACCIDENTAL RELEASE MEASURES**

**6.1 Personal precautions, protective equipment and emergency procedures**

Advice for non-emergency personnel : Ensure adequate ventilation. Keep people away from and upwind of spill/leak. Avoid inhalation, ingestion and contact with skin and eyes. When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. Ensure clean-up is conducted by trained personnel only. Refer to protective measures listed in sections 7 and 8.

Advice for emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials.

**6.2 Environmental precautions**

Environmental precautions : Do not allow contact with soil, surface or ground water.

**6.3 Methods and materials for containment and cleaning up**

Methods for cleaning up : Stop leak if safe to do so. Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). Flush away traces with water. For large spills, dike spilled material or otherwise contain material to ensure runoff does not reach a waterway.

**6.4 Reference to other sections**

See Section 1 for emergency contact information.  
For personal protection see section 8.  
See Section 13 for additional waste treatment information.

**Section: 7. HANDLING AND STORAGE**

**7.1 Precautions for safe handling**

Advice on safe handling : Do not ingest. Do not get in eyes, on skin, or on clothing. Use only with adequate ventilation. Wash hands thoroughly after handling. Do not breathe spray, vapour. Mixing this product with acid or ammonia releases chlorine gas. In case of mechanical malfunction, or if in contact with unknown dilution of product, wear full Personal Protective Equipment (PPE).

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Remove and wash contaminated clothing before re-use. Wash face, hands and any exposed skin thoroughly after handling. Provide suitable facilities for quick drenching or flushing of the eyes and body in case of contact or splash hazard.

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

- Requirements for storage areas and containers : Protect from frost, heat and sunlight. Store at room temperature in the original container. Do not store near acids. Absorb spillage to prevent material damage. Keep out of reach of children. Keep container tightly closed. Keep only in original packaging. Store in suitable labeled containers.
- Storage temperature : 5 °C to 25 °C
- Packaging material : Suitable material: Plastic material  
Unsuitable material: Mild steel, Aluminium

**7.3 Specific end uses**

- Specific use(s) : Laundry aid (gasing). Automatic process  
General purpose cleaner. Manual process

**Section: 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

**8.1 Control parameters**

**Occupational Exposure Limits**

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
chlorine	7782-50-5	OELV - 15 min (STEL)	0.5 ppm 1.5 mg/m3	IR_OEL

**8.2 Exposure controls**

**Appropriate engineering controls**

- Engineering measures : Effective exhaust ventilation system Maintain air concentrations below occupational exposure standards.

**Individual protection measures**

- Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Remove and wash contaminated clothing before re-use. Wash face, hands and any exposed skin thoroughly after handling. Provide suitable facilities for quick drenching or flushing of the eyes and body in case of contact or splash hazard.
- Eye/face protection (EN 166) : Safety goggles  
Face-shield
- Hand protection (EN 374) : Recommended preventive skin protection  
Gloves  
Nitrile rubber  
butyl-rubber  
Breakthrough time: 1 – 4 hours  
Minimum thickness for butyl-rubber 0.7 mm for nitrile rubber 0.4 mm or equivalent (please refer to the gloves manufacturer/distributor for advise).  
Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.
- Skin and body protection (EN 14605) : Personal protective equipment comprising: suitable protective gloves, safety goggles and protective clothing including

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appropriate safety shoes

Respiratory protection (EN 143, 14387) : None required if airborne concentrations are maintained below the exposure limit listed in Exposure Limit Information. Use certified respiratory protection equipment meeting EU requirements(89/656/EEC, (EU) 2016/425), or equivalent, when respiratory risks cannot be avoided or sufficiently limited by technical means of collective protection or by measures, methods or procedures of work organization.

**Environmental exposure controls**

General advice : Consider the provision of containment around storage vessels.

**Section: 9. PHYSICAL AND CHEMICAL PROPERTIES**

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

Physical state : liquid  
Colour : colourless  
Odour : Chlorine  
pH : 12.0 - 13.0, 100 %  
Particle characteristics  
Assessment : not applicable  
Particle size : not applicable  
Particle Size Distribution : not applicable  
Dustiness : not applicable  
Specific surface area : not applicable  
Surface charge/Zeta potential : not applicable  
Shape : not applicable  
Crystallinity : not applicable  
Surface treatment /Coatings : not applicable  
Flash point : Not applicable.  
Odour Threshold : Not applicable and/or not determined for the mixture  
Melting point/freezing point : Not applicable and/or not determined for the mixture  
Boiling point, initial boiling point and boiling range : Not applicable and/or not determined for the mixture  
Evaporation rate : Not applicable and/or not determined for the mixture  
Flammability : Not applicable and/or not determined for the mixture  
Upper explosion limit : Not applicable and/or not determined for the mixture  
Lower explosion limit : Not applicable and/or not determined for the mixture  
Vapour pressure : Not applicable and/or not determined for the mixture  
Relative vapour density : Not applicable and/or not determined for the mixture  
Density and / or relative density : 1.1 - 1.2

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Water solubility	: soluble
Solubility in other solvents	: Not applicable and/or not determined for the mixture
Partition coefficient: n-octanol/water (log value)	: Not applicable and/or not determined for the mixture
Auto-ignition temperature	: Not applicable and/or not determined for the mixture
Thermal decomposition	: Not applicable and/or not determined for the mixture
Viscosity, kinematic	: Not applicable and/or not determined for the mixture
Explosive properties	: Not applicable and/or not determined for the mixture
Oxidizing properties	: The substance or mixture is not classified as oxidizing.

**9.2 Other information**

Not applicable and/or not determined for the mixture

**Section: 10. STABILITY AND REACTIVITY**

**10.1 Reactivity**

No dangerous reaction known under conditions of normal use.

**10.2 Chemical stability**

Stable under normal conditions.

**10.3 Possibility of hazardous reactions**

Mixing this product with acid or ammonia releases chlorine gas.

**10.4 Conditions to avoid**

None known.

**10.5 Incompatible materials**

Acids  
Metals

Mild steel  
Aluminium

**10.6 Hazardous decomposition products**

In the event of fire, see Section 5

**Section: 11. TOXICOLOGICAL INFORMATION**

**11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008**

Information on likely routes of exposure : Inhalation, Eye contact, Skin contact

**Product**

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- Acute oral toxicity : There is no data available for this product.
- Acute inhalation toxicity : There is no data available for this product.
- Acute dermal toxicity : There is no data available for this product.
- Skin corrosion/irritation : There is no data available for this product.
- Serious eye damage/eye irritation : There is no data available for this product.
- Respiratory or skin sensitization : There is no data available for this product.
- Carcinogenicity : There is no data available for this product.
- Reproductive effects : There is no data available for this product.
- Germ cell mutagenicity : There is no data available for this product.
- Teratogenicity : There is no data available for this product.
- STOT - single exposure : There is no data available for this product.
- STOT - repeated exposure : There is no data available for this product.
- Aspiration toxicity : There is no data available for this product.

**Components**

- Acute oral toxicity : sodium hypochlorite LD50 rat: 5,230 mg/kg

**Components**

- Acute dermal toxicity : sodium hypochlorite LD50 rabbit: > 10,000 mg/kg

**Potential Health Effects**

- Eyes : Causes serious eye damage.
- Skin : Causes severe skin burns.
- Ingestion : Causes digestive tract burns.
- Inhalation : May cause nose, throat, and lung irritation.
- Chronic Exposure : Health injuries are not known or expected under normal use.

**Experience with human exposure**

- Eye contact : Redness, Pain, Corrosion
- Skin contact : Redness, Pain, Corrosion
- Ingestion : Corrosion, Abdominal pain
- Inhalation : Respiratory irritation, Cough

**11.2 Information on other hazards**

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**Endocrine disrupting properties** : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher

**Further information** : no data available

**Section: 12. ECOLOGICAL INFORMATION**

**12.1 Toxicity**

**Environmental Effects** : Very toxic to aquatic life. Toxic to aquatic life with long lasting effects.

**Product**

Toxicity to fish : no data available

Toxicity to daphnia and other aquatic invertebrates : no data available

Toxicity to algae : no data available

**Components**

Toxicity to daphnia and other aquatic invertebrates : sodium hypochlorite  
48 h EC50 Aquatic Invertebrate: 0.071 mg/l

**12.2 Persistence and degradability**

**Product**

no data available

**Components**

Biodegradability : sodium hypochlorite  
Result: Not applicable - inorganic

**12.3 Bioaccumulative potential**

no data available

**12.4 Mobility in soil**

no data available

**12.5 Results of PBT and vPvB assessment**

**Product**

Assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

**12.6 Endocrine disrupting properties**

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The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher

**12.7 Other adverse effects**

no data available

**Section: 13. DISPOSAL CONSIDERATIONS**

Dispose of in accordance with the European Directives on waste and hazardous waste. Waste codes should be assigned by the user, preferably in discussion with the waste disposal authorities.

**13.1 Waste treatment methods**

- Product : Do not contaminate storm water drains, natural waterways or soil with chemical or used container. Where possible recycling is preferred to disposal or incineration. If recycling is not practicable, dispose of contents/container in accordance with local regulations. Dispose of wastes in an approved waste disposal facility.
- Contaminated packaging : Dispose of as unused product. Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers. Dispose of in accordance with local, state, and federal regulations.
- Guidance for Waste Code selection : Inorganic wastes containing dangerous substances. If this product is used in any further processes, the final user must redefine and assign the most appropriate European Waste Catalogue Code. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable European (EU Directive 2008/98/EC) and local regulations.

**Section: 14. TRANSPORT INFORMATION**

The shipper/consignor/sender is responsible to ensure that the packaging, labeling, and markings are in compliance with the selected mode of transport.

**Land transport (ADR/ADN/RID)**

- 14.1 UN number or ID number : 1791
- 14.2 UN proper shipping name : HYPOCHLORITE SOLUTION
- 14.3 Transport hazard class(es) : 8
- 14.4 Packing group : III
- 14.5 Environmental hazards : Yes
- 14.6 Special precautions for user : None

**Air transport (IATA)**

- 14.1 UN number or ID number : 1791
- 14.2 UN proper shipping name : Hypochlorite solution

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14.3 Transport hazard class(es) : 8  
14.4 Packing group : III  
14.5 Environmental hazards : Yes  
  
14.6 Special precautions for user : None

**Sea transport (IMDG/IMO)**

14.1 UN number or ID number : 1791  
14.2 UN proper shipping name : HYPOCHLORITE SOLUTION  
(sodium hypochlorite)  
14.3 Transport hazard class(es) : 8  
14.4 Packing group : III  
14.5 Environmental hazards : Yes  
  
14.6 Special precautions for user : None  
14.7 Maritime transport in bulk according to IMO instruments : Not applicable.

**Section: 15. REGULATORY INFORMATION**

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

according to Detergents Regulation EC 648/2004 : 5 % or over but less than 15 %: Chlorine-based bleaching agents  
less than 5 %: Phosphonates

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances. : ENVIRONMENTAL HAZARDS E1  
Lower tier : 100 t  
Upper tier : 200 t

Candidate List of Substances of Very High Concern for Authorisation : Not applicable.

**National Regulations**

**Take note of Dir 94/33/EC on the protection of young people at work.**

Other regulations : Safety, Health and Welfare at Work Act, 2005  
European Communities (Classification, Packaging, Labelling and Notification of Dangerous Preparations) Regulations 1995. (S.I. 272 of 1995) as amended

**15.2 Chemical Safety Assessment**

No Chemical Safety Assessment has been carried out on the product.

**Section: 16. OTHER INFORMATION**

**Procedure used to derive the classification according to REGULATION (EC) No 1272/2008**

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Classification	Justification
Corrosive to metals 1, H290	Based on product data or assessment
Skin corrosion 1, H314	Based on product data or assessment
Serious eye damage 1, H318	Based on product data or assessment
Acute aquatic toxicity 1, H400	Calculation method
Chronic aquatic toxicity 2, H411	Calculation method

**Full text of H-Statements**

H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

**Full text of other abbreviations**

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road; AIIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of Very High Concern; TCSI - Taiwan Chemical Substance Inventory; TECl - Thailand Existing Chemicals Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

**Further information**

Prepared by : Regulatory Affairs

Numbers quoted in the MSDS are given in the format: 1,000,000 = 1 million and 1,000 = 1 thousand. 0.1 = 1 tenth and 0.001 = 1 thousandth

REVISED INFORMATION: Significant changes to regulatory or health information for this revision is indicated by a bar in the left-hand margin of the SDS.

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The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

**Annex: Exposure Scenarios**

**Exposure Scenario: General purpose cleaner. Manual process**

Life Cycle Stage : Widespread use by professional workers  
Product category : **PC35** Washing and cleaning products (including solvent based products)

**Contributing scenario controlling environmental exposure for:**

Environmental release category : **ERC8a** Wide dispersive indoor use of processing aids in open systems  
Daily amount per site : 7.5 kg  
Type of Sewage Treatment Plant : Municipal sewage treatment plant

**Contributing scenario controlling worker exposure for:**

Process category : **PROC10** Roller application or brushing  
Exposure duration : 480 min  
Operational conditions and risk management measures : Indoor  
Local Exhaust Ventilation is not required  
General ventilation Ventilation rate per hour 1  
Skin Protection : see section 8  
Respiratory Protection : see section 8

**Contributing scenario controlling worker exposure for:**

Process category : **PROC8a** Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities  
Exposure duration : 60 min  
Operational conditions and risk management measures : Indoor  
Local Exhaust Ventilation is not required

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General ventilation                      Ventilation rate per hour                      1

Skin Protection                      :    see section 8

Respiratory Protection                      :    see section 8

**Exposure Scenario: Laundry aid (gasing). Automatic process**

Life Cycle Stage                      :    Use at industrial sites

Product category                      :    **PC35**            Washing and cleaning products (including solvent based products)

**Contributing scenario controlling environmental exposure for:**

Environmental release category                      :    **ERC4**            Industrial use of processing aids in processes and products, not becoming part of articles

Daily amount per site                      :    50 kg

Type of Sewage Treatment Plant                      :    Municipal sewage treatment plant

**Contributing scenario controlling worker exposure for:**

Process category                      :    **PROC8b**            Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities

Exposure duration                      :    60 min

Operational conditions and risk management measures                      :    Indoor

Local Exhaust Ventilation is not required

General ventilation                      Ventilation rate per hour                      1

Skin Protection                      :    see section 8

Respiratory Protection                      :    see section 8

**Contributing scenario controlling worker exposure for:**

Process category                      :    **PROC2**            Use in closed, continuous process with occasional controlled exposure

Exposure duration                      :    480 min

Operational conditions and risk management measures                      :    Indoor

Local Exhaust Ventilation is not required

General ventilation                      Ventilation rate per hour                      1

Skin Protection                      :    see section 8

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Respiratory Protection : see section 8