

PermaClean™ PC-33

Section: 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier: **PermaClean™ PC-33**
Substance type: CLP Mixture

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

Use of the Substance/Mixture : REVERSE OSMOSIS CLEANER
Identified uses : Membranes Cleaning treatment
Recommended restrictions on use : Reserved for industrial and professional use.

1.3 Details of the supplier of the safety data sheet:

Company : Nalco Ltd.
P.O. BOX 11, WINNINGTON AVENUE
NORTHWICH, CHESHIRE, U.K. CW8 4DX
+44 (0)1606 74488
For Product Safety information please contact:
msdseame@nalco.com

1.4 Emergency telephone number:

Emergency telephone number : +44 1618841235
+32-(0)3-575-5555 Trans-European
Poison Information Centre : For medical professionals only: 0344 892 0111 Poison Control
telephone number Center

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Section: 2. HAZARDS IDENTIFICATION



2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Corrosive to metals, Category 1	H290
Skin irritation, Category 2	H315
Serious eye damage, Category 1	H318
Specific target organ toxicity - repeated exposure, Category 2	H373

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms	:	 
Signal Word	:	Danger
Hazard Statements	:	H290 May be corrosive to metals. H315 Causes skin irritation. H318 Causes serious eye damage.

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	H373	May cause damage to organs through prolonged or repeated exposure.
Precautionary Statements	Prevention: P234 P260 P280 Response: P302 + P352 P305 + P351 + P338 + P310 P314	Keep only in original packaging. Do not breathe dust/fume/gas/mist/vapours/spray. Wear protective gloves/ eye protection/ face protection. IF ON SKIN: Wash with plenty of water. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/ physician. Get medical advice/ attention if you feel unwell.

Hazardous components which must be listed on the label:
Tetrasodium EDTA Sodium Hydroxide

2.3 Other hazards

None known.

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: [%]
Tetrasodium EDTA	64-02-8 200-573-9 01-2119486762-27	Acute toxicity Category 4; H302 Serious eye damage Category 1; H318 Specific target organ toxicity - repeated exposure Category 2; H373	30 - < 40
Sodium Hydroxide	1310-73-2 215-185-5 01-2119457892-27	Skin corrosion Category 1A; H314 Corrosive to metals Category 1; H290 Skin corrosion Category 1A H314 >= 5 % Skin corrosion Category 1B H314 2 - < 5 % Skin irritation Category 2 H315 0.5 - < 2 % Eye irritation Category 2 H319 0.5 - < 2 %	1 - < 2

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

If inhaled : Remove to fresh air.

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Treat symptomatically.
Get medical attention if symptoms occur.

- In case of skin contact : Wash off immediately with plenty of water for at least 15 minutes.
Use a mild soap if available.
Get medical attention if irritation develops and persists.
- 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.
- If swallowed : Rinse mouth.
Get medical attention if symptoms occur.
- Protection of first-aiders : In event of emergency assess the danger before taking action.
Do not put yourself at risk of injury. If in doubt, contact emergency responders. Use personal protective equipment as required.

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 : Not flammable or combustible.
- Hazardous combustion products : Depending on combustion properties, decomposition products may include following materials:
Carbon oxides
nitrogen oxides (NOx)
metal oxides

5.3 Advice for firefighters

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

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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 | : | Avoid contact with skin and eyes. Do not breathe spray, vapour. Do not get in eyes, on skin, or on clothing. Wash hands thoroughly after handling. Use only with adequate ventilation. |
| 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. |

7.2 Conditions for safe storage, including any incompatibilities

- | | | |
|---|---|--|
| Requirements for storage areas and containers | : | Absorb spillage to prevent material damage. Keep out of reach of children. Keep container tightly closed. Store in suitable labelled containers. |
|---|---|--|

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- Suitable material : The following compatibility data is suggested based on similar product data and/or industry experience: HDPE (high density polyethylene), Stainless Steel 304, Compatibility with Plastic Materials can vary; we therefore recommend that compatibility is tested prior to use., Mild steel, Stainless Steel 316L, Polyurethane, Buna-N, EPDM, Polyethylene, Polypropylene, PVC, Epoxy phenolic resin, Neoprene, Chlorosulfonated polyethylene rubber, Fluoroelastomer
- Unsuitable material : The following compatibility data is suggested based on similar product data and/or industry experience: Brass, 100% phenolic resin liner

7.3 Specific end uses

- Specific use(s) : REVERSE OSMOSIS CLEANER

Section: 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**8.1 Control parameters****Occupational Exposure Limits**

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
Sodium Hydroxide	1310-73-2	STEL	2 mg/m3	UKCOSSTD

DNEL

Sodium Hydroxide	:	End Use: Workers Exposure routes: Inhalation Potential health effects: Long-term local effects Value: 1 mg/m3
	:	End Use: Consumers Exposure routes: Inhalation Potential health effects: Long-term local effects Value: 1 mg/m3

8.2 Exposure controls**Appropriate engineering controls**

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

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butyl-rubber
Breakthrough time: 1 – 4 hours
Minimum thickness for butyl-rubber 0.3 mm for nitrile rubber
0.2 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) : Wear suitable protective clothing.

Respiratory protection (EN 143, 14387) : When respiratory risks cannot be avoided or sufficiently limited by technical means of collective protection or by measures, methods or procedures of work organization, consider the use of certified respiratory protection equipment meeting EU requirements (89/656/EEC, (EU) 2016/425), or equivalent, with filter type: P

The Personal Protective Equipment (PPE) recommendations provided above have been made in good faith based on typical expected conditions of use. PPE selection should always be completed in conjunction with a proper risk assessment and in accordance with a PPE management program.

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**

Appearance	: Liquid
Colour	: light yellow
Odour	: Slight
Flash point	: > 93 °C
pH	: no data available
Odour Threshold	: no data available
Melting point/freezing point	: Freezing Point: -13 °C
Initial boiling point and boiling range	: 107 °C
Evaporation rate	: no data available
Flammability (solid, gas)	: no data available
Upper explosion limit	: no data available
Lower explosion limit	: no data available
Vapour pressure	: similar to water
Relative vapour density	: no data available
Relative density	: 1.3
Density	: 1.26 g/cm ³
Solubility(ies)	

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Water solubility	: completely soluble
Solubility in other solvents	: no data available
Partition coefficient: n-octanol/water	: no data available
Auto-ignition temperature	: no data available
Thermal decomposition	: no data available
Viscosity, dynamic	: no data available
Viscosity, kinematic	: no data available
Explosive properties	: no data available
Oxidizing properties	: no data available

9.2 Other information

no data available

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

Hazardous reactions : No dangerous reaction known under conditions of normal use.

10.4 Conditions to avoid

Conditions to avoid : Extremes of temperature

10.5 Incompatible materials

Materials to avoid : Contact with strong acids (e.g. sulfuric, phosphoric, nitric, hydrochloric, chromic, sulfonic) may generate heat, splattering or boiling and toxic vapors.
Contact with strong oxidizers (e.g. chlorine, peroxides, chromates, nitric acid, perchlorate, concentrated oxygen, permanganate) may generate heat, fires, explosions and/or toxic vapors.
Contact with reactive metals (e.g. aluminum) may result in the generation of flammable hydrogen gas.

Mild steel
Aluminium

10.6 Hazardous decomposition products

Hazardous decomposition products : Depending on combustion properties, decomposition products may include following materials:
Carbon oxides
nitrogen oxides (NO_x)
metal oxides

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Section: 11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

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

Toxicity

Product

Acute oral toxicity : Acute toxicity estimate : > 2,000 mg/kg
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 : Tetrasodium EDTA
LD50 rat: 1,700 mg/kg

Potential Health Effects

Eyes : Causes serious eye damage.

Skin : Causes skin irritation.

Ingestion : Health injuries are not known or expected under normal use.

Inhalation : Health injuries are not known or expected under normal use.

Chronic Exposure : May cause damage to organs through prolonged or repeated exposure.

Experience with human exposure

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Eye contact : Redness, Pain, Corrosion

Skin contact : Redness, Irritation

Ingestion : No symptoms known or expected.

Inhalation : No symptoms known or expected.

Further information : no data available

Section: 12. ECOLOGICAL INFORMATION

12.1 Toxicity

Product

Environmental Effects : This product has no known ecotoxicological effects.

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 fish : Tetrasodium EDTA
96 h LC50 Fish: 121 mg/l

Components

Toxicity to daphnia and other aquatic invertebrates : Tetrasodium EDTA
48 h EC50 Daphnia magna (Water flea): 140 mg/l

Sodium Hydroxide
48 h EC50 Daphnia magna (Water flea): 40 mg/l

12.2 Persistence and degradability

Product

Biodegradability : Result: Poorly biodegradable

Components

Biodegradability : Tetrasodium EDTA
Result: Poorly biodegradable

Sodium Hydroxide
Result: Not applicable - inorganic

12.3 Bioaccumulative potential

no data available

12.4 Mobility in soil

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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 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 : 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.
- Guidance for Waste Code selection : Organic 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: UN 3267
14.2 UN proper shipping name: CORROSIVE LIQUID, BASIC, ORGANIC, N.O.S (Tetrasodium EDTA)
14.3 Transport hazard class(es): 8
14.4 Packing group: III
14.5 Environmental hazards: No
14.6 Special precautions for user: Not applicable.

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Air transport (IATA)

14.1 UN number:	UN 3267
14.2 UN proper shipping name:	CORROSIVE LIQUID, BASIC, ORGANIC, N.O.S (Tetrasodium EDTA, Sodium Hydroxide)
14.3 Transport hazard class(es):	8
14.4 Packing group:	III
14.5 Environmental hazards:	No
14.6 Special precautions for user:	Not applicable.

Sea transport (IMDG/IMO)

14.1 UN number:	UN 3267
14.2 UN proper shipping name:	CORROSIVE LIQUID, BASIC, ORGANIC, N.O.S (Tetrasodium EDTA, Sodium Hydroxide)
14.3 Transport hazard class(es):	8
14.4 Packing group:	III
14.5 Environmental hazards:	No
14.6 Special precautions for user:	Not applicable.
14.7 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:

Seveso III: Directive : Not applicable.
2012/18/EU of the European
Parliament and of the Council
on the control of major-
accident hazards involving
dangerous substances.

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

INTERNATIONAL REGULATIONS

NSF INTERNATIONAL

This product has received NSF/International certification under NSF/ANSI Standard 60 in the Membrane Cleaner category. The official name is "Miscellaneous Water Supply Products."

INTERNATIONAL CHEMICAL CONTROL LAWS

The surfactant(s) contained in this preparation complies(comply) with the biodegradability criteria as laid down in Regulation (EC) No.648/2004 on detergents.

CANADA

The substance(s) in this preparation are included in or exempted from the Domestic Substance List (DSL).

United States TSCA Inventory
On TSCA Inventory

NATIONAL REGULATIONS GERMANY

Water contaminating class : WGK 2

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(Germany)

Classification according to AwSV, Annex 1

15.2 Chemical Safety Assessment:

A Chemical Safety Assessment has been carried out for some of the substances in this mixture.

Section: 16. OTHER INFORMATION**Procedure used to derive the classification according to REGULATION (EC) No 1272/2008**

Classification	Justification
Corrosive to metals 1, H290	Based on product data or assessment
Skin irritation 2, H315	Calculation method
Serious eye damage 1, H318	Calculation method
Specific target organ toxicity - repeated exposure 2, H373	Calculation method

Full text of H-Statements

H290	May be corrosive to metals.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H373	May cause damage to organs through prolonged or repeated exposure if inhaled.

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; AIIC - 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; TECI - 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

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Sources of key data used to compile the Safety Data Sheet : IARC Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Man, Geneva: World Health Organization, International Agency for Research on Cancer.

The possible key literature references and data sources which may have been used in conjunction with the consideration of expert judgment to compile this Safety Data Sheet: European regulations/directives (including (EC) No. 1907/2006, (EC) No. 1272/2008), supplier data, inter-net, ESIS, IUCLID, ERICards, Non European official regulatory data and other data sources.

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.

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: Membranes Cleaning treatment

Life Cycle Stage : Industrial uses: Uses of substances as such or in preparations at industrial sites

Sector of use : **SU23** Electricity, steam, gas water supply and sewage treatment

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 : 5 kg

Type of Sewage Treatment Plant : none

Contributing scenario controlling worker exposure for:

Process category : **PROC15** Use as laboratory reagent

Exposure duration : 60.00 min

Operational conditions and risk management measures : Indoor

Local Exhaust Ventilation with 90% efficiency is required

General ventilation Ventilation rate per hour: 1

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Skin Protection : see section 8

Respiratory Protection : see section 8

Contributing scenario controlling worker exposure for:

Process category : **PROC1** Use in closed process, no likelihood of exposure

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 : **PROC8a** Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities

Exposure duration : 15 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 : **PROC28** Manual maintenance (cleaning and repair) of machinery

Exposure duration : 240 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