

Safety data sheet
according to Regulation (EC) No 1907/2006, Article 31

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Printing date 11.07.2025

Revision: 25.04.2025

Version number 9.05 (replaces version 9.04)

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

· **1.1 Product identifier**

· **Trade name:** N,N-dimethylformamide

· **Article number:** 1785

· **CAS Number:**

68-12-2

· **EC number:**

200-679-5

· **Index number:**

616-001-00-X

· **Registration number** 01-2119475605-32-XXXX

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

· **Sector of Use**

SU3 Industrial uses: Uses of substances as such or in preparations at industrial sites

SU9 Manufacture of fine chemicals

SU10 Formulation [mixing] of preparations and/or re-packaging (excluding alloys)

· **Product category** PC19 Intermediate

· **Process category**

PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions.

PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions

PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition

PROC4 Chemical production where opportunity for exposure arises

PROC5 Mixing or blending in batch processes

PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities

PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities

PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)

PROC15 Use as laboratory reagent

· **Environmental release category**

ERC2 Formulation into mixture

ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article)

ERC6a Use of intermediate

· **Application of the substance / the mixture**

Laboratory chemicals

Chemical for various applications

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Trade name: N,N-dimethylformamide

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

- **Manufacturer/Supplier:**

PANREAC QUIMICA S.L.U.

Tel. (+34) 937 489 400

C/Garraf 2

Fax. (+34) 937 489 401

Polígono Pla de la Bruguera

e-mail: product.safety@itwreagents.com

E-08211 Castellar del Vallès (Barcelona)

- **Further information obtainable from:** email: product.safety@panreac.com

- **1.4 Emergency telephone number:**

Single telephone number for emergency calls: 112 (EU)

Tel.: (+34) 937 489 499

SECTION 2: Hazards identification

- **2.1 Classification of the substance or mixture**

- **Classification according to Regulation (EC) No 1272/2008**

Flam. Liq. 3 H226 Flammable liquid and vapour.

Acute Tox. 4 H312 Harmful in contact with skin.

Acute Tox. 4 H332 Harmful if inhaled.

Eye Irrit. 2 H319 Causes serious eye irritation.

Repr. 1B H360D May damage the unborn child.

- **2.2 Label elements**

- **Labelling according to Regulation (EC) No 1272/2008**

The substance is classified and labelled according to the CLP regulation.

- **Hazard pictograms**



GHS02 GHS07 GHS08

- **Signal word** Danger

- **Hazard statements**

H226 Flammable liquid and vapour.

H312+H332 Harmful in contact with skin or if inhaled.

H319 Causes serious eye irritation.

H360D May damage the unborn child.

- **Precautionary statements**

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.

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.

P405 Store locked up.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

- **2.3 Other hazards**

- **Results of PBT and vPvB assessment**

- **PBT:** Not applicable.

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- **vPvB:** Not applicable.

SECTION 3: Composition/information on ingredients

- **3.1 Substances**
- **CAS No. Description**
68-12-2 N,N-dimethylformamide
- **Identification number(s)**
- **EC number:** 200-679-5
- **Index number:** 616-001-00-X

- **SVHC**

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SECTION 4: First aid measures

- **4.1 Description of first aid measures**
- **General information:**
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
Involve doctor immediately.
- **After inhalation:**
Supply fresh air or oxygen; call for doctor.
In case of unconsciousness place patient stably in side position for transportation.
Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.
If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel.
- **After skin contact:**
Wash off with plenty of water.
Call a doctor immediately.
- **After eye contact:** Call a doctor immediately.
- **After swallowing:**
make victim drink water (maximum of 2 drinking glasses)
Subsequently administer:
activated charcoal (20 - 40 g in 10 % slurry)
Call a doctor immediately.
- **4.2 Most important symptoms and effects, both acute and delayed**
No further relevant information available.
- **4.3 Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
- **Suitable extinguishing agents:**
CO₂, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **5.2 Special hazards arising from the substance or mixture**
In case of fire, the following can be released:
Nitrogen oxides (NO_x)
Carbon monoxide and carbon dioxide
Forms explosive mixtures with air at ambient temperatures.
Vapours are heavier than air and may spread along floors.

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Beware of backfiring.

Forms explosive mixtures with air on intense heating.

· **5.3 Advice for firefighters**· **Protective equipment:**

Mouth respiratory protective device.

Wear self-contained respiratory protective device.

· **Additional information**

Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

Contain escaping vapours with water.

SECTION 6: Accidental release measures· **6.1 Personal precautions, protective equipment and emergency procedures**

Avoid substance contact.

Do not inhale steams/aerosols.

· **6.2 Environmental precautions:** Do not allow to enter sewers/ surface or ground water.· **6.3 Methods and material for containment and cleaning up:**

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Dispose contaminated material as waste according to section 13.

Ensure adequate ventilation.

Clean up affected area.

· **6.4 Reference to other sections**

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

SECTION 7: Handling and storage· **7.1 Precautions for safe handling**

Ensure good ventilation/exhaustion at the workplace.

Open and handle receptacle with care.

Prevent formation of aerosols.

Ensure good interior ventilation, especially at floor level. (Fumes are heavier than air).

· **Information about fire - and explosion protection:**

Keep ignition sources away - Do not smoke.

Protect from heat.

Protect against electrostatic charges.

Keep respiratory protective device available.

· **7.2 Conditions for safe storage, including any incompatibilities**· **Storage:**· **Requirements to be met by storerooms and receptacles:** No special requirements.· **Information about storage in one common storage facility:** Not required.· **Further information about storage conditions:**

Keep container tightly sealed.

Protect from heat and direct sunlight.

Open receptacle only under localised extractor facilities.

Store receptacle in a well ventilated area.

Store under lock and key and with access restricted to technical experts or their assistants only.

· **Recommended storage temperature:** Room Temperature· **Storage class:** 3· **7.3 Specific end use(s)** No further relevant information available.

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SECTION 8: Exposure controls/personal protection

· 8.1 Control parameters

· Ingredients with limit values that require monitoring at the workplace:

68-12-2 N,N-dimethylformamide

BOELV	Short-term value: 30 mg/m ³ , 10 ppm Long-term value: 15 mg/m ³ , 5 ppm Skin
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IOELV	Short-term value: 30 mg/m ³ , 10 ppm Long-term value: 15 mg/m ³ , 5 ppm Skin
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· DNELs

Dermal	Long-term - systemic effects, worker	1.1 mg/kg
Inhalative	Long-term - systemic effects, worker	6 mg/m ³

· PNECs

Aquatic compartment - freshwater	30 mg/L
Aquatic compartment - marine water	3 mg/L
Aquatic compartment - water, intermittent releases	30 mg/L
Aquatic compartment - sediment in freshwater	25.05 mg/kg
Terrestrial compartment - soil	16.24 mg/kg
Sewage treatment plant	123 mg/L

· **Additional information:** The lists valid during the making were used as basis.

· 8.2 Exposure controls

· **Appropriate engineering controls** No further data; see section 7.

· **Individual protection measures, such as personal protective equipment**

· **General protective and hygienic measures:**

Keep away from foodstuffs, beverages and feed.
 Immediately remove all soiled and contaminated clothing
 Wash hands before breaks and at the end of work.
 Store protective clothing separately.
 Avoid contact with the eyes and skin.

· **Respiratory protection:**

Filter A
 In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.
 Use suitable respiratory protective device only when aerosol or mist is formed.

· **Hand protection**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

· **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

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- **For the permanent contact gloves made of the following materials are suitable:**
Butyl rubber, BR
Recommended thickness of the material: ≥ 0.7 mm
Value for the permeation: Level ≥ 480 min
- **As protection from splashes gloves made of the following materials are suitable:**
Fluorocarbon rubber (Viton)
Recommended thickness of the material: ≥ 0.7 mm
Value for the permeation: Level ≥ 240 min
- **Eye/face protection**



Tightly sealed goggles

- **Body protection:**
Use protective suit.
Flame retardant antistatic protective clothing

SECTION 9: Physical and chemical properties

- **9.1 Information on basic physical and chemical properties**
- **General Information**
- **Physical state** Liquid
- **Colour:** Colourless
- **Odour:** Amine-like
- **Odour threshold:** Not determined.
- **Melting point/freezing point:** -61 °C
- **Boiling point or initial boiling point and boiling range** 153 °C
- **Flammability** Not applicable.
- **Lower and upper explosion limit**
- **Lower:** 2.2 Vol %
- **Upper:** 16 Vol %
- **Flash point:** 58 °C
- **Auto-ignition temperature:** 410 °C
- **Decomposition temperature:** >350 °C
- **pH** 7
- **Viscosity:**
- **Kinematic viscosity** Not determined.
- **Dynamic at 20 °C:** 0.802 mPas
- **Solubility**
- **water:** Not determined.
- **Partition coefficient n-octanol/water (log value)** -0.85001
- **Vapour pressure at 20 °C:** 3.77 hPa
- **Density and/or relative density**
- **Density at 20 °C:** 0.94 g/cm³
- **Relative density** Not determined.
- **Vapour density** Not determined.

- **9.2 Other information**
- **Appearance:**
- **Form:** Fluid

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· **Important information on protection of health and environment, and on safety.**

- | | |
|-------------------------|-----------------|
| · Ignition temperature: | Not determined. |
| · Explosive properties: | Not determined. |
| · Molecular weight | 73.1 g/mol |
| · Change in condition | |
| · Evaporation rate | Not determined. |

· **Information with regard to physical hazard classes**

- | | |
|---|------------------------------|
| · Explosives | Void |
| · Flammable gases | Void |
| · Aerosols | Void |
| · Oxidising gases | Void |
| · Gases under pressure | Void |
| · Flammable liquids | Flammable liquid and vapour. |
| · Flammable solids | Void |
| · Self-reactive substances and mixtures | Void |
| · Pyrophoric liquids | Void |
| · Pyrophoric solids | Void |
| · Self-heating substances and mixtures | Void |
| · Substances and mixtures, which emit flammable gases in contact with water | Void |
| · Oxidising liquids | Void |
| · Oxidising solids | Void |
| · Organic peroxides | Void |
| · Corrosive to metals | Void |
| · Desensitised explosives | Void |

SECTION 10: Stability and reactivity

- **10.1 Reactivity** No further relevant information available.
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:**
Warming. A range from approx. 15 Kelvin below the flash point is to be rated as critical.
- **10.3 Possibility of hazardous reactions**
Violent reactions possible with:
strong oxidants
reducing agents
nonmetallic oxides
alkali metals
metallic oxides
halogens
- **10.4 Conditions to avoid** No further relevant information available.
- **10.5 Incompatible materials:**
strong oxidants
halogens
- **10.6 Hazardous decomposition products:** In the event of fire: See chapter 5

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SECTION 11: Toxicological information

- **11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008**
- **Acute toxicity** Harmful in contact with skin or if inhaled.
- **LD/LC50 values relevant for classification:**
Quantitative data on the toxicological effect of this product are not available.

Components	Type	Value	Species
Oral	LD50	3,010 mg/kg	(rat)
Dermal	LD50	1,500 mg/kg	(rabbit)
Inhalative	LC50/4 h	11 mg/l	(ATE)

- **Primary irritant effect:**
- **Skin corrosion/irritation** Based on available data, the classification criteria are not met.
- **Serious eye damage/irritation** Causes serious eye irritation.
- **After inhalation:** No irritant effect.
- **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.
- **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
- **Carcinogenicity** Based on available data, the classification criteria are not met.
- **Reproductive toxicity**
May damage the unborn child.

NOAEL (Fertility) 9-15 mg/kg bw/day (rat)

- **STOT-single exposure** Based on available data, the classification criteria are not met.
- **STOT-repeated exposure** Based on available data, the classification criteria are not met.
- **Aspiration hazard** Based on available data, the classification criteria are not met.
- **11.2 Information on other hazards**
- **Endocrine disrupting properties** Substance is not listed.

SECTION 12: Ecological information

- **12.1 Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **12.2 Persistence and degradability** Easily biodegradable
- **12.3 Bioaccumulative potential**
Due to the distribution coefficient n-octanol/water an accumulation in organisms is not expected.
- **12.4 Mobility in soil** No further relevant information available.
- **12.5 Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **12.6 Endocrine disrupting properties**
The product does not contain substances with endocrine disrupting properties.
- **12.7 Other adverse effects**
- **Additional ecological information:**
- **General notes:**
Do not allow product to reach ground water, water course or sewage system.
Water hazard class 2 (German Regulation) (Assessment by list): hazardous for water
Danger to drinking water if even small quantities leak into the ground.

SECTION 13: Disposal considerations

- **13.1 Waste treatment methods**
- **Recommendation**
Chemicals must be disposed of in compliance with the respective national regulations.

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Must not be disposed together with household garbage. Do not allow product to reach sewage system.

· **Uncleaned packaging:**

· **Recommendation:**

Disposal must be made according to official regulations.

Packagings that may not be cleansed are to be disposed of in the same manner as the product.

SECTION 14: Transport information

· **14.1 UN number or ID number**

· **ADR, IMDG, IATA** UN2265

· **14.2 UN proper shipping name**

· **ADR, IMDG, IATA** N,N-DIMETHYLFORMAMIDE

· **14.3 Transport hazard class(es)**

· **ADR**



· **Class** 3 (F1) Flammable liquids.

· **Label** 3

· **IMDG, IATA**



· **Class** 3 Flammable liquids.

· **Label** 3

· **14.4 Packing group**

· **ADR, IMDG, IATA** III

· **14.5 Environmental hazards:**

Not applicable.

· **14.6 Special precautions for user**

Warning: Flammable liquids.

· **Hazard identification number (Kemler code):** 30

· **EMS Number:** F-E,S-D

· **Stowage Category** A

· **14.7 Maritime transport in bulk according to IMO instruments**

Not applicable.

· **Transport/Additional information:**

· **ADR**

· **Limited quantities (LQ)** 5L

· **Excepted quantities (EQ)** Code: E1

Maximum net quantity per inner packaging: 30 ml

Maximum net quantity per outer packaging: 1000 ml

· **Transport category** 3

· **Tunnel restriction code** D/E

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· IMDG	
· Limited quantities (LQ)	5L
· Excepted quantities (EQ)	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· UN "Model Regulation":	UN 2265 N,N-DIMETHYLFORMAMIDE, 3, III

SECTION 15: Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Directive 2012/18/EU**
- **Named dangerous substances - ANNEX I** Substance is not listed.
- **Seveso category P5c FLAMMABLE LIQUIDS**
- **Qualifying quantity (tonnes) for the application of lower-tier requirements** 5,000 t
- **Qualifying quantity (tonnes) for the application of upper-tier requirements** 50,000 t
- **REGULATION (EU) 2019/1021 on persistent organic pollutants (POP)** Substance is not listed.
- **REGULATION (EC) No 1907/2006 ANNEX XVII** Conditions of restriction: 3, 30, 40, 72, 75, 76
- **DIRECTIVE 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment – Annex II**
Substance is not listed.
- **REGULATION (EU) 2019/1148**
- **Annex I - RESTRICTED EXPLOSIVES PRECURSORS (Upper limit value for the purpose of licensing under Article 5(3))**
Substance is not listed.
- **Annex II - REPORTABLE EXPLOSIVES PRECURSORS** Substance is not listed.
- **Regulation (EC) No 273/2004 on drug precursors** Substance is not listed.
- **Regulation (EC) No 111/2005 laying down rules for the monitoring of trade between the Community and third countries in drug precursors**
Substance is not listed.
- **REGULATION (EU) 2024/590 on substances that deplete the ozone layer** Substance is not listed.
- **National regulations:**
- **Other regulations, limitations and prohibitive regulations**

· **Substances of very high concern (SVHC) according to REACH, Article 57**

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- **15.2 Chemical safety assessment:** A Chemical Safety Assessment has been carried out.

SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Date of previous version:** 24.04.2025
- **Version number of previous version:** 9.04
- **Abbreviations and acronyms:**

ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

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DNEL: Derived No-Effect Level (REACH)
 PNEC: Predicted No-Effect Concentration (REACH)
 LC50: Lethal concentration, 50 percent
 LD50: Lethal dose, 50 percent
 PBT: Persistent, Bioaccumulative and Toxic
 SVHC: Substances of Very High Concern
 vPvB: very Persistent and very Bioaccumulative
 ATE: Acute toxicity estimate values
 Flam. Liq. 3: Flammable liquids – Category 3
 Acute Tox. 4: Acute toxicity – Category 4
 Eye Irrit. 2: Serious eye damage/eye irritation – Category 2
 Repr. 1B: Reproductive toxicity – Category 1B

· * **Data compared to the previous version altered.**

Annex: Exposure scenario

- **Short title of the exposure scenario** Formulation and packing/repacking of substances and mixtures
- **Sector of Use**
 - SU3 Industrial uses: Uses of substances as such or in preparations at industrial sites
 - SU9 Manufacture of fine chemicals
 - SU10 Formulation [mixing] of preparations and/or re-packaging (excluding alloys)
 - SU3 Industrial uses: Uses of substances as such or in preparations at industrial sites
 - SU10 Formulation [mixing] of preparations and/or re-packaging (excluding alloys)
- **Product category** PC19 Intermediate
- **Process category**
 - PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions.
 - PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions
 - PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition
 - PROC4 Chemical production where opportunity for exposure arises
 - PROC5 Mixing or blending in batch processes
 - PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities
 - PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities
 - PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)
 - PROC15 Use as laboratory reagent
- **Environmental release category**
 - ERC2 Formulation into mixture
 - ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article)
 - ERC6a Use of intermediate
- **Description of the activities / processes covered in the Exposure Scenario**
See section 1 of the annex to the Safety Data Sheet.
- **Conditions of use**
- **Duration and frequency** 5 workdays/week.
- **Physical parameters**
- **Physical state** Fluid
- **Concentration of the substance in the mixture** Raw material.
- **Used amount per time or activity** ≤ 1 tons per day
- **Other operational conditions**
- **Other operational conditions affecting environmental exposure** No special measures required.
- **Other operational conditions affecting worker exposure**
Avoid contact with eyes.
Avoid contact with the skin.
Do not breathe gas/vapour/aerosol.
- **Other operational conditions affecting consumer exposure** No special measures required.

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- **Other operational conditions affecting consumer exposure during the use of the product**
Not applicable.
- **Risk management measures**
- **Worker protection**
- **Organisational protective measures** No special measures required.
- **Technical protective measures** Ensure that suitable extractors are available on processing machines
- **Personal protective measures**
Do not inhale gases / fumes / aerosols.
Avoid contact with the skin.
Avoid contact with the eyes.
Pregnant women should strictly avoid inhalation or skin contact.
Tightly sealed goggles
Filter A
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.
Use suitable respiratory protective device only when aerosol or mist is formed.
Protective gloves
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
- **Measures for consumer protection** Ensure adequate labelling.
- **Environmental protection measures**
- **Water** No special measures required.
- **Disposal measures** Ensure that waste is collected and contained.
- **Disposal procedures**
Must not be disposed together with household garbage. Do not allow product to reach sewage system.
- **Waste type** Partially emptied and uncleaned packaging
- **Exposure estimation**
- **Consumer** Not relevant for this Exposure Scenario.
- **Guidance for downstream users** No further relevant information available.