# Safety Data Sheet

According to Annex II to REACH - Regulation 2015/830

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

### 1.1. Product identifier

Product name **S-Bond Deck**

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

Intended use **One component, methoxy silane-based, elastic adhesive for generic industrial applications.**

| Identified Uses | Industrial | Professional | Consumer |
|---|---|---|---|
| **SEALANTS AND ADHESIVES FORMULATIONS IN INDUSTRY** | **SU: 10.<br>ERC: 2.<br>PROC: 3, 4, 5, 8a, 8b, 9.<br>PC: 1.** | - | - |
| **INDUSTRIAL APPLICATIONS OF SEALANTS AND ADHESIVES** | **SU: 17, 19.<br>ERC: 5, 8b.<br>PROC: 10, 8a, 8b.<br>PC: 1.** | **SU: 17, 19.<br>ERC: 5, 8b.<br>PROC: 10, 8a, 8b.<br>PC: 1.** | - |
| **CHEMICAL SUBSTANCE USE IN LABORATORY, INDUSTRIAL** | **PROC: 15.<br>PC: 1, 21.** | - | - |

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

Name **N.P.T. S.R.L. A SOCIO UNICO**
Full address **via Guido Rossa 2**
District and Country **40053 Valsamoggia - Loc. Crespellano (BO)**
**Italy**
**Tel. +39 051 969109**
**Fax +39 051 969837**

e-mail address of the competent person responsible for the Safety Data Sheet **infoSDS@nptsrl.com**

### 1.4. Emergency telephone number

For urgent inquiries refer to **Laboratories and manufactory plant - Gropello Cairoli (PV)**
**+39 0382 815132 (avaiable from Monday to Friday, only in the following office hours: 8.30-12.30, 13.30-17.00).**

## SECTION 2. Hazards identification

### 2.1. Classification of the substance or mixture

The product is not classified as hazardous pursuant to the provisions set forth in EC Regulation 1272/2008 (CLP).
However, since the product contains hazardous substances in concentrations such as to be declared in section no. 3, it requires a safety data sheet with appropriate information, compliant to (EU) Regulation 2015/830.

Hazard classification and indication: --

### 2.2. Label elements

Hazard labelling pursuant to EC Regulation 1272/2008 (CLP) and subsequent amendments and supplements.

## SECTION 2. Hazards identification ... / >>

Hazard pictograms: --

Signal words: --

Hazard statements:

**EUH210** Safety data sheet available on request.

**EUH208** Contains: N-[3-(TRIMETHOXYSILYL)PROPYL]ETHYLENEDIAMINE.
May produce an allergic reaction.

Precautionary statements: --

### 2.3. Other hazards

On the basis of available data, the product does not contain any PBT or vPvB in percentage greater than 0,1%.

## SECTION 3. Composition/information on ingredients

### 3.2. Mixtures

Contains:

| Identification | x = Conc. % | Classification 1272/2008 (CLP) |
|---|---|---|
| **TRIETHYLPHOSPHATE** | | |
| *CAS* *78-40-0* | 4,5 ≤ x < 5 | **Acute Tox. 4 H302, Eye Irrit. 2 H319** |
| *EC* *201-114-5* | | |
| *INDEX* *015-013-00-7* | | |
| *Reg. no.* *01-2119492852-28-0000* | | |
| **N-[3-(TRIMETHOXYSILYL)PROPYL]ETHYLENEDIAMINE.** | | |
| *CAS* *1760-24-3* | 0,89 ≤ x < 1 | **Acute Tox. 4 H332, STOT RE 2 H373, Eye Dam. 1 H318, Skin Sens. 1 H317** |
| *EC* *217-164-6* | | |
| *INDEX* | | |
| *Reg. no.* *01-2119970215-39-XXXX* | | |

The full wording of hazard (H) phrases is given in section 16 of the sheet.

## SECTION 4. First aid measures

### 4.1. Description of first aid measures

EYES: remove immediately with a clean cloth or paper and wash affected area with soap and water.
SKIN: take off contaminated clothing. Wash immediately with plenty of water. If irritation persists, consult a doctor. Wash contaminated clothing before reuse.
INHALATION: In case of feeling unwell remove patient to fresh air and seek medical attention if breathing difficulty succeeding.
INGESTION: eject the product and rinse mouth with water

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

Information not available

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

Consult a doctor if symptoms are severe or in the case of persistent irritation of the skin.

## SECTION 5. Firefighting measures

### 5.1. Extinguishing media

SUITABLE EXTINGUISHING EQUIPMENT
The extinguishing equipment should be of the conventional kind: carbon dioxide, foam, powder and water spray.
UNSUITABLE EXTINGUISHING EQUIPMENT
None in particular.

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

HAZARDS CAUSED BY EXPOSURE IN THE EVENT OF FIRE
Do not breathe combustion products.

## SECTION 5. Firefighting measures ... / >>

### 5.3. Advice for firefighters

GENERAL INFORMATION
Use jets of water to cool the containers to prevent product decomposition and the development of substances potentially hazardous for health. Always wear full fire prevention gear. Collect extinguishing water to prevent it from draining into the sewer system. Dispose of contaminated water used for extinction and the remains of the fire according to applicable regulations.
SPECIAL PROTECTIVE EQUIPMENT FOR FIRE-FIGHTERS
Normal fire fighting clothing i.e. fire kit (BS EN 469), gloves (BS EN 659) and boots (HO specification A29 and A30) in combination with self-contained open circuit positive pressure compressed air breathing apparatus (BS EN 137).

## SECTION 6. Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Block the leakage if there is no hazard.
Wear suitable protective equipment (including personal protective equipment referred to under Section 8 of the safety data sheet) to prevent any contamination of skin, eyes and personal clothing. These indications apply for both processing staff and those involved in emergency procedures.

### 6.2. Environmental precautions

The product must not penetrate into the sewer system or come into contact with surface water or ground water.

### 6.3. Methods and material for containment and cleaning up

Collect the leaked product into a suitable container. Evaluate the compatibility of the container to be used, by checking section 10. Absorb the remainder with inert absorbent material.
Make sure the leakage site is well aired. Contaminated material should be disposed of in compliance with the provisions set forth in point 13.

### 6.4. Reference to other sections

Any information on personal protection and disposal is given in sections 8 and 13.

## SECTION 7. Handling and storage

### 7.1. Precautions for safe handling

Before handling the product, consult all the other sections of this material safety data sheet. Avoid leakage of the product into the environment. Do not eat, drink or smoke during use. Remove any contaminated clothes and personal protective equipment before entering places in which people eat.

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

Store only in the original container. Store the containers sealed, in a well ventilated place, away from direct sunlight. Keep containers away from any incompatible materials, see section 10 for details.

Storage class TRGS 510 (Germany): 10

### 7.3. Specific end use(s)

Information not available

## SECTION 8. Exposure controls/personal protection

### 8.1. Control parameters

Regulatory References:

| | | |
|---|---|---|
| DEU | Deutschland | TRGS 900 (Fassung 31.1.2018 ber.) - Liste der Arbeitsplatzgrenzwerte und Kurzzeitwerte |
| ESP | España | INSHT - Límites de exposición profesional para agentes químicos en España 2017 |
| FRA | France | JORF n°0109 du 10 mai 2012 page 8773 texte n° 102 |
| GBR | United Kingdom | EH40/2005 Workplace exposure limits |
| GRC | Ελλάδα | ΕΦΗΜΕΡΙΣ ΤΗΣ ΚΥΒΕΡΝΗΣΕΩΣ -ΤΕΥΧΟΣ ΠΡΩΤΟ Αρ. Φύλλου 19 - 9 Φεβρουαρίου 2012 |
| HRV | Hrvatska | NN13/09 - Ministarstvo gospodarstva, rada i poduzetništva |
| ITA | Italia | Decreto Legislativo 9 Aprile 2008, n.81 |
| NLD | Nederland | Databank of the social and Economic Concil of Netherlands (SER) Values, AF 2011:18 |
| POL | Polska | ROZPORZĄDZENIE MINISTRA PRACY I POLITYKI SPOŁECZNEJ z dnia 7 czerwca 2017 r |
| PRT | Portugal | Ministério da Economia e do Emprego Consolida as prescrições mínimas em matéria de protecção dos trabalhadores contra os riscos para a segurança e a saúde devido à exposição a agentes |

## SECTION 8. Exposure controls/personal protection ... / >>

| | | |
|---|---|---|
| | | químicos no trabalho - Diaro da Republica I 26; 2012-02-06 |
| SWE | Sverige | Occupational Exposure Limit Values, AF 2011:18 |
| EU | OEL EU | Directive (EU) 2017/2398; Directive (EU) 2017/164; Directive 2009/161/EU; Directive 2006/15/EC; Directive 2004/37/EC; Directive 2000/39/EC; Directive 91/322/EEC. |
| | TLV-ACGIH | ACGIH 2018 |

**TRIETHYLPHOSPHATE**

**Predicted no-effect concentration - PNEC**

| | | |
|---|---|---|
| Normal value in fresh water | 0,632 | mg/l |
| Normal value in marine water | 0,0632 | mg/l |
| Normal value for fresh water sediment | 4,83 | mg/kg/d |
| Normal value of STP microorganisms | 298,5 | mg/l |
| Normal value for the terrestrial compartment | 0,596 | mg/kg/d |

**Health - Derived no-effect level - DNEL / DMEL**

| | Effects on consumers | | | | Effects on workers | | | |
|---|---|---|---|---|---|---|---|---|
| Route of exposure | Acute local | Acute systemic | Chronic local | Chronic systemic | Acute local | Acute systemic | Chronic local | Chronic systemic |
| Oral | VND | 13,3 mg/kg/d | VND | 1,66 mg/kg/d | | | | |
| Inhalation | VND | 23,12 mg/m3 | VND | 2,89 mg/m3 | VND | 93,6 mg/m3 | VND | 11,7 mg/m3 |
| Skin | VND | 13.3 mg/m3 | VND | 1,66 mg/m3 | VND | 26,6 mg/kg/d | VND | 3,33 mg/kg/d |

**DIISONONYL PHTHALATE**

**Threshold Limit Value**

| Type | Country | TWA/8h | | STEL/15min | |
|---|---|---|---|---|---|
| | | mg/m3 | ppm | mg/m3 | ppm |
| WEL | GBR | 5 | | | |

**N-[3-(TRIMETHOXYSILYL)PROPYL]ETHYLENEDIAMINE.**

**Predicted no-effect concentration - PNEC**

| | | |
|---|---|---|
| Normal value in fresh water | 0,062 | mg/l |
| Normal value in marine water | 0,0062 | mg/l |
| Normal value for fresh water sediment | 0,22 | mg/kg |
| Normal value for marine water sediment | 0,022 | mg/kg |
| Normal value for water, intermittent release | 0,62 | mg/l |
| Normal value of STP microorganisms | 25 | mg/l |
| Normal value for the terrestrial compartment | 0,0085 | mg/kg |

**Health - Derived no-effect level - DNEL / DMEL**

| | Effects on consumers | | | | Effects on workers | | | |
|---|---|---|---|---|---|---|---|---|
| Route of exposure | Acute local | Acute systemic | Chronic local | Chronic systemic | Acute local | Acute systemic | Chronic local | Chronic systemic |
| Inhalation | NPI | | NPI | 8,7 mg/m3 | NPI | | NPI | 35,3 mg/m3 |
| Skin | | 17 mg/kg bw/d | | 2,5 mg/kg bw/d | | 5 mg/kg bw/d | | 5 mg/kg bw/d |

## SECTION 8. Exposure controls/personal protection ... / >>

**VINYLTRIMETHOXYSILANE.**

**Predicted no-effect concentration - PNEC**

| | | |
|---|---|---|
| Normal value in fresh water | 0,34 | mg/l |
| Normal value in marine water | 0,034 | mg/l |
| Normal value for fresh water sediment | 0,27 | mg/kg |
| Normal value for water, intermittent release | 3,4 | mg/l |
| Normal value of STP microorganisms | 110 | mg/l |
| Normal value for the terrestrial compartment | 0,046 | mg/kg |

**Health - Derived no-effect level - DNEL / DMEL**

| | Effects on consumers | | | | Effects on workers | | | |
|---|---|---|---|---|---|---|---|---|
| Route of exposure | Acute local | Acute systemic | Chronic local | Chronic systemic | Acute local | Acute systemic | Chronic local | Chronic systemic |
| Oral | | | VND | 0,3 mg/kg/d | | | | |
| Inhalation | VND | 93,4 mg/m3 | VND | 1,04 mg/m3 | | | VND | 4,9 mg/m3 |
| Skin | VND | 26,9 mg/kg/d | VND | 0,3 mg/kg/d | | | VND | 0,69 mg/kg/d |

**METHANOL**

**Threshold Limit Value**

| Type | Country | TWA/8h | | STEL/15min | | |
|---|---|---|---|---|---|---|
| | | mg/m3 | ppm | mg/m3 | ppm | |
| AGW | DEU | 270 | 200 | 1080 | 800 | SKIN |
| MAK | DEU | 270 | 200 | 1080 | 800 | SKIN |
| VLA | ESP | 266 | 200 | | | SKIN |
| VLEP | FRA | 260 | 200 | 1300 | 1000 | SKIN |
| WEL | GBR | 266 | 200 | 333 | 250 | SKIN |
| TLV | GRC | 260 | 200 | 325 | 250 | |
| GVI | HRV | 260 | 200 | | | SKIN |
| VLEP | ITA | 260 | 200 | | | SKIN |
| OEL | NLD | 133 | 100 | | | SKIN |
| NDS | POL | 100 | | 300 | | |
| VLE | PRT | 260 | 200 | | | SKIN |
| MAK | SWE | 250 | 200 | 350 | 250 | SKIN |
| OEL | EU | 260 | 200 | | | SKIN |
| TLV-ACGIH | | 262 | 200 | 328 | 250 | |

Legend:
(C) = CEILING ; INHAL = Inhalable Fraction ; RESP = Respirable Fraction ; THORA = Thoracic Fraction.
VND = hazard identified but no DNEL/PNEC available ; NEA = no exposure expected ; NPI = no hazard identified.

### 8.2. Exposure controls

As the use of adequate technical equipment must always take priority over personal protective equipment, make sure that the workplace is well aired through effective local aspiration.
When choosing personal protective equipment, ask your chemical substance supplier for advice.
Personal protective equipment must be CE marked, showing that it complies with applicable standards.
HAND PROTECTION
Protect your hands with work gloves, category III (ref. standard EN 374). For the final choice of material you need to assess the type of use. In case of contact for the short term or as protection against splashes, use gloves made of nitrile (0.3mm thickness, permeation time >480 min.). In the event of continued exposure use butyl rubber gloves (0.4mm thickness, permeation time> 480 min.). Contaminated gloves should be removed.
SKIN PROTECTION
Wear category I professional long-sleeved overalls and safety footwear (see Directive 89/686/EEC and standard EN ISO 20344). Wash body with soap and water after removing protective clothing.
EYE PROTECTION
Wear airtight protective goggles (see standard EN 166).

RESPIRATORY PROTECTION
In case of exceeding the threshold value (eg, TLV-TWA) of the substance or one or more of the substances present in the product, it is advisable to wear a mask with filter type A for organic vapors, the class (1, 2 or 3) must be chosen according to the limit concentration of use (1000, 5000 or 10000 ppm) (ref. standard EN 14387).
ENVIRONMENTAL EXPOSURE CONTROLS
The emissions generated by manufacturing processes, including those generated by ventilation equipment, should be checked to ensure compliance with environmental standards.

## SECTION 9. Physical and chemical properties

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

| | |
|---|---|
| Appearance | paste |
| Colour | black |
| Odour | typical |
| Odour threshold | Not available |
| pH | Not available |
| Melting point / freezing point | Not available |
| Initial boiling point | Not available |
| Boiling range | Not available |
| Flash point | Not applicable |
| Evaporation rate | Not available |
| Flammability (solid, gas) | not flammable |
| Lower inflammability limit | Not available |
| Upper inflammability limit | Not available |
| Lower explosive limit | Not available |
| Upper explosive limit | Not available |
| Vapour pressure | Not available |
| Vapour density | Not available |
| Relative density | 1,61 |
| Solubility | Not available |
| Partition coefficient: n-octanol/water | Not available |
| Auto-ignition temperature | Not available |
| Decomposition temperature | Not available |
| Viscosity | 17000 - 26000 cps |
| Explosive properties | Not available |
| Oxidising properties | Not available |

### 9.2. Other information

VOC (Directive 2010/75/EC) : 4,99 % - 152,47 g/litre

## SECTION 10. Stability and reactivity

### 10.1. Reactivity

Product reacts slowly with water (ambient humidity) turning into a rubbery solid and producing METHANOL.

### 10.2. Chemical stability

Product stable under normal conditions of use and storage.

### 10.3. Possibility of hazardous reactions

Under conditions of normal use and storage not hazardous reactions are foreseeable.

### 10.4. Conditions to avoid

Humidity.

### 10.5. Incompatible materials

Water.

### 10.6. Hazardous decomposition products

Carbon monoxide, carbon dioxide, smoke, oxides of nitrogen.

## SECTION 11. Toxicological information

In the absence of experimental data for the product itself, health hazards are evaluated according to the properties of the substances it contains, using the criteria specified in the applicable regulation for classification.
It is therefore necessary to take into account the concentration of the individual hazardous substances indicated in section 3, to evaluate the toxicological effects of exposure to the product.

## SECTION 11. Toxicological information ... / >>

### 11.1. Information on toxicological effects

Metabolism, toxicokinetics, mechanism of action and other information

Information not available

Information on likely routes of exposure

Information not available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Information not available

Interactive effects

Information not available

ACUTE TOXICITY

| | |
|---|---|
| LC50 (Inhalation) of the mixture: | Not classified (no significant component) |
| LD50 (Oral) of the mixture: | >2000 mg/kg |
| LD50 (Dermal) of the mixture: | Not classified (no significant component) |

N-[3-(TRIMETHOXYSILYL)PROPYL]ETHYLENEDIAMINE.

| | |
|---|---|
| LD50 (Oral) | 2295 mg/kg Rattus sp. |
| LD50 (Dermal) | > 2000 mg/kg Oryctolagus sp. |
| LC50 (Inhalation) | 1,49 mg/l/4h Rattus sp. |

TRIETHYLPHOSPHATE

| | |
|---|---|
| LD50 (Oral) | 1600 mg/kg Rattus sp. |
| LD50 (Dermal) | > 20000 mg/kg Oryctolagus sp. |
| LC50 (Inhalation) | > 8817 mg/m3 Rattus sp. |

SKIN CORROSION / IRRITATION

Does not meet the classification criteria for this hazard class

SERIOUS EYE DAMAGE / IRRITATION

Does not meet the classification criteria for this hazard class

RESPIRATORY OR SKIN SENSITISATION

May produce an allergic reaction.
Contains:
N-[3-(TRIMETHOXYSILYL)PROPYL]ETHYLENEDIAMINE.

GERM CELL MUTAGENICITY

Does not meet the classification criteria for this hazard class

CARCINOGENICITY

Does not meet the classification criteria for this hazard class

REPRODUCTIVE TOXICITY

Does not meet the classification criteria for this hazard class

STOT - SINGLE EXPOSURE

Does not meet the classification criteria for this hazard class

STOT - REPEATED EXPOSURE

Does not meet the classification criteria for this hazard class

ASPIRATION HAZARD

Does not meet the classification criteria for this hazard class

## SECTION 12. Ecological information

Use this product according to good working practices. Avoid littering. Inform the competent authorities, should the product reach waterways or contaminate soil or vegetation.

**12.1. Toxicity**

N-[3-(TRIMETHOXYSILYL)PROPYL]ETHYLENEDIAMINE.

| | |
|---|---|
| LC50 - for Fish | 344 mg/l/96h Brachydanio rerio |
| EC50 - for Crustacea | 81 mg/l/48h Daphnia magna |
| EC50 - for Algae / Aquatic Plants | 126 mg/l/72h Scenedesmus subspicatus |

TRIETHYLPHOSPHATE

| | |
|---|---|
| LC50 - for Fish | > 100 mg/l/96h Danio rerio |
| EC50 - for Algae / Aquatic Plants | 900 mg/l/72h Desmodesmus subspicatus |
| Chronic NOEC for Crustacea | 31,6 mg/l Daphnia magna |

**12.2. Persistence and degradability**

N-[3-(TRIMETHOXYSILYL)PROPYL]ETHYLENEDIAMINE.
NOT rapidly degradable

**12.3. Bioaccumulative potential**

Information not available

**12.4. Mobility in soil**

Information not available

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

On the basis of available data, the product does not contain any PBT or vPvB in percentage greater than 0,1%.

**12.6. Other adverse effects**

Information not available

## SECTION 13. Disposal considerations

**13.1. Waste treatment methods**

Reuse, when possible. Neat product residues should be considered special non-hazardous waste.
Disposal must be performed through an authorised waste management firm, in compliance with national and local regulations.
CONTAMINATED PACKAGING
Contaminated packaging must be recovered or disposed of in compliance with national waste management regulations.

## SECTION 14. Transport information

The product is not dangerous under current provisions of the Code of International Carriage of Dangerous Goods by Road (ADR) and by Rail (RID), of the International Maritime Dangerous Goods Code (IMDG), and of the International Air Transport Association (IATA) regulations.

**14.1. UN number**

Not applicable

**14.2. UN proper shipping name**

Not applicable

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

Not applicable

## SECTION 14. Transport information ... / >>

**14.4. Packing group**

Not applicable

**14.5. Environmental hazards**

Not applicable

**14.6. Special precautions for user**

Not applicable

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

Information not relevant

## SECTION 15. Regulatory information

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

Seveso Category - Directive 2012/18/EC: None

Restrictions relating to the product or contained substances pursuant to Annex XVII to EC Regulation 1907/2006
Contained substance
Point 52 DIISONONYL PHTHALATE

Substances in Candidate List (Art. 59 REACH)
On the basis of available data, the product does not contain any SVHC in percentage greater than 0,1%.

Substances subject to authorisation (Annex XIV REACH)
None

Substances subject to exportation reporting pursuant to (EC) Reg. 649/2012:
None

Substances subject to the Rotterdam Convention:
None

Substances subject to the Stockholm Convention:
None

Healthcare controls
Information not available

German regulation on the classification of substances hazardous to water (AwSV, vom 18. April 2017)
WGK 1: Low hazard to waters

**15.2. Chemical safety assessment**

No chemical safety assessment has been processed for the mixture and the substances it contains.

## SECTION 16. Other information

Text of hazard (H) indications mentioned in section 2-3 of the sheet:

| | |
|---|---|
| **Acute Tox. 4** | Acute toxicity, category 4 |
| **STOT RE 2** | Specific target organ toxicity - repeated exposure, category 2 |
| **Eye Dam. 1** | Serious eye damage, category 1 |
| **Eye Irrit. 2** | Eye irritation, category 2 |
| **Skin Sens. 1** | Skin sensitization, category 1 |
| **H302** | Harmful if swallowed. |
| **H332** | Harmful if inhaled. |
| **H373** | May cause damage to organs through prolonged or repeated exposure. |
| **H318** | Causes serious eye damage. |
| **H319** | Causes serious eye irritation. |
| **H317** | May cause an allergic skin reaction. |
| **EUH210** | Safety data sheet available on request. |

## SECTION 16. Other information ... / >>

Use descriptor system:

| | | |
|---|---|---|
| **ERC** | 2 | Formulation of preparations |
| **ERC** | 5 | Industrial use resulting in inclusion into or onto a matrix |
| **ERC** | 8b | Wide dispersive indoor use of reactive substances in open systems |
| **PC** | 1 | Adhesives, sealants |
| **PC** | 21 | Laboratory chemicals |
| **PROC** | 10 | Roller application or brushing |
| **PROC** | 15 | Use as laboratory reagent |
| **PROC** | 3 | Use in closed batch process (synthesis or formulation) |
| **PROC** | 4 | Use in batch and other process (synthesis) where opportunity for exposure arises |
| **PROC** | 5 | Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact) |
| **PROC** | 8a | Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities |
| **PROC** | 8b | Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities |
| **PROC** | 9 | Transfer of substance or preparation into small containers (dedicated filling line, including weighing) |
| **SU** | 10 | Formulation [mixing] of preparations and/or re-packaging (excluding alloys) |
| **SU** | 17 | General manufacturing, e.g. machinery, equipment, vehicles, other transport equipment |
| **SU** | 19 | Building and construction work |

LEGEND:
- ADR: European Agreement concerning the carriage of Dangerous goods by Road
- CAS NUMBER: Chemical Abstract Service Number
- CE50: Effective concentration (required to induce a 50% effect)
- CE NUMBER: Identifier in ESIS (European archive of existing substances)
- CLP: EC Regulation 1272/2008
- DNEL: Derived No Effect Level
- EmS: Emergency Schedule
- GHS: Globally Harmonized System of classification and labeling of chemicals
- IATA DGR: International Air Transport Association Dangerous Goods Regulation
- IC50: Immobilization Concentration 50%
- IMDG: International Maritime Code for dangerous goods
- IMO: International Maritime Organization
- INDEX NUMBER: Identifier in Annex VI of CLP
- LC50: Lethal Concentration 50%
- LD50: Lethal dose 50%
- OEL: Occupational Exposure Level
- PBT: Persistent bioaccumulative and toxic as REACH Regulation
- PEC: Predicted environmental Concentration
- PEL: Predicted exposure level
- PNEC: Predicted no effect concentration
- REACH: EC Regulation 1907/2006
- RID: Regulation concerning the international transport of dangerous goods by train
- TLV: Threshold Limit Value
- TLV CEILING: Concentration that should not be exceeded during any time of occupational exposure.
- TWA STEL: Short-term exposure limit
- TWA: Time-weighted average exposure limit
- VOC: Volatile organic Compounds
- vPvB: Very Persistent and very Bioaccumulative as for REACH Regulation
- WGK: Water hazard classes (German).

GENERAL BIBLIOGRAPHY
1. Regulation (EC) 1907/2006 (REACH) of the European Parliament
2. Regulation (EC) 1272/2008 (CLP) of the European Parliament
3. Regulation (EU) 790/2009 (I Atp. CLP) of the European Parliament
4. Regulation (EU) 2015/830 of the European Parliament
5. Regulation (EU) 286/2011 (II Atp. CLP) of the European Parliament
6. Regulation (EU) 618/2012 (III Atp. CLP) of the European Parliament
7. Regulation (EU) 487/2013 (IV Atp. CLP) of the European Parliament
8. Regulation (EU) 944/2013 (V Atp. CLP) of the European Parliament
9. Regulation (EU) 605/2014 (VI Atp. CLP) of the European Parliament
10. Regulation (EU) 2015/1221 (VII Atp. CLP) of the European Parliament
11. Regulation (EU) 2016/918 (VIII Atp. CLP) of the European Parliament
12. Regulation (EU) 2016/1179 (IX Atp. CLP)
13. Regulation (EU) 2017/776 (X Atp. CLP)

- The Merck Index. - 10th Edition
- Handling Chemical Safety

## SECTION 16. Other information ... / >>

- INRS - Fiche Toxicologique (toxicological sheet)- Patty - Industrial Hygiene and Toxicology
- N.I. Sax - Dangerous properties of Industrial Materials-7, 1989 Edition
- IFA GESTIS website
- ECHA website
- Database of SDS models for chemicals - Ministry of Health and ISS (Istituto Superiore di Sanità) - Italy

Note for users:
The information contained in the present sheet are based on our own knowledge on the date of the last version. Users must verify the suitability and thoroughness of provided information according to each specific use of the product.
This document must not be regarded as a guarantee on any specific product property.
The use of this product is not subject to our direct control; therefore, users must, under their own responsibility, comply with the current health and safety laws and regulations. The producer is relieved from any liability arising from improper uses.
Provide appointed staff with adequate training on how to use chemical products.

Changes to previous review:
The following sections were modified:
01 / 02 / 03 / 04 / 05 / 07 / 08 / 09 / 11 / 12 / 14 / 15 / 16.