# SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:
Regulation (EC) No. 1907/2006 as amended by Regulation (EU) No. 2020/878, and
Regulation (EC) No. 1272/2008

**Revision date** 19-11-2026 **Revision Number** 1

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

### 1.1. Product identifier

**Product Code** PP00050226

Material number(s): PP00050226

**Product Name** SMARTBATCH-light-WHITE PP00050226-ZT/S

**Other means of identification**

**Substance/mixture** Mixture

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

**Recommended use** For industrial use only

**Uses advised against** None

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

**Supplier**
Avient Luxembourg S.à.r.l.
19 Route de Bastogne, L-9638
Pommerloch, Luxembourg
Product Stewardship
+352 26 90 50 35

For further information, please contact

**E-mail address** SDS.MB.Europe@avient.com

**Company Phone Number** +352 26 90 50 35

### 1.4. Emergency telephone number

Emergency Telephone (Chemtrec 24h) +44 20 3885 0382

| **Poison control center phone number - §45 - (EC)1272/2008** | |
|---|---|
| **Europe** | **112** |
| **Austria** | Austria Poison Information Center: +43 1 406 43 43<br>Emergency phone number: 112 |
| **Belgium** | Belgium Emergency phone number: +32 (0) 70 245 245<br>Emergency phone number: 112 |
| **Bulgaria** | Bulgaria Emergency phone number : Hospital for Active Medical Treatment and Emergency Medicine “N.I.Pirogov”<br>Emergency number/ fax: +359 2 9154 233 |
| **Croatia** | Croatia Emergency phone number: Poison Control Center: +385 (01) 23 48 342<br>Emergency phone number: 112 |

| | |
|---|---|
| **Cyprus** | Cyprus Emergency phone number: Poison Control Center: 1401 |
| **Czech Republic** | Czech Republic<br>Toxicological Information Center (TIS), Clinic of Occupational Medicine: +420 224 919 293 or +420 224 915 402<br>Emergency phone number: 112 |
| **Denmark** | Denmark Emergency phone number: Bispebjerg Hospital: +45 82 12 12 12<br>Emergency phone number: 112 |
| **Estonia** | Estonia Emergency phone number: Poison Information Center: 16662<br>Emergency phone number: 112 |
| **Finland** | Finland Emergency phone number: Poison Information Center: 0800 147 111<br>Emergency phone number: 112 |
| **France** | France: National Poison center phone number (ORFILA) : (33) 1 45 42 59 59<br>24/24-7/7 emergency number : ANGERS: 02 41 48 21 21<br>BORDEAUX: 05 56 96 40 80<br>LILLE: 08 00 59 59 59<br>LYON: 04 72 11 69 11<br>MARSEILLE: 04 91 75 25 25<br>NANCY: 03 83 22 50 50<br>PARIS: 01 40 05 48 48<br>TOULOUSE: 05 61 77 74 47 |
| **Germany** | Germany Emergency phone number: +49 30 19240 (Giftnotruf Berlin) |
| **Greece** | Greece Emergency phone number: Poison Center: +30 210 77 93 777<br>Emergency phone number: 112 |
| **Hungary** | Hungary Emergency phone number: ETTSZ (Health Toxicological Information Service): +36 80 201 199<br>Emergency phone number: 112 |
| **Ireland** | Ireland Emergency phone number: National Poisons Information Centre, Beaumont Hospital: +353 (0)1 809 2166 (from 8.00 to 22.00) |
| **Italy** | Italy Emergency phone number:<br>Bambino Gesù Pediatric Hospital, Rome, Piazza Sant'Onofrio: 06 6859 3726<br>University Hospital Foggia, Viale Luigi Pinto: 800 183 459<br>A. Cardarelli Hospital, Naples, Via A. Cardarelli: 081 545 3333<br>Umberto I Hospital, Rome, Viale del Policlinico: 06 4997 8000<br>A. Gemelli Hospital, Rome, Largo Agostino Gemelli: 06 305 4343<br>Careggi Hospital, Medical Toxicology Unit, Florence, Largo Brambilla: 055 794 7819<br>National Center for Toxicological Information, Pavia, Via Salvatore Maugeri: 0382 24444<br>Niguarda Ca' Granda, Milan, Piazza Maggiore Hospital: 02 6610 1029<br>Giovanni XXII Hospital, Bergamo, Piazza OMS: 00 883 300<br>Verona Integrated Hospital Trust, Piazzale Aristide Stefani 1: 800 011 858<br>Emergency phone number: 112 |
| **Latvia** | Latvia Emergency phone number: Toxicology and Sepsis Clinic, Poison and Drug Information Center: +371 67042473<br>Emergency phone number: 112 |
| **Lithuania** | Lithuania Emergency phone number: Lithuanian Poison Control and Information Center: +370(5) 2362052 or +370 687 53378<br>Emergency phone number: 112 |

| | |
|---|---|
| **Luxembourg** | Luxembourg Emergency phone number: (+352) 8002 5500<br>Emergency phone number: 112 |
| **Malta** | Malta Accident and Emergency Department phone number: 2545 4030 |
| **Netherlands** | Netherlands Emergency phone number: NVIC Poison Center: +31 (0)88 755 8000 (For professionals only in case of acute poisoning). |
| **Norway** | Norway Poison Center Emergency phone number: +47 22 59 13 00 |
| **Poland** | Poland Poison Information Center (Warsaw): +48226196654<br>Pomeranian Center of Toxicology (Gdansk): +48586821939<br>Sosnowiec Poison Center: +48323682210<br>Emergency phone number: 112 |
| **Portugal** | Portugal Emergency phone number: Antivenom Information Center (CIAV): +351 800 250 250<br>Emergency phone number: 112 |
| **Romania** | Romania Emergency phone number: Toxicological Information Center: +40 21 599 2300<br>Emergency phone number: 021 112 |
| **Slovakia** | Slovakia Emergency phone number: National Toxicological Information Center (NTIC): 00421 (0) 2 5477 4166<br>Emergency phone number: 112 |
| **Slovenia** | Slovenia Emergency phone number: 112 |
| **Spain** | Spain Emergency phone number + 34 91 562 04 20 (for toxic emergencies only)<br>Emergency phone number: 112 |
| **Sweden** | Sweden Emergency phone number: 010-456 6700<br>Emergency phone number: 112 |
| **Switzerland** | Switzerland Emergency phone number: 145<br>Outside Switzerland: +41 44 251 51 51 |

## SECTION 2: Hazards identification

This mixture has not been evaluated as a whole for health effects. Information provided on health effects of this product is based on the individual components. However, some vapors or contaminants may be released upon heating and the end-user (fabricator) must take the necessary precautions (mechanical ventilation, respiratory protection, etc.) to protect employees from exposure. See sections 8 and 11 for special precautions.

### 2.1. Classification of the substance or mixture

***Classification according to Regulation (EC) No. 1272/2008 [CLP]***

| | |
|---|---|
| **Specific target organ toxicity (repeated exposure)** | Category 2 - (H373) |

### 2.2. Label elements

This product is marketed in a form that encapsulates the components in a polymer matrix. To the best of our knowledge, the product in this form does not present a significant risk to health by inhalation, ingestion, or skin contact, nor does it present a significant risk to the aquatic environment. Thus, as the substances are embedded in the polymer matrix and are not likely to migrate, labeling of the finished good is not mandatory (according to 1272/2008/EC Article 23d).

Contains 1,6-Hexanediamine, N,N'-bis(2,2,6,6-tetramethyl-4-piperidinyl)-, polymer with 2,4,6-trichloro-1,3,5-triazine, reaction products with 2,4,4-trimethyl-2-pentanamine



**Signal word**
Warning

**Hazard statements**
H373 - May cause damage to organs through prolonged or repeated exposure.

**Precautionary statements**
P260 - Do not breathe dust, fume, gas, mist, vapors and spray.
P314 - Get medical advice and attention if you feel unwell.
P501 - Dispose of contents and container in accordance with local, regional, national, and international regulations as applicable.

**Additional information**
This product requires tactile warnings if supplied to the general public.

### 2.3. Other hazards

**Other hazards** No information available.

**PBT or vPvB properties** The mixture does not contain any substances meeting the PBT or vPvB criteria according to Regulation (EC) No 1907/2006, Annex XIII.

**Endocrine Disruptor Information** The mixture does not contain substances >= 0.1% that have endocrine disrupting properties according to Regulation (EC) No 1907/2006, Article 59(1) or Regulation (EU) 2017/2100 or Regulation (EU) 2018/605.

## SECTION 3: Composition/information on ingredients

### 3.1. Substances

Not applicable

### 3.2. Mixtures

| Chemical name | Weight-% | REACH registration number | EC No. (Index No.) | Classification according to Regulation (EC) No. 1272/2008 [CLP] | Specific concentration limit (SCL) | M-Factor | M-Factor (long-term) | Notes |
|---|---|---|---|---|---|---|---|---|
| Butanedioic acid, dimethyl ester, polymer with 4-hydroxy-2,2,6,6-tetramethyl-1-piperidineethanol (CAS #: 65447-77-0) | 10 - 20% | No data available | - | Aquatic Chronic 3 (H412) | - | - | - | - |
| 1,6-Hexanediamine, | 10 - 20% | No data | - | Acute Tox. 5 (H303) | - | - | - | - |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| N,N'-bis(2,2,6,6-tetramethyl-4-piperidinyl)-, polymer with 2,4,6-trichloro-1,3,5-triazine, reaction products with 2,4,4-trimethyl-2-pentanamine (CAS #: 70624-18-9) | | available | | par STOT RE 2 (H373) par | | | | |

**Full text of H- and EUH-phrases: see section 16**

***Acute Toxicity Estimate***
No information available

This product does not contain candidate substances of very high concern at a concentration >=0.1% (Regulation (EC) No. 1907/2006 (REACH), Article 59).

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

**Inhalation** Move victim to fresh air. Get medical attention immediately if symptoms occur.

**Eye contact** In case of eye contact, remove contact lens and rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. If eye irritation persists: Get medical advice and attention.

**Skin contact** Do not try to remove solidified material from the skin. Wash skin with soap and water. Take off contaminated clothing and wash before reuse. In the case of skin irritation or allergic reactions see a physician.

**Ingestion** Rinse mouth. Do NOT induce vomiting. Get medical attention if symptoms occur.

**Self-protection of the first aider** Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. First aider: Pay attention to self-protection.

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

**Symptoms** No information available.

**Effects of Exposure** May cause damage to organs through prolonged or repeated exposure.

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

**Note to physicians** Treat symptomatically.

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

**Suitable Extinguishing Media** Dry chemical, CO2, water spray or regular foam.

**Unsuitable extinguishing media** Do not use water jetstream.

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

**Specific hazards arising from the chemical** No information available.

**Hazardous combustion products** Decomposition products can include and are not limited to:, Carbon monoxide, Carbon dioxide (CO2), Nitrogen oxides (NOx), Ammonia, Hydrogen chloride, Metal oxides

**5.3. Advice for firefighters**

**Special protective equipment and precautions for fire-fighters** Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protective equipment.

## SECTION 6: Accidental release measures

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

**Personal precautions** Ensure adequate ventilation. Evacuate personnel to safe areas. Special danger of slipping by leaking/spilling product. See section 8 for more information.

**For emergency responders** Use personal protection recommended in Section 8.

**6.2. Environmental precautions**

**Environmental precautions** Prevent entry into waterways, sewers, basements or confined areas. Do not allow to enter into soil/subsoil. See Section 12 for additional Ecological Information.

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

**Methods for containment** Prevent further leakage or spillage if safe to do so.

**Methods for cleaning up** Take up mechanically, placing in appropriate containers for disposal.

**Prevention of secondary hazards** Clean contaminated objects and areas thoroughly observing environmental regulations.

**6.4. Reference to other sections**

**Reference to other sections** See section 8 for more information. See section 13 for more information.

## SECTION 7: Handling and storage

**7.1. Precautions for safe handling**

**Advice on safe handling** Ensure adequate ventilation. Avoid contact with skin and eyes.

**General hygiene considerations** Handle in accordance with good industrial hygiene and safety practice. Do not eat, drink or smoke when using this product. Wash hands before breaks and immediately after handling the product.

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

**Storage Conditions** Keep container tightly closed in a dry and well-ventilated place. Keep cool. Protect from sunlight. Protect from moisture.

**Storage class (TRGS 510)** Storage class 11.

**7.3. Specific end use(s)**

**Risk Management Methods (RMM)** The information required is contained in this Safety Data Sheet.

## SECTION 8: Exposure controls/personal protection

**8.1. Control parameters**

**Exposure Limits** This product, as supplied, contains materials that do not have reportable occupational exposure limits or are not subject to the reporting requirements of the local jurisdiction.

**Biological occupational exposure limits** This product, as supplied, contains materials that do not have reportable biological exposure limits or are not subject to the reporting requirements of the local jurisdiction.

**Information on monitoring procedures** Refer to European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) or equivalent national standard(s). Refer to European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) or equivalent national standard(s). Refer to European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) or equivalent national standard(s).

**Derived No Effect Level (DNEL) - Workers**
**Notes**
**[4]** Systemic health effects.
**[5]** Local health effects.
**[6]** Long term.
**[7]** Short term.

**Derived No Effect Level (DNEL) - General Public**
**Notes**
**[4]** Systemic health effects.
**[6]** Long term.

**Predicted No Effect Concentration (PNEC)** No information available.

**8.2. Exposure controls**

**Engineering controls** Ensure adequate ventilation, especially in confined areas. Apply technical measures to comply with the occupational exposure limits.

**Personal protective equipment**

**Eye/face protection** Wear safety glasses with side shields (or goggles).

**Hand protection** Wear suitable gloves.

**Skin and body protection** Wear suitable protective clothing.

**Respiratory protection** Use appropriate respiratory protection. Consult with an industrial hygienist to determine the appropriate respiratory protection for your specific use of this material.

**Environmental exposure controls** Local authorities should be advised if significant spillages cannot be contained.

## SECTION 9: Physical and chemical properties

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

| | |
|---|---|
| **Appearance** | Granulate Cylindric |
| **Physical state** | Solid |
| **Color** | white |
| **Odor** | Slight |
| **Odor threshold** | No information available |

| Property | Values | Remarks • Method |
|---|---|---|
| **Melting point / freezing point** | No data available | None known |
| **Boiling point or initial boiling point and boiling range** | No data available | |
| **Flammability** | No data available | None known |
| **Lower and upper explosion limit/flammability limit** | | None known |
| **Lower explosion limit** | No data available | |
| **Upper explosion limit** | No data available | |
| **Flash point** | No data available | None known |
| **Autoignition temperature** | No data available | None known |
| **Decomposition temperature** | No data available | None known |
| **SADT (°C)** | No data available | None known |
| **pH** | No data available | None known |
| **pH (as aqueous solution)** | No data available | None known |
| **Kinematic viscosity** | No data available | None known |
| **Dynamic viscosity** | No data available | None known |
| **Solubility** | No data available | None known |
| **Water solubility** | No data available | None known |
| **Partition coefficient n-octanol/water (log value)** | No data available | None known |
| **Vapor pressure** | No data available | None known |
| **Density and/or relative density** | No data available | None known |
| **Bulk density** | No data available | |
| **Liquid Density** | No data available | |
| **Relative vapor density** | No data available | None known |
| **Particle characteristics** | | None known |
| **Particle Size** | No data available | |
| **Particle Size Distribution** | No data available | |

### 9.2. Other information

**9.2.1. Information with regard to physical hazard classes**
No information available

**9.2.2. Other safety characteristics**
No information available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

**Reactivity** No information available.

**10.2. Chemical stability**

**Stability** Stable under recommended storage conditions.

**Explosion data**
**Sensitivity to mechanical impact** None.
**Sensitivity to static discharge** None.

**10.3. Possibility of hazardous reactions**

**Possibility of hazardous reactions** None under normal processing.

**10.4. Conditions to avoid**

**Conditions to avoid** Keep away from open flames, hot surfaces and sources of ignition. static discharge (electrostatic discharge). Storage near to reactive materials. Dust formation. Protect from moisture.

**10.5. Incompatible materials**

**Incompatible materials** Strong oxidizing agents, strong acids, and strong bases.

**10.6. Hazardous decomposition products**

**Hazardous decomposition products** None under normal use conditions.

## SECTION 11: Toxicological information

This mixture has not been evaluated as a whole for health effects. Exposure effects listed are based on existing health data for the individual components which comprise the mixture.

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

**Information on likely routes of exposure**

**Product Information**

**Inhalation** Specific test data for the substance or mixture is not available.

**Eye contact** Specific test data for the substance or mixture is not available.

**Skin contact** Specific test data for the substance or mixture is not available.

**Ingestion** Specific test data for the substance or mixture is not available.

**Symptoms related to the physical, chemical and toxicological characteristics**

**Symptoms** No information available.

**Acute toxicity** Based on available data, the classification criteria are not met.

**Numerical measures of toxicity**

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

| | |
|---|---|
| **Skin corrosion/irritation** | Based on available data, the classification criteria are not met. |
| **Serious eye damage/eye irritation** | Based on available data, the classification criteria are not met. |
| **Respiratory or skin sensitization** | 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** | Based on available data, the classification criteria are not met. |
| **STOT - single exposure** | Based on available data, the classification criteria are not met. |
| **STOT - repeated exposure** | May cause damage to organs through prolonged or repeated exposure. |
| **Aspiration hazard** | Based on available data, the classification criteria are not met. |

**11.2. Information on other hazards**

**11.2.1. Endocrine disrupting properties**

| | |
|---|---|
| **Endocrine disruption for human health** | Based on available data, the classification criteria are not met. |

**11.2.2. Other information**

| | |
|---|---|
| **Other adverse effects** | No information available. |

## SECTION 12: Ecological information

**12.1. Toxicity** Based on available data, the classification criteria are not met.

**12.2. Persistence and degradability** No information available.

**12.3. Bioaccumulative potential** No information available.

**12.4. Mobility in soil** No information available.

**12.5. Results of PBT and vPvB** This product does not contain any substances that are assessed to be a PBT or a vPvB.

**assessment**

**12.6. Endocrine disrupting properties** Based on available data, the classification criteria are not met.

**12.7. Other adverse effects** No information available.

**PMT or vPvM properties** Based on available data, the classification criteria are not met.

## SECTION 13: Disposal considerations

**13.1. Waste treatment methods**

**Waste from residues/unused products** Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

**Contaminated packaging** Do not reuse empty containers.

## SECTION 14: Transport information

**IATA**

| | |
|---|---|
| **14.1 UN number or ID number** | Not regulated |
| **14.2 UN proper shipping name** | Not regulated |
| **14.3 Transport hazard class(es)** | Not regulated |
| **14.4 Packing group** | Not regulated |
| **14.5 Environmental hazards** | Not applicable |
| **14.6 Special precautions for user Special Provisions** | None |

**IMDG**

| | |
|---|---|
| **14.1 UN number or ID number** | Not regulated |
| **14.2 UN proper shipping name** | Not regulated |
| **14.3 Transport hazard class(es)** | Not regulated |
| **14.4 Packing group** | Not regulated |
| **14.5 Environmental hazards** | Not applicable |
| **14.6 Special precautions for user Special Provisions** | None |
| **14.7 Maritime transport in bulk according to IMO instruments** | No information available |

**RID**

| | |
|---|---|
| **14.1 UN number or ID number** | Not regulated |
| **14.2 UN proper shipping name** | Not regulated |
| **14.3 Transport hazard class(es)** | Not regulated |
| **14.4 Packing group** | Not regulated |
| **14.5 Environmental hazards** | Not applicable |
| **14.6 Special precautions for user Special Provisions** | None |

**ADR**

| | |
|---|---|
| **14.1 UN number or ID number** | Not regulated |
| **14.2 UN proper shipping name** | Not regulated |
| **14.3 Transport hazard class(es)** | Not regulated |
| **14.4 Packing group** | Not regulated |
| **14.5 Environmental hazards** | Not applicable |

**14.6 Special precautions for user**
**Special Provisions** None

**ADN**
**14.1 UN number or ID number** Not regulated
**14.2 UN proper shipping name** Not regulated
**14.3 Transport hazard class(es)** Not regulated
**14.4 Packing group** Not regulated
**14.5 Environmental hazard** Not applicable
**14.6 Special precautions for user**
**Special Provisions** None

## SECTION 15: Regulatory information

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

**National regulations**

**Germany**
**Water hazard class (WGK)** slightly hazardous to water (WGK 1)

**European Union**

**Authorizations and/or restrictions on use:**
This product does not contain substances subject to authorization (Regulation (EC) No. 1907/2006 (REACH), Annex XIV). This product does not contain substances subject to restriction (Regulation (EC) No. 1907/2006 (REACH), Annex XVII).

**Regulation (EC) No. 1907/2006 (REACh), Annex XVII, entry number 78 as regards synthetic polymer microplastics (Commission Regulation (EU) 2023/2055):**
The synthetic polymer microparticles supplied are subject to conditions laid down by entry 78 of Annex XVII to Regulation (EC) No 1907/2006 of the European Parliament and of the Council.

| | |
|---|---|
| **Maximum concentration of Synthetic Polymer Microparticles in the substance or mixture:** | 100% |
| **Generic information on the identity of the polymers in the substance or mixture::** | Polymers of propylene or of other olefins, in primary forms. |

**International Inventories**
**TSCA** Complies
**DSL/NDSL** Complies
**ENCS** Not determined
**IECSC** Complies
**KECL** Not determined
**PICCS** Not determined
**AIIC** Complies
**NZIoC** Complies
**TCSI** Complies

**15.2. Chemical safety assessment**

**Chemical Safety Report** No information available

## SECTION 16: Other information

**Full text of any hazard and/or precautionary statements referred to under Sections 2-15**
H303 - May be harmful if swallowed
H373 - May cause damage to organs through prolonged or repeated exposure

H412 - Harmful to aquatic life with long lasting effects
P260 - Do not breathe dust, fume, gas, mist, vapors and spray
P314 - Get medical advice and attention if you feel unwell
P501 - Dispose of contents and container in accordance with local, regional, national, and international regulations as applicable

**Key or legend to abbreviations and acronyms used in the safety data sheet**
*List may include phrases which are not applicable to this product*

| | |
|---|---|
| ACGIH | American Conference of Governmental Industrial Hygienists |
| AIDII | Italian Association of Industrial Hygienists |
| ADN | Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways (Europe) |
| ADR | Agreement concerning the International Carriage of Dangerous Goods by Road (Europe) |
| AIIC | Australian Inventory of Industrial Chemicals |
| ATE | Acute Toxicity Estimate |
| ASTM | American Society for the Testing of Materials |
| bar | Biological Reference Values for Chemical Compounds in the Work Area |
| BAT | Biological tolerance values for occupational exposure |
| BEL | Biological exposure limits |
| bw | Body weight |
| Ceiling | Maximum limit value |
| CLP | Classification, Labelling and Packaging Regulation; Regulation (EC) No 1272/2008 |
| CMR | Carcinogen, Mutagen or Reproductive Toxicant |
| DFG | German Research Foundation |
| DOT | Department of Transportation (United States) |
| DSL | Domestic Substances List (Canada) |
| ECHA | European Chemicals Agency |
| EC Number | European Community number |
| EINECS | European Inventory of Existing Chemical Substances |
| ELINCS | European List of Notified Chemical Substances |
| EmS | Emergency Schedule |
| ENCS | Existing and New Chemical Substances (Japan) |
| EPA | U.S. Environmental Protection Agency |
| EWC | European Waste Codes |
| GHS | Globally Harmonized System |
| 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 |
| ICAO | International Civil Aviation Organization |
| IECSC | Inventory of Existing Chemical Substances in China |
| IMDG | International Maritime Dangerous Goods |
| IMO | International Maritime Organization |
| ISO | International Organization for Standardization |
| KECI | Korean Existing Chemicals Inventory |
| LC50 | Lethal Concentration to 50% of a test population |
| LD50 | Lethal Dose to 50% of a test population (Median Lethal Dose) |
| MAK | Maximum Concentration at the Workplace |
| MAL | Measuring Technical Hygienic Air Needs |
| MARPOL | International Convention for the Prevention of Pollution from Ships |
| MDLPS | Ministry of Labor and Social Policy |
| NDSL | Non-Domestic Substances List (Canada) |
| n.o.s. | Not Otherwise Specified |
| NOAEC | No Observed Adverse Effect Concentration |
| NOAEL | No Observed Adverse Effect Level |
| NOELR | No Observable Effect Loading Rate |
| NZIoC | New Zealand Inventory of Chemicals |

| | |
|---|---|
| OECD | Organization for Economic Cooperation and Development |
| OEL | Occupational exposure limits |
| PBT | Persistent, Bioaccumulative and Toxic substance |
| PICCS | Philippines Inventory of Chemicals and Chemical Substances |
| PMT | Persistent, Mobile and Toxic |
| PPE | Personal protective equipment |
| QSAR | Quantitative Structure Activity Relationship |
| REACH | Registration, Evaluation, Authorization, and Restriction of Chemicals (REACH) Regulation (EC 1907/2006) |
| RID | Agreement concerning the International Carriage of Dangerous Goods by Rail (Europe) |
| SADT | Self-Accelerating Decomposition Temperature |
| SAR | Structure-activity relationship |
| SDS | Safety Data Sheet |
| SL | Surface Limit |
| STEL | Short Term Exposure Limit |
| STOT RE | Specific target organ toxicity - Repeated exposure |
| STOT SE | Specific target organ toxicity - Single exposure |
| SVHC | Substance of very high concern |
| TCSI | Taiwan Chemical Substance Inventory |
| TDG | Transport of Dangerous Goods (Canada) |
| TRGS | Technical Rule for Hazardous Substances |
| TSCA | Toxic Substances Control Act (United States) |
| TWA | Time-Weighted Average |
| UN | United Nations |
| VOC | Volatile organic compounds |
| vPvB | Very Persistent and Very Bioaccumulative |
| vPvM | Very Persistent and Very Mobile |
| As | Allergenic substance |
| C | Carcinogen |
| DS | Dermal Sensitizer |
| Ot | Ototoxicant |
| pOt | Ototoxicant - potential to cause hearing disorders |
| PS | Photosensitizer |
| RS | Respiratory Sensitizer |
| S | Sensitizer |
| poS | Sensitizer - capable of causing occupational asthma |
| Sa | Simple asphyxiant |
| Sd | Skin designation |
| pSd | Skin designation - potential for cutaneous absorption |
| Sdv | Skin designation - vacated |
| Sk | Skin notation |
| dSk | Skin notation - danger of cutaneous absorption |
| pSk | Skin notation - potential for cutaneous absorption |

| Classification procedure | |
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| Classification according to Regulation (EC) No. 1272/2008 [CLP] | Method Used |
| Acute oral toxicity | Calculation method |
| Acute dermal toxicity | Calculation method |
| Acute inhalation toxicity - gas | Calculation method |
| Acute inhalation toxicity - vapor | Calculation method |
| Acute inhalation toxicity - dust/mist | Calculation method |
| Skin corrosion/irritation | Calculation method |
| Serious eye damage/eye irritation | Calculation method |
| Respiratory sensitization | Calculation method |
| Skin sensitization | Calculation method |
| Mutagenicity | Calculation method |

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| Carcinogenicity | Calculation method |
| Reproductive toxicity | Calculation method |
| STOT - single exposure | Calculation method |
| STOT - repeated exposure | Calculation method |
| Chronic aquatic toxicity | Calculation method |
| Acute aquatic toxicity | Calculation method |
| Aspiration hazard | Calculation method |
| Ozone | Calculation method |

**Key literature references and sources for data used to compile the SDS**
U.S. Agency for Toxic Substances and Disease Registry (ATSDR)
U.S. Environmental Protection Agency ChemView Database
European Food Safety Authority (EFSA)
European Chemicals Agency (ECHA) Committee for Risk Assessment (ECHA_RAC)
European Chemicals Agency (ECHA) (ECHA_API)
U.S. Environmental Protection Agency
U.S. EPA Acute Exposure Guideline Level(s) (AEGL(s))
U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act
U.S. Environmental Protection Agency High Production Volume Chemicals
Food Research Journal
U.S. Hazardous Substance Data Bank (HSDB)
International Uniform Chemical Information Database (IUCLID)
Japan National Institute of Technology and Evaluation (NITE)
Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS)
U.S. National Institute for Occupational Safety and Health (NIOSH)
National Library of Medicine's ChemID Plus (NLM CIP)
National Library of Medicine’s PubMed database (NLM PUBMED)
U.S. National Toxicology Program (NTP)
New Zealand's Chemical Classification and Information Database (CCID)
International Organization for Economic Co-operation and Development (OECD) Environment, Health, and Safety Publications
International Organization for Economic Co-operation and Development (OECD) High Production Volume Chemicals Program
International Organization for Economic Co-operation and Development (OECD) Screening Information Data Set
United Nations World Health Organization (WHO)

**Limit Value Legal Basis**

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| European Union (Directive 98/24/EC) | Council Directive 98/24/EC of April 7, 1998 on the protection of the health and safety of workers from the risks related to chemical agents at work, as amended |
| European Union (Directive 2004/37/EC) | Directive 2004/37/EC of April 29, 2004 on the protection of workers from the risks related to exposure to carcinogens or mutagens at work, as amended |
| Austria (GKV BGBl. II Nr. 330/2024) | Ordinance on Limit Values for Workplace Substances and on Carcinogens, as amended by BGBl. II Nr. 330/2024, from the Federal Ministry of Economics and Labor |
| Austria (VGÜ 2008) | Ordinance on health monitoring at the workplace 2008, published through BGBl. II Nr. 224/2007 by Austria Minister for Labor and Social Affairs, as amended |
| Belgium (Royal Decree 21/01/2020) | Royal Decree of March 11, 2002 on the protection of workers' health against risks from chemical agents at work, as amended |
| Bulgaria (Regulation No. 13) | Regulation No. 13 of December 30, 2003 on the Protection of Workers from Hazards Related to Exposure to Chemical Agents at Work, as amended |
| Bulgaria (Regulation No. 10) | Regulation No. 10 of September 26, 2003 on the Protection of Workers from the Risks Associated with Exposure to Carcinogens, Mutagens or Substances Toxic to Reproduction at Work, as amended |
| Croatia (Official Gazette No. 91/2018) | Official Gazette No. 91/2018 on the Protection of Workers from Exposure to Hazardous Chemicals at Work, the Limit Values of Exposure and the Biological Limit Values, as amended |
| Cyprus (Cabinet of Ministers Regulation 268/2001) | Cabinet of Ministers Regulation 268/2001 - Safety and Health in the Working Environment (Chemical Substances), as amended |
| Cyprus (Cabinet of Ministers Regulation 153/2001) | Cabinet of Ministers Regulation 153/2001 - Safety and Health in the Working Environment (Chemical Substances-Carcinogens), as amended |
| Czech Republic (Regulation 361/2007) | Conditions for the Protection of the Health of Employees at Work, Government Regulation 361/2007, as amended |

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| Czech Republic (Decree Nos. 181/2015 and 240/2015) | Decree 181/2015 and Decree 240/2015, amending Decree No. 432/2003 Coll., laying down the conditions for the application of the work into categories, limit values for the parameters of biological exposure tests and requirements for reporting work with asbestos and biological agents |
| Denmark (BEK no. 1619 of 19/12/2024) | Statutory Order No. 507, Order on Limit Values for Substances and Materials, as amended by BEK no. 1619 of 19/12/2024 |
| Estonia (Regulation No. 105) | Health and Safety Requirements for the Use of Dangerous Chemicals and Materials Containing Them and Occupational Exposure Limits to Chemical Agents, Regulation No. 105 of March 20, 2001, as amended |
| Finland (HTP-ARVOT 2025) | Regulation on Concentrations Known to be Hazardous, 55/2025, Publications of Ministry of Social Affairs and Health |
| France (INRS ED 6443) | Occupational Exposure Limit Values, ED 6443, Published 2021 by the INRS (the National Research and Safety Institute for the Prevention of Occupational Accidents and Diseases), as amended |
| France (Decree 2009-157) | Decree 2009-1570 of December 15, 2009, relative to the control of chemical risk on workplaces |
| Germany TRGS | TRGS 900 - Occupational Exposure Limits, Technical Rules for Dangerous Substances, 2025 |
| Germany (TRGS 903) | Biological Threshold Limits (BGW-Values), Technical Rules for Dangerous Substances, 2025 |
| Germany (DFG) | MAK and BAT values of Hazardous Chemical Compounds in the Work Area, published by the German Research Foundation on July 1, 2025 |
| Greece (Presidential Decree 90/1999) | Presidential Decree 90/1999, Occupational Exposure Limits - Protection of workers' health and safety from exposure to certain chemical substances during the workday, as amended |
| Greece (Presidential Decree 212/2006) | Presidential Decree 212/2006, Protection of workers that are exposed to asbestos |
| Greece (Presidential Decree 338/2001) | Presidential Decree 338/2001, Protection of workers' health and safety from exposure to certain chemical substances during the workday |
| Hungary (5/2020 ITM Decree) | 5/2020. (II. 6.) Ministry of Innovation and Technology decree on the protection of the health and safety of workers from the risks related to chemical agents, as amended |
| Ireland (CoP 2024) | 2024 Code of Practice for the Safety, Health and Welfare at Work (Chemical Agents) Regulations (2001-2021) & the Safety, Health and Welfare at Work (Carcinogens, Mutagens and Reprotoxic Substances) Regulations (2024) |
| Italy (Legislative Decree no. 81) | Title IX, Annex XLIII and XXXVIII, Professional Exposure Limits and Annex XXXIX Mandatory Biological Limit Values and Health Monitoring, Legislative Decree no. 81 of April 9, 2008, as amended |
| Italy (AIDII) | Final Note (1), Ministerial Decree of August 20, 1999 by the Ministry of Health along with the Ministry of Industry, Trade, and Arts |
| Latvia (Cabinet of Ministers Regulation No. 325) | Cabinet of Ministers Regulation No. 325 of 2007 - Labor Protection Requirements when Coming in Contact with Chemical Substances at Workplaces, as amended |
| Lithuania (HN 23:2011) | Lithuanian Hygiene Standard HN 23:2011 Occupational Exposure limit values for chemical substances - General requirements of measurement and impact assessment, as amended |
| Luxembourg (A-N°684) | Grand-Ducal Regulation of 20 July 2018 amending the Grand-Ducal Regulation of 14 November 2016 concerning the protection of the safety and health of employees against the risks associated with chemical agents in the workplace, A-N°684 of 2018 |
| Malta (Subsidiary Legislation 424.24) | Malta Occupational Health and Safety Authority Act: Chapter 424 - Protection of the health and safety of workers from the risks related to chemical agents at work, as amended |
| Netherlands (Working Conditions Regulations) | Occupational Working Conditions Regulation, Limit Values for substances harmful to health, Annex XIII, as amended |
| Norway (FOR-2011-12-06-1358) | Regulations concerning action and limit values for physical and chemical agents in the working environment and classified biological agents, as amended |
| Poland (Legislative Journal 2018 item 1286) | Regulation of the Minister of Family, Labor and Social Policy of June 12, 2018 on the Highest Allowable Concentrations and Intensities of Factors Harmful to Health in the Work Environment, as amended |
| Portugal (NP 1796:2014) | Portuguese Norm NP 1796:2014, Occupational exposure limits and biological exposure indices to chemical agents, Table 1 - Occupational exposure limits and biological exposure indices to chemical agents (OELs) |
| Romania (Government Decision no. 1218/2006) | Governmental Decision No. 1218 from September 6, 2006 on the minimum health and safety requirements for protection of workers from the risks related to exposure to chemical |

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| | agents, Annex No. 1 Mandatory National Occupational Exposure Limit Values for Chemical Agents |
| Slovakia (Gov. Decree 122/2024) | Government Decree of Slovak Republic 122/2024 of May 22, 2024 amending Government Decree of Slovak Republic 355/2006 about protection of health of employees when working with chemical agents |
| Slovenia (Regulation No. 100/2001) | Regulation for protection of workers against risks related to exposure to chemical substances at the workplace, Annexes I and II, the Official Gazette of the Republic of Slovenia, No. 100/2001, as amended |
| Slovenia (Regulation No. 29/2024) | Regulation for protection of workers against risks related to carcinogenic, mutagenic or reprotoxic substances exposure at work, Annex III, The Official Journal of the Republic of Slovenia, No. 29/2024, as amended |
| Spain (Occupational exposure limits for chemical agents in Spain, 2025) | National Institute for Safety and Health at Work (INSST) - Occupational exposure limits for chemical agents in Spain, 2025, Tables 1 and 3 |
| Sweden (AFS 2023:14) | The Swedish Work Environment Authority's Regulations and General Advice on Respiratory limit values in the work Environment |
| Switzerland (MAK Values) | Occupational Limit Values 2025, Swiss National Accident Insurance Fund, List of MAK Values |
| Switzerland (BAT Values) | Occupational Limit Values 2025, Swiss National Accident Insurance Fund, List of Biological Limit Values |

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**End of Safety Data Sheet**