

## SAFETY DATA SHEET (SDS)

in accordance with Regulation (EC) No 1907/2006 (REACH), Annex II — Regulation (EU) 2020/878

Date: 08.09.2026 | Version: 2 | EN

## hydrogen chloride

chlorane

CAS 7647-01-0

CLH

EC 933-977-5

MOLAR MASS  
36.46LOGP  
0.25  
(pomiar:  
CRC  
Handbook  
105th ed.  
(Haynes  
2024))

## HAZARD CLASSIFICATION (GHS / CLP)



Danger

H314 H335

Hazard class scope limited to the harmonised classification (CLP Annex VI); classes outside the harmonised entry may require supplier self-classification (CLP Art. 4(3)) — verify with the supplier safety data sheet.

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

|                       |                             |
|-----------------------|-----------------------------|
| 1.1 Substance name    | hydrogen chloride           |
| 1.1 IUPAC name        | chlorane                    |
| 1.1 CAS number        | 7647-01-0                   |
| 1.1 EC number         | 933-977-5                   |
| 1.1 PubChem CID       | 313                         |
| 1.1 InChIKey          | VEXZGXHMUGYJMC-UHFFFAOYSA-N |
| 1.1 SMILES            | Cl                          |
| 1.1 Molecular formula | ClH <sup>[7]</sup>          |
| 1.1 Molar mass        | 36.46 g/mol <sup>[7]</sup>  |
| 1.1 Exact mass        | 35.9767 Da <sup>[7]</sup>   |

## 1.2 Uses

For laboratory and research purposes. Not for use in the production of food, medicines or cosmetics without appropriate authorisation.

### 1.3 Details of the supplier

REFERENCE COPY — NO  
SUPPLIER DETAILS — NOT FOR  
DISTRIBUTION

Supplier details are not included in this reference copy. The supplier placing the substance on the market must complete this section and remains responsible for the sheet under REACH. MolGod.org prepares documentation and is not the supplier of this substance.

### 1.4 Emergency telephone number

#### Emergency telephone

112 (EU-wide emergency number)

Contact the poison centre designated in the country of placing on the market (CLP Art. 45).

## 2. Hazards identification

GHS:  

PPE:      

**Danger**

#### Hazard statements (H) [3][4][11]

|             |                                         |
|-------------|-----------------------------------------|
| <b>H314</b> | Causes severe skin burns and eye damage |
| <b>H335</b> | May cause respiratory irritation        |

#### Precautionary statements (P) [3][4][11]

|                                                                  |                                                                                                                                 |
|------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| <b>P260</b>                                                      | Do not breathe dust/fume/gas/mist/vapours/spray                                                                                 |
| <b>P260 — NIE WDYCHAJ GAZÓW</b>                                  | —                                                                                                                               |
| <b>P264</b>                                                      | Wash thoroughly after handling                                                                                                  |
| <b>P271</b>                                                      | Use only outdoors or in a well-ventilated area                                                                                  |
| <b>P280</b>                                                      | Wear protective gloves/protective clothing/eye protection/face protection                                                       |
| <b>P280 — STOSUJ OCHRONĘ</b>                                     | —                                                                                                                               |
| <b>P301+P330+P331</b>                                            | IF SWALLOWED: Rinse mouth; Do NOT induce vomiting                                                                               |
| <b>P303+P361+P353</b>                                            | IF ON SKIN (or hair): Take off immediately all contaminated clothing; Rinse skin with water or shower                           |
| <b>P304+P340</b>                                                 | IF INHALED: Remove person to fresh air and keep comfortable for breathing                                                       |
| <b>P304+P340 — PRZY WDYCHANIU: WYPROWADŹ NA ŚWIEŻE POWIETRZE</b> | IF INHALED                                                                                                                      |
| <b>P305+P351+P338</b>                                            | IF IN EYES: Rinse cautiously with water for several minutes; Remove contact lenses, if present and easy to do. Continue rinsing |
| <b>P310</b>                                                      | Immediately call a POISON CENTER or doctor/physician                                                                            |
| <b>P312</b>                                                      | Call a POISON CENTER or doctor/physician if you feel unwell                                                                     |
| <b>P321</b>                                                      | Specific treatment                                                                                                              |
| <b>P363</b>                                                      | Wash contaminated clothing before reuse                                                                                         |
| <b>P403+P233</b>                                                 | Store in a well-ventilated place: Keep container tightly closed                                                                 |
| <b>P405</b>                                                      | Store locked up                                                                                                                 |
| <b>P501</b>                                                      | Dispose of contents/container to an approved waste collection point                                                             |

**Hazard class scope limited to the harmonised classification (CLP Annex VI); classes outside the harmonised entry may require supplier self-classification (CLP Art. 4(3)) — verify with the supplier safety data sheet.**

### 3. Composition/information on ingredients

|                          |                            |
|--------------------------|----------------------------|
| <b>Substance type</b>    | solution (commercial form) |
| <b>CAS Number</b>        | 7647-01-0                  |
| <b>EC number</b>         | 933-977-5                  |
| <b>Molecular formula</b> | ClH                        |
| <b>Concentration</b>     | ~35% (aqueous solution)    |
| <b>Clp index no</b>      | 017-002-01-X               |

### 4. First aid measures



#### Inhalation

Move the affected person to fresh air. Keep at rest. If not breathing: artificial respiration (qualified personnel only). [\[1\]](#)[\[2\]](#)[\[19\]](#)

#### Skin contact

Remove contaminated clothing. Rinse skin with soap and water (min. 15 minutes). Call a physician immediately. [\[1\]](#)[\[2\]](#)[\[19\]](#)

#### Eye contact

Rinse eyes with running water (min. 15 minutes). Remove contact lenses if possible. If irritation persists — consult an ophthalmologist. [\[1\]](#)[\[2\]](#)[\[19\]](#)

#### Ingestion

Do NOT induce vomiting (unless directed by a physician). Rinse mouth with water. Never give anything by mouth to an unconscious person. Emergency number: 112 (EU-wide). Contact the poison centre designated in your country (CLP Art. 45). [\[1\]](#)[\[2\]](#)[\[19\]](#)

#### Symptoms and effects

cough, shortness of breath, headache, dizziness; skin redness and irritation. [\[3\]](#)[\[11\]](#)

#### Notes for physician

Requires verification

**Emergency numbers: Emergency: 112 (EU-wide).  
Poison centre: as designated in the country of  
placing on the market (CLP Art. 45).**

## 5. Firefighting measures

|                                       |                                                                                |
|---------------------------------------|--------------------------------------------------------------------------------|
| <b>Suitable extinguishing media</b>   | Adapt extinguishing media to surroundings. CO <sub>2</sub> , dry powder, foam. |
| <b>Unsuitable extinguishing media</b> | No specific restrictions.                                                      |
| <b>Specific hazards</b>               | Thermal decomposition products: HCl (hydrogen chloride).<br>[20]               |
| <b>Advice for firefighters</b>        | Use self-contained breathing apparatus (SCBA). Full protective suit.           |
| <b>Flash point note</b>               | Non-flammable (aqueous solution)                                               |

## 6. Accidental release measures

|                                                |                                                                                                                                                                                                                                                                                                                                                                                                                            |
|------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Personal precautions</b>                    | Use personal protective equipment (see Section 8). Avoid breathing vapours. [1][2][19]                                                                                                                                                                                                                                                                                                                                     |
| <b>Environmental precautions</b>               | Prevent entry into sewers, groundwater and surface water.<br>[1][2][19]                                                                                                                                                                                                                                                                                                                                                    |
| <b>Methods for containment and cleaning up</b> | 1. Ventilate — HCl vapours are irritating 2. PPE: butyl + face shield + E1P2 half-mask 3. SLOWLY neutralise with slaked lime (Ca(OH) <sub>2</sub> ) or baking soda (NaHCO <sub>3</sub> ) 4. Cover with inert absorbent (vermiculite, diatomaceous earth) 5. Do NOT use sawdust (flammable) 6. Collect into an HDPE container, neutralising to pH 6-9 7. Wash the area with water                                           |
| <b>Related sections</b>                        | 8; 13                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Large spill</b>                             | 1. EVACUATE 5-10m, monitor HCl gas level (>5 ppm = danger) 2. FULL PPE: acid-resistant suit + full-face mask E2P3 3. Contain with slaked lime (Ca(OH) <sub>2</sub> ) — EXOTHERMIC REACTION, cool 4. Do NOT use pressurized water (splashing + HCl fumes) 5. Water mist from a distance is OK 6. Collect by pump into a PE drum with stepwise neutralization 7. Notify WIOŚ (environmental protection inspectorate) if >50L |
| <b>Absorbent</b>                               | vermiculite + Ca(OH) <sub>2</sub>                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>HAZMAT response required</b>                | Yes                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Required PPE</b>                            | Gloves: butyl rubber (>0.6mm); Safety goggles: Yes; Face shield: Yes; Respiratory protection: half mask E1P2; Protective clothing: PVC apron                                                                                                                                                                                                                                                                               |

## 7. Handling and storage

|                               |                                                                                                               |
|-------------------------------|---------------------------------------------------------------------------------------------------------------|
| <b>Precautions</b>            | Work in a fume hood or with adequate ventilation. No eating, drinking or smoking in the work area. [1][2][19] |
| <b>Storage temperature</b>    | Store at room temperature (15-25°C) or as indicated on the label. [1][2][19]                                  |
| <b>Humidity</b>               | Store in a dry place (<60% RH). [1][2][19]                                                                    |
| <b>Light</b>                  | Protect from direct sunlight. [1][2][19]                                                                      |
| <b>Incompatible materials</b> | Strong oxidizers, strong bases, Base metals (hydrogen evolution). [20]                                        |

## 8. Exposure controls/personal protection

### 8.1 Control parameters

|                           |                                                                                                             |
|---------------------------|-------------------------------------------------------------------------------------------------------------|
| <b>OEL — NDS (Poland)</b> | NDS = 5 mg/m <sup>3</sup> (TWA) · NDSch = 10 mg/m <sup>3</sup> (STEL) — Rozp. MRiPS Dz.U.2024 poz.1017 [24] |
| <b>OEL (EU)</b>           | OEL-TWA: 5 ppm (8 mg/m <sup>3</sup> ) · OEL-STEL: 10 ppm (15 mg/m <sup>3</sup> ) — IOELV 2000/39/EC [12]    |

DNEL

No data available.

PNEC

No data available.

8.2 Personal protective equipment (PPE) <sup>[5][6][21]</sup>

**Chemical-resistant protective gloves**  
EN ISO 374-1:2016+A1:2018  
butyl rubber (>0.6mm)



**Closed safety spectacles or goggles**  
EN ISO 16321-1:2022 / EN 166:2001



**Respiratory protection**  
EN 14387:2004+A1:2008  
gas/vapour filter per EN 14387 (select type B/E/K per substance nature) – NOT FFP



**Face shield (splash risk)**  
EN ISO 16321-1:2022



**Chemical-resistant protective clothing**  
EN 13034:2005+A1:2009 (typ 6) / EN 14126:2003 (bio)



**Closed safety footwear with toe protection**  
EN ISO 20345:2022 (S2/S3)

## 9. Physical and chemical properties

| Property (item 9.1)                           | Value                                                                                              | Source                         |
|-----------------------------------------------|----------------------------------------------------------------------------------------------------|--------------------------------|
| Physical state                                | Liquid                                                                                             |                                |
| Colour                                        | No data available.                                                                                 |                                |
| Odour                                         | No data available.                                                                                 |                                |
| pH (1% aqueous solution)                      | No data available.                                                                                 |                                |
| Melting point                                 | approx. -25°C (~35% solution)                                                                      | Curated list (commercial form) |
| Boiling point                                 | approx. 48–110°C depending on concentration (azeotrope 20,2% boils at 108,6°C) (experimental data) | Curated list (commercial form) |
| Flash point                                   | Non-flammable (aqueous solution)                                                                   | Curated list (commercial form) |
| Flammability                                  | No data available.                                                                                 |                                |
| Lower and upper explosion limit               | No data available.                                                                                 |                                |
| Density (20°C)                                | 1,16–1,18 g/cm <sup>3</sup> (~35% solution, 20°C) (experimental data)                              | Curated list (commercial form) |
| Vapour pressure                               | 4326.566 kPa (32452 mmHg, 21.1°C) (experimental data) <sup>[7]</sup>                               |                                |
| Relative vapour density                       | No data available.                                                                                 |                                |
| Dynamic viscosity                             | 0.405 mPa·s <sup>[7]</sup>                                                                         |                                |
| Kinematic viscosity                           | No data available.                                                                                 |                                |
| Refractive index n <sub>D</sub> <sup>20</sup> | 1.254 (experimental data) <sup>[7]</sup>                                                           |                                |
| Auto-ignition temperature                     | No data available.                                                                                 |                                |
| Decomposition temperature                     | Not applicable                                                                                     |                                |
| Rozpuszcz. w wodzie                           | No data available.                                                                                 |                                |
| Particle characteristics                      | Not applicable (REACH 9.1(r))                                                                      |                                |

| Property (item 9.1)      | Value                                                                 | Source                         |
|--------------------------|-----------------------------------------------------------------------|--------------------------------|
| <b>log Kow (XLogP3)</b>  | Not applicable – substance ionizes in water (solution) <sup>[7]</sup> | Curated list (commercial form) |
| <b>Molar mass</b>        | 36.46 g/mol <sup>[7]</sup>                                            |                                |
| <b>Molecular formula</b> | ClH <sup>[7]</sup>                                                    |                                |

Where a property above reads "No data available", no measured value was found in the public sources consulted for this substance. The property has not been determined by MolGod.org and no value is inferred. "Not applicable" means the property has no meaning for this substance in the form supplied.

## 10. Stability and reactivity

|                               |                                                                   |
|-------------------------------|-------------------------------------------------------------------|
| <b>Reactivity</b>             | Stable under normal storage and handling conditions.              |
| <b>Chemical stability</b>     | Thermally stable under recommended conditions.                    |
| <b>Hazardous reactions</b>    | No hazardous reactions known under normal conditions.             |
| <b>Conditions to avoid</b>    | High temperatures, direct sunlight, moisture.                     |
| <b>Incompatible materials</b> | Strong oxidizers, strong bases, Base metals (hydrogen evolution). |
| <b>Decomposition products</b> | Thermal decomposition products:HCl (hydrogen chloride).           |

## 11. Toxicological information

|                                              |                                                                                                                                                             |
|----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>LD50 (oral)</b>                           | 700 mg/kg (rat) <sup>[9][10]</sup>                                                                                                                          |
| <b>LD50 (dermal)</b>                         | No data available.                                                                                                                                          |
| <b>LC50 (inhalation)</b>                     | LC50 3124 ppm (1 h) (rat) <sup>[7]</sup>                                                                                                                    |
| <b>Skin irritation</b>                       | Category 1 (H314) — corrosive; sub-category (1A/1B/1C) per CLP Annex VI entry. <sup>[3][11]</sup>                                                           |
| <b>Eye irritation</b>                        | Serious eye damage — covered by the corrosive classification (H314; CLP Annex I 3.3.2.1). <sup>[3][11]</sup>                                                |
| <b>Sensitisation</b>                         | Not classified for this hazard (outside the scope of the harmonised classification in CLP Annex VI; verify supplier self-classification) <sup>[3][11]</sup> |
| <b>Mutagenicity</b>                          | Not classified for this hazard (outside the scope of the harmonised classification in CLP Annex VI; verify supplier self-classification) <sup>[3][11]</sup> |
| <b>Carcinogenicity</b>                       | No harmonised CLP classification as carcinogenic; for carcinogenicity assessment see the IARC classification below. <sup>[22]</sup>                         |
| <b>IARC classification (carcinogenicity)</b> | IARC Group 3 — not classifiable as to its carcinogenicity to humans. [local snapshot — not verified against the current IARC list] <sup>[22]</sup>          |
| <b>Reproductive toxicity</b>                 | Not classified for this hazard (outside the scope of the harmonised classification in CLP Annex VI; verify supplier self-classification) <sup>[3][11]</sup> |
| <b>STOT — single exposure</b>                | Category 3 (H335): May cause respiratory irritation. <sup>[3][11]</sup>                                                                                     |
| <b>STOT — repeated exposure</b>              | Not classified for this hazard (outside the scope of the harmonised classification in CLP Annex VI; verify supplier self-classification) <sup>[3][11]</sup> |
| <b>Aspiration hazard</b>                     | Not classified for this hazard (outside the scope of the harmonised classification in CLP Annex VI; verify supplier self-classification) <sup>[3][11]</sup> |

## 12. Ecological information

|                                        |                                                                                                                                                                        |
|----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Aquatic toxicity</b>                | LC <sub>50</sub> (fish, 96h): 282 mg/L (Gambusia affinis, 96h, pH-dependent)                                                                                           |
| <b>Persistence / biodegradability</b>  | Mineral acid — not biodegradable. Neutralized by alkaline buffers in natural waters (CO <sub>3</sub> <sup>2-</sup> /HCO <sub>3</sub> <sup>-</sup> ).                   |
| <b>Bioaccumulative potential</b>       | No data available.                                                                                                                                                     |
| <b>Mobility in soil</b>                | No data available.                                                                                                                                                     |
| <b>PBT/vPvB assessment</b>             | Not applicable (inorganic substance)                                                                                                                                   |
| <b>Endocrine disrupting properties</b> | Zgłoszone efekty endokrynne u organizmów wodnych (dane ekotoksykologiczne, US EPA ECOTOX; nie stanowią regulacyjnej klasyfikacji ED wg 2018/605). [PL] <sup>[23]</sup> |

## 13. Disposal considerations

|                                        |                                                                                                                                                                                                                               |
|----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Disposal method</b>                 | Slow neutralisation with 10% NaOH or Ca(OH) <sub>2</sub> to pH 6-9, continuous measurement, temperature control (strongly exothermic). After neutralisation → NaCl brine + water → discharge to the sewer WITH WIOŚ APPROVAL. |
| <b>Waste code (EWC)</b>                | 06 01 02* — Hydrochloric acid <sup>[18]</sup>                                                                                                                                                                                 |
| <b>Packaging</b>                       | Cleaned packaging may be recycled. Contaminated packaging must be treated as hazardous waste.                                                                                                                                 |
| <b>Licensed waste contractors (PL)</b> | Ekoindustról Sp. z o.o.; PCC Rokita SA                                                                                                                                                                                        |
| <b>BDO required</b>                    | Yes                                                                                                                                                                                                                           |

## 14. Transport information



Class 8 — Corrosive substances

|                                      |                                                                                                                                                                                        |
|--------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>UN number</b>                     | UN 1789 <sup>[15]</sup>                                                                                                                                                                |
| <b>Proper shipping name</b>          | HYDROCHLORIC ACID <sup>[15]</sup>                                                                                                                                                      |
| <b>Transport hazard class</b>        | 8 — Corrosive substances <sup>[15]</sup>                                                                                                                                               |
| <b>Packing Group</b>                 | II <sup>[15]</sup>                                                                                                                                                                     |
| <b>Environmental hazard</b>          | Not classified as environmentally hazardous for transport (no H400/H410/H411 in CLP Annex VI; no marine pollutant mark required) <sup>[3]</sup>                                        |
| <b>Special precautions</b>           | Handle as dangerous goods according to the assigned class (ADR/IMDG/IATA); apply the precautions appropriate to that class.                                                            |
| <b>CN/HS code</b>                    | 2806 10 00 <sup>[17]</sup>                                                                                                                                                             |
| <b>Notes</b>                         | Transport classification per ADR / UN Model Regulations (UN number, class and packing group above). Verify the ADR/IMDG/IATA edition in force on the date of shipment. <sup>[15]</sup> |
| <b>EmS code (IMDG)</b>               | F-A, S-B <sup>[16]</sup>                                                                                                                                                               |
| <b>Tunnel restriction code (ADR)</b> | (E)                                                                                                                                                                                    |
| <b>Limited quantities (LQ)</b>       | 1 L (LQ22)                                                                                                                                                                             |
| <b>Marine pollutant</b>              | No                                                                                                                                                                                     |

## 15. Regulatory information

|                                  |                                                                                                                                                                             |
|----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>SVHC status</b>               | SVHC status not verified against the available dataset — check the current ECHA Candidate List; do not assume absence. <sup>[1]</sup>                                       |
| <b>REACH Annex XIV</b>           | Not verified against the ECHA Authorisation List — check REACH Annex XIV. <sup>[1]</sup>                                                                                    |
| <b>REACH Annex XVII</b>          | Not confirmed in the available Annex XVII dataset — verify against the current ECHA list before placing on the market; do not assume absence of restriction. <sup>[1]</sup> |
| <b>REACH registration number</b> | 01-2119484862-27-XXXX (the last part of the number is confidential — the full number is held by the registrant; verify with ECHA)                                           |

|                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|----------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Index number (CLP Annex VI)</b>           | 017-002-01-X                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Harmonised classification</b>             | Yes (solution — index 017-002-01-X)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>IARC classification (carcinogenicity)</b> | Group 3 — not classifiable as to its carcinogenicity to humans (hydrochloric acid/HCl). Note: the separate IARC monograph on mists of strong inorganic acids containing sulfuric acid (Group 1) does NOT apply to pure HCl.                                                                                                                                                                                                                                                                                                                    |
| <b>OEL — Journal of Laws (Poland)</b>        | Dz.U. 2024 poz. 1017 (NDS 5 mg/m <sup>3</sup> , NDSch 10 mg/m <sup>3</sup> )                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Drug precursor (EU)</b>                   | Category 3 drug precursor under Regulation (EC) No 273/2004 (Annex I). Intra-EU trade requires no operator licence or registration. Obligations: transaction documentation and notification of suspicious transactions to the competent authorities (Art. 8). Trade with third countries (import/export) is governed by Regulation (EC) No 111/2005: transactions are subject to documentation and export to certain countries requires a pre-export notification; verify the requirements for the country of destination. <sup>[13][14]</sup> |

## 16. Other information

Legal status of classification: harmonised under CLP Annex VI — Reg. (EC) No 1272/2008 (as at the date of issue). Entries with an entry-into-force date after 08.09.2026 were omitted as future (not yet applicable).

Data aggregated automatically from public reference databases (PubChem, ECHA, NIST and others).

### Scientific citations (5)

Nathalia M. C. Tolentino, Luana S. M. Forezi. Hydrochloric Acid (CAS No. 7647-01-0). Revista Virtual de Química (2014). DOI: 10.5935/1984-6835.20140072  
Hydrogen Chloride 7647-01-0. Sax's Dangerous Properties of Industrial Materials (2012). DOI: 10.1002/0471701343.sdp13942  
Hydrochloric Acid 7647-01-0. Sax's Dangerous Properties of Industrial Materials (2012). DOI: 10.1002/0471701343.sdp13908  
Kim SY, Yoon JH, Jung DH et al.. Fexuprazan safeguards the esophagus from hydrochloric acid-induced damage by suppressing NLRP1/Caspase-1/GSDMD pyroptotic pathway.. Frontiers in immunology (2024). DOI: 10.3389/fimmu.2024.1410904  
Schneider C, Nürnberger S. Decellularization of Articular Cartilage: A Hydrochloric Acid-Based Strategy.. Methods in molecular biology (Clifton, N.J.) (2023). DOI: 10.1007/978-1-0716-2839-3\_21

### Full text of H statements

**H314** Causes severe skin burns and eye damage  
**H335** May cause respiratory irritation

### Full text of P statements

**P260** Do not breathe dust/fume/gas/mist/vapours/spray  
**P260 — NIE WDYCHAJ GAZÓW** —  
**P264** Wash thoroughly after handling  
**P271** Use only outdoors or in a well-ventilated area  
**P280** Wear protective gloves/protective clothing/eye protection/face protection  
**P280 — STOSUJ OCHRONĘ** —  
**P301+P330+P331** IF SWALLOWED: Rinse mouth; Do NOT induce vomiting  
**P303+P361+P353** IF ON SKIN (or hair): Take off immediately all contaminated clothing; Rinse skin with water or shower  
**P304+P340** IF INHALED: Remove person to fresh air and keep comfortable for breathing  
**P304+P340 — PRZY WDYCHANIU: WYPROWADŹ NA ŚWIEŻE POWIETRZE** IF INHALED  
**P305+P351+P338** IF IN EYES: Rinse cautiously with water for several minutes; Remove contact lenses, if present and easy to do. Continue rinsing  
**P310** Immediately call a POISON CENTER or doctor/physician  
**P312** Call a POISON CENTER or doctor/physician if you feel unwell  
**P321** Specific treatment  
**P363** Wash contaminated clothing before reuse  
**P403+P233** Store in a well-ventilated place: Keep container tightly closed

## Abbreviations

|              |                                                                                            |
|--------------|--------------------------------------------------------------------------------------------|
| <b>ADR</b>   | European Agreement concerning the International Carriage of Dangerous Goods by Road        |
| <b>ATE</b>   | Acute Toxicity Estimate                                                                    |
| <b>CAS</b>   | Chemical Abstracts Service                                                                 |
| <b>CLP</b>   | Classification, Labelling and Packaging (Reg. (EC) 1272/2008)                              |
| <b>CMR</b>   | Carcinogenic, Mutagenic, toxic to Reproduction                                             |
| <b>DNEL</b>  | Derived No-Effect Level                                                                    |
| <b>EC</b>    | European Community number                                                                  |
| <b>EPI</b>   | Personal protective equipment                                                              |
| <b>GHS</b>   | Globally Harmonized System                                                                 |
| <b>IATA</b>  | International Air Transport Association                                                    |
| <b>IMDG</b>  | International Maritime Dangerous Goods Code                                                |
| <b>SDS</b>   | Safety Data Sheet                                                                          |
| <b>LC50</b>  | Lethal Concentration, 50%                                                                  |
| <b>LD50</b>  | Lethal Dose, 50%                                                                           |
| <b>NDS</b>   | Maximum admissible concentration (workplace, PL)                                           |
| <b>NDSch</b> | Short-term exposure limit (PL)                                                             |
| <b>OEL</b>   | Occupational Exposure Limit                                                                |
| <b>PBT</b>   | Persistent, Bioaccumulative and Toxic                                                      |
| <b>PNEC</b>  | Predicted No-Effect Concentration                                                          |
| <b>REACH</b> | Registration, Evaluation, Authorisation and Restriction of Chemicals (Reg. (EC) 1907/2006) |
| <b>STOT</b>  | Specific Target Organ Toxicity                                                             |
| <b>SVHC</b>  | Substance of Very High Concern                                                             |
| <b>TPSA</b>  | Topological Polar Surface Area                                                             |
| <b>vPvB</b>  | very Persistent and very Bioaccumulative                                                   |

## Version history

### v2 (08.09.2026)

Based on ECHA harmonised classification (Annex VI to CLP, ATP 23).

## References

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### External links

NIST: <https://webbook.nist.gov/cgi/cbook.cgi?ID=7647-01-0>

Wikidata: <https://www.wikidata.org/wiki/Q2409>

ChEMBL: [https://www.ebi.ac.uk/chembl/compound\\_report\\_card/ChEMBL1231821](https://www.ebi.ac.uk/chembl/compound_report_card/ChEMBL1231821)

**NFPA 704** (supplementary information — NFPA/USA system; not a required element of an EU safety data sheet under REACH Annex II)



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