MATERIAL SAFETY DATA SHEET

HYDROCHLORIC ACID 33% solution

Date of releasing: 10.01.2025
Date of reviewing: -
Version EN: 1.0

Material Safety Data Sheet in accordance with WE 1907/2006 of 18.12.2006 – REACH and 2020/878 of 18.06.2020.

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

1.1 Product identifier

HYDROCHLORIC ACID 33% solution
Index number: 017-002-01-X
EC number: 231-595-7
REACH registration number: 01-2119484862-27-0004

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

Identified applications: in household chemicals, food, textile, pulp and paper, pharmaceutical industries.

Advised against applications: any use which may result in generation of an aerosol or emission of vapour (> 10 ppm) or where there is a risk of splashes in eyes or on skin, thereby exposing workers without respiratory, eye or skin protection.

1.3 Details of the supplier of the safety data sheet.

Distributor:

TOMCHEM Sp. z o.o.
95-050 Konstantynów Łódzki
ul. Niesięcin 5A
tel. 42 683-11-83
tel/fax.; 42-636-43-18

1.4 Emergency telephone number: 112 (general emergency phone)

SECTION 2. Hazards identification.

2.1 Classification of the substance or mixture:

Classification and labelling have been determined in accordance with Regulation (EC) 1272/2008 (as amended).
Product has been classified as hazardous in accordance with Regulation (EC) 1272/2008.

Met. Corr. 1; H290
Skin Corr. 1B; H314
STOT SE 3; H335

2.2 Label elements:

Pictogram:

Signal word: Danger

Hazard statements:

H290 May be corrosive to metals.

H314 Causes severe skin burns and eye damage.

H335 May cause respiratory irritation.

Precautionary statements:

P234 Keep only in original container.

P260 Do not breathe dust/vapours.

P303+P361 +P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P305+P351 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

+P338 Continue rinsing.

P501 Dispose of contents/container with local regulations.

2.3 Other hazards:

May react violently with various materials (acids, base metals) with the release of hazardous substances (hydrogen).
Annex XIII of REACH Regulation – Criteria for identifying persistent, bioaccumulative and toxic substances (PBT) and very persistent and very bioaccumulative substances (vPvB) – not applicable.
Substances with endocrine disrupting properties (in accordance with the criteria of Commission Delegated Regulation (EU) 2017/2100, Commission Regulation (EU) 2018/605) – not applicable.

SECTION 3. Composition/information on ingredients

3.1 Substances.

Product identificator	Amount [%]	Hazard class and category codes	Hazard statement codes and supplementary statements	Specific concentration limit, M-factor, Acute toxicity estimate ATE
Hydrochloric acid CAS: - EC: 231-595-7 Index No.: 017-002-01-X REACH No.: 01-2119484862-27-0004	30-38	Met. Corr. 1 Skin Corr. 1B STOT SE 3	H290 H314 H335	Skin Corr. 1B; H314: C≥ 25 % Skin Irrit. 2; H315: 10 % ≤ C < 25 % Eye Irrit. 2; H319: 10 % ≤ C < 25 % STOT SE 3; H335: C ≥ 10 %

Full text of H phrases in section 16.
*substance with a specific OEL value.

SECTION 4. First aid measures.

4.1 Description of first aid measures.

In case of skin contact:

Remove all contaminated clothing, wash skin with plenty of water. Apply a sterile dressing to burnt area. Do not use any neutralizing agents. Contact a physician.

In case of eye contact:

Rinse eyes for several minutes (approx. 15) with plenty of water, keep eyelids wide open. Avoid strong water jet due to the risk of corneal damage, contact a doctor immediately.

In case of inhalation:

In case of dizziness or nausea take affected person to fresh air; if there is no rapid improvement seek medical advice. If shortness of breath occurs give oxygen.

In case of swallowing:

Do not induce vomiting (risk of perforation). Do not give anything to drink. Contact a doctor immediately.

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

Skin contact: chemical burns, wounds that are difficult to heal.
Eye contact: chemical burns - risk of permanent eye damage.
Respiratory system: chemical irritation of mucous membranes of nose, throat and further parts of the respiratory system.
Gastrointestinal tract: chemical burns of mouth, throat, liquefactive necrosis of digestive tract with a risk of perforation.

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

Decision on course of action is made by the doctor after assessing affected person's condition.

SECTION 5. Firefighting measures.

5.1 Extinguishing media:

Suitable extinguishing media: dry chemical, carbon dioxide (carbon dioxide extinguisher), sand, soil. Use extinguishing methods appropriate to ambient conditions.

Inappropriate extinguishing media: none.

5.2 Special hazards arising from the substance or mixture:

During a fire under high temperatures toxic decomposition products are released containing hydrogen chloride, chlorine, hydrogen cyanide, hydrogen isoside etc. Hydrogen is released in contact with metals - explosion hazard.

5.3 Advice for firefighters:

Containers should be cooling in fire area with a water spray, if possible remove them from the danger area. In case of a fire in a closed room, wear protective clothing and a compressed air breathing apparatus. Prevent extinguishing water from entering surface water, ground water and sewage system.

SECTION 6. Accidental release measures.

6.1 Personal precautions, protective equipment and emergency procedures.

For non-emergency personnel: inform appropriate services about accident. Remove from danger area persons not involved in eliminating accident.
For emergency personnel: ensure adequate ventilation, use personal protective equipment. Do not inhale toxic vapors. Avoid contact with product.

6.2 Environmental precautions.

Prevent spreading and entry into sewers and water, inform local authorities if protection cannot be ensured.

6.3 Methods and material for containment and cleaning up.

Prevent spreading and remove by collecting on absorbent material (diatomaceous earth, crushed limestone, sand), place contaminated material in appropriately marked containers for disposal in accordance with applicable regulations. Embank spill area and pump out spilled liquid. Neutralize hydrochloric acid with alkali (sodium carbonate, milk of lime, sodium hydroxide). Clean spill area with water.

6.4 Reference to other sections.

Waste treatment – see section 13.
Personal protective equipment – see section 8.

SECTION 7. Handling and storage.

7.1 Precautions for safe handling.

Use adequate ventilation. Avoid contact with eyes. Avoid contact with skin. Avoid spilling. Avoid formation of aerosols. Avoid sources of ignition, high temperatures, hot surfaces and open flames. Avoid inhaling highly concentrated acid vapours. Work in accordance with safety and hygiene rules: do not eat or drink, do not smoke in workplace area, wash hands after use, remove contaminated clothing and protective equipment before entering eating areas.

7.2 Conditions for safe storage, including any incompatibilities.

Store in a cool, dry, well-ventilated room (general room ventilation and exhaust ventilation), in a properly labelled, closed original container. Floor of warehouses adapted for storage of corrosive liquids should be easily washable and acid-resistant with internal water installation and separate sewage system. Avoid direct sunlight and sources of heat, hot surfaces and open flames. Store away from light metals, strong oxidizers and strong bases. Do not store together with alkalis. Do not use for packaging materials such as: aluminum, tin, zinc.

7.3 Specific end use(s).

Uses according to section 1.2. - no additional recommendations. See attached exposure scenario.

SECTION 8. Exposure controls/personal protection.

8.1 Control parameters:

Ensure adequate ventilation.

Maximum allowable concentration values:

Regulation of the Minister of the Family, Labour and Social Policy of 24 June 2024 on the maximum permissible concentrations and intensities of factors harmful to health in the working environment (Journal of Laws item 1017, as amended).

Chemical name and CAS number	NDS [mg/m^3]	NDSCh [mg/m^3]	NDSP [mg/m^3]	Notes: labeling of substances with the notation "skin"
Hydrogen chloride [CAS: 7647-01-0]	5	10	-	-

DNEL and PNEC values.

Short-term exposure - local effect (by inhalation): DNEL = 15 mg/m^3 (10 ppm)
Long-term exposure - local effect (by inhalation): DNEL = 8 mg/m^3 (5 ppm)
PNEC for water (freshwater) 36µg/L
PNEC for water (marine water) 36µg/L
PNEC for water (variable release) 45µg/L
PNEC STP 36µg/L
PNEC for sediments (freshwater, marine), soil: In water the substance dissociates, therefore it only affects pH.

8.2 Exposure controls:

See Safety Data Sheet Annex: exposure scenarios for identified uses. Appropriate engineering controls: general room ventilation and exhaust ventilation are necessary. Provide on-site eye wash stations.

Respiratory protection.

Avoid inhaling product vapours. When OEL of ingredients is exceeded in work environment use individual respiratory protection equipment – gas mask with universal filter (ABEK) or filter for acid gases and vapours in accordance with the EN 141 standard.

Hand protection.

Use chemical-resistant protective gloves in accordance with EN-PN 374:2005. Selection of appropriate gloves depends not only on the material but also on brand and quality resulting from differences in manufacturers. Resistance of material from which gloves are made can be determined after testing. Exact time of destruction of gloves must be determined by the manufacturer.

Eye protection.

Wear safety glasses or face mask (compliant with EN 166). Provide workplace with eye washers.

Body protection.

Use protective work clothing (in accordance with EN 344) - wash regularly.

Thermal hazards: not applicable.
Environmental exposure controls: do not allow to spread in the environment and to enter drains and watercourses.

SECTION 9. Physical and chemical properties.

9.1 Information on basic physical and chemical properties.

Physical state	liquid
Colour	colourless or slightly yellow
Odour	strong
Melting point/freezing point	-29°C
Boiling point or initial boiling point and boiling range	-85°C(1013 hPa)
Flammability	substance is not flammable
Lower and upper explosion limit	Lower: 4,7%; Upper: 17%
Flash point	According to column 2 of Annex VII REACH, it is possible to avoid test (inorganic substance, contains only such volatile components whose flash point in aqueous solutions is above 100°C and estimated flash point value is above 200°C.
Auto-ignition temperature	substance is not self combustible
Decomposition temperature	not applicable
pH	<1 (5% aqueous solution, acidic)
Kinematic viscosity	1,7mm^2/s (20°C)
Solubility	in water
Partition coefficient n-octanol/water (log value)	no data available
Vapour pressure	4620 kPa (25°C)
Density and/or relative density	1,19 g/ml (25°C, hydrochloric acid 37%)
Relative vapour density	1,27 (20°C) (air=1)
Particle characteristics	no data available

9.2 Other information:

Explosives	not applicable
Flammable gases	not applicable
Aerosols	not applicable
Oxidising gases	not applicable
Gases under pressure	not applicable
Flammable liquids	not applicable
Flammable solids	not applicable
Self-reactive substances and mixtures	not applicable
Pyrophoric liquids	not applicable

Self-heating substances and mixtures	not applicable
Substances and mixtures, which emit flammable gases in contact with water	not applicable
Oxidising liquids	not applicable
Oxidizing solids	not applicable
Organic peroxides	not applicable
Corrosive to metals	may be corrosive to metals.
Desensitised explosives	not applicable

Molecular weight: 36,5.
Surface tension: based on chemical structure of substance, surface tension is not expected.
Stability in organic solvents and identification of important degradation products: inorganic substance.
Dissociation constant: study cannot be carried out scientifically because hydrochloric acid is very strong therefore the pKa has infinitely large value.

SECTION 10. Stability and reactivity.

10.1 Reactivity:

Reactive product, corrosive to many metals (reacts with releasing of hydrogen), reacts with many organic compounds – including bases and oxidants.

10.2 Chemical stability:

Product is stable under normal conditions of use, storage and transport.

10.3 Possibility of hazardous reactions:

Reacts violently with oxidants, during reaction toxic gases may be produced. With presence of water reacts with most metals, during which flammable/explosive hydrogen is released.

10.4 Conditions to avoid:

Avoid high temperatures, direct sunlight, hot surfaces and open flames. Avoid moisture.

10.5 Incompatible materials:

Aluminium and other metals, amines, carbides, hydrides, fluorine, alkali metals, potassium permanganate, strong bases, salts of halogenated oxygen acids, concentrated sulfuric acid, aldehydes, sulfides, lithium silicide, vinyl ethyl ether, semimetal oxides, compounds of hydrogen with semimetal elements,

10.6 Hazardous decomposition products:

When heated, corrosive and toxic hydrogen chloride gas/aerosol is released. In contact with steel, aluminum or other metals, highly flammable hydrogen is produced. In contact with fire, traces of toxic hydrogen chloride gas may occur. In contact with strong oxidizers (bleach, H_2O_2, HNO_3, etc.), toxic chlorine gas is produced.

SECTION 11. Toxicological information.

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

a)	acute toxicity	Based on available data, the classification criteria are not met. LC50 (inhalation, rat) – 7521 mg/m^3 air (30min, gas)
b)	skin corrosion/irritation	Causes severe skin burns.
c)	serious eye damage/irritation	Causes eye damage.

d)	respiratory or skin sensitisation	Based on available data, the classification criteria are not met.
e)	germ cell mutagenicity	Based on available data, the classification criteria are not met.
f)	carcinogenicity	Based on available data, the classification criteria are not met.
g)	reproductive toxicity	Based on available data, the classification criteria are not met.
h)	STOT-single exposure	May cause respiratory irritation.
i)	STOT-repeated exposure	Based on available data, the classification criteria are not met.
j)	aspiration hazard.	Based on available data, the classification criteria are not met.

11.2 Information on other hazards.

Information on probable routes of exposure:
Skin contact: chemical burns, wounds that are difficult to heal.
Eye contact: chemical burns - risk of permanent eye damage.
Respiratory system: chemical irritation of mucous membranes of nose, throat and further respiratory tract.
Gastrointestinal tract: chemical burns of mouth, throat, liquefying necrosis of digestive tract with a risk of perforation. Toxic if swallowed.
Delayed, immediate and chronic effects of short- and long-term exposure: no data available.
Effects of interaction: no data available.

SECTION 12. Ecological information.

12.1 Toxicity:

Substance is not classified as hazardous to environment, however by lowering pH it has a very negative effect on aquatic organisms. It should not be allowed to enter groundwater, sewage systems and watercourses. In the aquatic environment, effect of HCl clearly concerns effect on the pH value, because HCl completely disintegrates into H_3O^+ and Cl^- ions, latter of which is not harmful and therefore the substance itself does not reach sediment/land environment. Based on column II of Annex IV/X, the test can be omitted. HCl is not classified in environmental class, due to its distribution in environment, lack of biological accumulation, granularity and surface adsorption. Continuing some parameters such as buffering capacity, natural pH and pH fluctuations are very specific for a given ecosystem.
Freshwater fish (Lepomis macrochirus) LC50 = 20.5 mg/l (pH = 3.25; 96 h)
Freshwater invertebrates (Daphnia magna) EC50/LC50 = 0,45 mg/l (pH = 4.9; 48 h)
Freshwater algae (Chlorella vulgaris) EC50/LC50 = 0,73 mg/l (pH = 4.7; 72 h)
Microorganisms (biologically active sediment) EC50/LC50 = 0,23 mg/l (pH = 5.2; 3 h)

12.2 Persistence and degradability:

No data available.

12.3 Bioaccumulative potential:

No data available.

12.4 Mobility in soil:

No data available.

12.5 Results of PBT and vPvB assessment:

Does not meet PBT and vPvB criteria.

12.6 Endocrine disrupting properties:

Substance does not disrupt the functioning of the hormonal system.

12.7 Other adverse effects:

After single exposure via inhalation route harmful effects were observed in humans and in human studies below limit concentration value for single exposure classification via inhalation route. Based on possible short-term effects from a single exposure via inhalation DNEL value of 15 mg/m^3 is used.

SECTION 13. Disposal considerations.

13.1 Waste treatment methods.

Hydrochloric acid should be disposed in accordance with local and national regulations. Certified companies should handle waste and disposable packaging. Store residuals in original containers. Dispose in accordance with applicable regulations. Empty, cleaned packaging should be disposed (including recycling) in accordance with applicable regulations.

Law dated 8 January 2013 on waste. (Journal of Laws 2013 item 21 as amended).
Law dated 13 June 2013 on the management of packaging and packaging waste. (Journal of Laws 2013 item 888 as amended).
Regulation of the Minister of Climate of January 02, 2020 on the waste catalog (Journal of Laws 2020 item 10 as amended).

SECTION 14. Transport information.

14.1 UN number or ID number.

UN 1789

14.2 UN proper shipping name.

KWAS CHLOROWODOROWY (KWAS SOLNY)

14.3 Transport hazard class(es).

8

14.4 Packing group.

II

14.5 Environmental hazards.

No

14.6 Special precautions for user.

Always transport in closed containers that are upright, labelled and secured.

14.7 Maritime transport in bulk according to IMO instruments.

No data available.

SECTION 15. Regulatory information.

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

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH),
Commission Regulation (EU) 2020/878 of 18 June 2020 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).
Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC and amending Regulation (EC) No 1907/2006 (REACH)
Law dated 24 October 2011 on the transport of hazardous materials (Journal of Laws 227 item 1367 of 2011, as amended),
Government Statement of 13 March 2023 on the entry into force of the amendments to Annexes A and B to the Agreement

concerning the international carriage of dangerous goods by road (ADR), done at Geneva on 30 September 1957.
Law dated 8 January 2013 on waste. (Journal of Laws 2013 item 21 as amended)
Law dated 13 June 2013 on the management of packaging and packaging waste. (Journal of Laws 2013 item 888 as amended),
Announcement of the Minister of Health of 2 March 2015 on the announcement of the consolidated text of the Regulation of the Minister of Health on the labelling of packaging of hazardous substances and hazardous mixtures and certain mixtures (Journal of Laws 2015, item 450)
Law dated 25 February 2011 on chemical substances and their mixtures (Journal of Laws 2011 No. 63 item 322, as amended),
Law dated 26 June 1974 Labour Code (consolidated text: Dz.U. 21 item 94 of 1998 as amended),
Regulation of the Minister of Family, Labour and Social Policy of 24 June 2024 on the maximum permissible concentrations and intensities of factors harmful to health in the work environment (Item 1017 with later amendments).
Regulation of the Minister of Climate of 2 January 2020 on the waste catalogue (Journal of Laws 2020, item 10).

15.2 Chemical safety assessment.

A chemical safety assessment was carried out for the substance.
Annex XIV of the REACH Regulation – List of substances subject to authorisation: not applicable
SVHC substances - Candidate list of substances of very high concern awaiting authorisation: not applicable
Annex XVII of the REACH Regulation – Restrictions on the production, placing on the market and use of certain dangerous substances, mixtures and articles: not applicable

SECTION 16. Other information.

H phrases:

H290 May be corrosive to metals.
H314 Causes severe skin burns and eye damage.
H335 May cause respiratory irritation.

Description of abbreviations, acronyms and symbols used:

Met. Corr. 1 – May be corrosive to metals cat. 1
Skin Corr. 1B – Skin corrosive cat. 1B
STOT SE 3 – May cause respiratory irritation cat. 3
NDS – Maximum allowable concentration
NDSP – Maximum allowable ceiling concentration
NDSCh – Maximum allowable momentary concentration.
DNEL – Level of exposure to a substance above which humans should not be exposed.
PNEC – concentration of chemical which marks the limit at which below no adverse effects of exposure in ecosystem are measured.
LC50 - (lethal concentration) - median lethal concentration, a statistically determined concentration of a substance, after exposure to which 50 percent of the organisms (exposed to the substance) can be expected to die during the exposure or during a specified contractual post-exposure period.
LD50 - (lethal dose) - medial lethal dose, the statistically determined size of a single dose of a substance, after administration of which 50% of exposed test organisms can be expected to die.
EC50 - (effective concentration) - medial effective concentration, statistically calculated concentration that induces in the environmental medium the specified effect in 50% of the experimental organisms under specified conditions
NOEC (no observed effects concentration) - the highest concentration for which there is no statistically or biologically significant increase in the frequency or severity of the effects of the substance in the test organisms relative to the control sample.
vPvB - Very persistent and very bioaccumulative substance
PBT - persistent, bioaccumulative and toxic substances
ADR – European agreement on the road transport of hazardous goods.
RID – Regulations Concerning the International Carriage of Dangerous Goods by Rail
IMDG – International Maritime Dangerous Goods Code
IATA – Regulation on the transport of dangerous goods issued by the International Air Transport Association

Trainings:

Before starting work with the product it is mandatory to subject employees to EHS training in connection with the presence of chemical factors in work environment. Conduct, document and familiarize employees with the results of the occupational risk assessment at the work station related to the presence of chemical factors.

SOURCE MATERIALS:

Annex to Regulation (EU) 2020/878 of 18 June 2020.
Regulations mentioned in section 15 of the MSDS.

Changes to the previous version:

Section	Description

The information contained in the safety data sheet applies only to the product listed in title. Data contained in safety data sheet should be treated only as an help for safe use of the product. Since conditions of storage, transport and use are beyond our control they cannot constitute a guarantee in the legal sense. In each case the statutory provisions and any rights of third parties must be observed. Safety data sheet does not constitute an assessment of hazards in the workplace. The product should not be used for purposes other than those specified in section 1 without prior consultation with TOMCHEM Sp. z o.o.

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