

Hydrochloric Acid, 50% v/v

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Date of issue: 07/03/2013

Version: 1.0

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

1.1. Product identifier

Product form : Mixture
Product name. : Hydrochloric Acid, 50% v/v
Product code : LC15130

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

Use of the substance/mixture : For laboratory and manufacturing use only.

1.3. Details of the supplier of the safety data sheet

LabChem Inc
Jackson's Pointe Commerce Park Building 1000, 1010 Jackson's Pointe Court
16063 Zelienople, PA - USA
T 412-826-5230 - F 724-473-0647
info@labchem.com - www.labchem.com

1.4. Emergency telephone number

Emergency number : CHEMTREC: 1-800-424-9300 or 011-703-527-3887

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GHS-US classification

Skin Corr. 1B H314
Eye Dam. 1 H318
STOT SE 3 H335

2.2. Label elements

GHS-US labelling

Hazard pictograms (GHS-US) :



GHS05

GHS07

Signal word (GHS-US) : Danger

Hazard statements (GHS-US) : H314 - Causes severe skin burns and eye damage
H335 - May cause respiratory irritation

Precautionary statements (GHS-US) : P260 - Do not breathe mist, vapours, spray
P264 - Wash exposed skin thoroughly after handling
P271 - Use only outdoors or in a well-ventilated area
P280 - Wear protective gloves, eye protection, protective clothing, face protection
P301+P330+P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting
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 person to fresh air and keep comfortable for breathing
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/doctor/...
P363 - Wash contaminated clothing before reuse
P403+P233 - Store in a well-ventilated place. Keep container tightly closed
P405 - Store locked up
P501 - Dispose of contents/container to comply with local, state and federal regulations

2.3. Other hazards

Other hazards not contributing to the classification : None.

2.4. Unknown acute toxicity (GHS US)

No data available

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable
Full text of H-phrases: see section 16

3.2. Mixture

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| Name | Product identifier | % | GHS-US classification |
|----------------------------|--------------------|-------|---|
| Water | (CAS No) 7732-18-5 | 79.92 | Not classified |
| Hydrochloric Acid, 37% w/w | (CAS No) 7647-01-0 | 20.08 | Acute Tox. 4 (Oral), H302 Skin Corr. 1B, H314 Eye Dam. 1, H318 STOT SE 3, H335 |

SECTION 4: First aid measures

4.1. Description of first aid measures

| | |
|---------------------------------------|--|
| First-aid measures general | : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible). |
| First-aid measures after inhalation | : Remove to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/physician. |
| First-aid measures after skin contact | : Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Immediately call a POISON CENTER or doctor/physician. |
| First-aid measures after eye contact | : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician. |
| First-aid measures after ingestion | : Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER or doctor/physician. |

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

| | |
|--------------------------------------|---|
| Symptoms/injuries | : Causes severe skin burns and eye damage. |
| Symptoms/injuries after inhalation | : Possible inflammation of the respiratory tract. |
| Symptoms/injuries after skin contact | : Caustic burns/corrosion of the skin. |
| Symptoms/injuries after eye contact | : Causes serious eye damage. |
| Symptoms/injuries after ingestion | : Nausea. Vomiting. Irritation of the gastric/intestinal mucosa. Diarrhoea. |
| Chronic symptoms | : Affection/discolouration of the teeth. |

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

Obtain medical assistance.

SECTION 5: Firefighting measures

5.1. Extinguishing media

| | |
|--------------------------------|--|
| Suitable extinguishing media | : Foam. Dry powder. Carbon dioxide. Water spray. Sand. |
| Unsuitable extinguishing media | : Do not use a heavy water stream. |

5.2. Special hazards arising from the substance or mixture

| | |
|------------------|--|
| Fire hazard | : Not flammable. |
| Explosion hazard | : Not applicable. |
| Reactivity | : Thermal decomposition generates : Corrosive vapours. |

5.3. Advice for firefighters

| | |
|--------------------------------|---|
| Firefighting instructions | : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Avoid (reject) fire-fighting water to enter environment. |
| Protection during firefighting | : Do not enter fire area without proper protective equipment, including respiratory protection. |
| Other information | : Not applicable. |

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

| | |
|------------------|--|
| General measures | : Try to stop release. Dike and contain spill. |
|------------------|--|

6.1.1. For non-emergency personnel

| | |
|----------------------|---|
| Protective equipment | : Gloves. Safety glasses. Protective clothing. Face-shield. |
| Emergency procedures | : Evacuate unnecessary personnel. |

6.1.2. For emergency responders

| | |
|----------------------|--|
| Protective equipment | : Equip cleanup crew with proper protection. |
| Emergency procedures | : Ventilate area. |

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

| | |
|-------------------------|--|
| Methods for cleaning up | : Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials. |
|-------------------------|--|

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

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SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Precautions for safe handling : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapour. Do not breathe mist, vapours, spray.
- Hygiene measures : Wash exposed skin thoroughly after handling. Wash contaminated clothing before reuse.

7.2. Conditions for safe storage, including any incompatibilities

- Technical measures : Comply with applicable regulations.
- Storage conditions : Keep only in the original container in a cool, well ventilated place away from : incompatible materials. Keep container closed when not in use.
- Incompatible products : metals. cyanides. Strong bases. Strong acids.
- Incompatible materials : Direct sunlight.
- Packaging materials : Do not store in corrodable metal.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.2. Exposure controls

- Appropriate engineering controls : Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.
- Personal protective equipment : Avoid all unnecessary exposure.
- Hand protection : Wear protective gloves.
- Eye protection : Chemical goggles or face shield.
- Skin and body protection : Wear suitable protective clothing.
- Respiratory protection : Wear appropriate mask.
- Other information : Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

- Physical state : Liquid
- Molecular mass : 36.46 g/mol
- Colour : Colourless.
- Odour : Odourless.
- Odour threshold : No data available
- pH : ≤ 0.5
- Relative evaporation rate (butylacetate=1) : No data available
- Melting point : No data available
- Freezing point : No data available
- Boiling point : No data available
- Flash point : No data available
- Self ignition temperature : No data available
- Decomposition temperature : No data available
- Flammability (solid, gas) : No data available
- Vapour pressure : No data available
- Relative vapour density at 20 °C : No data available
- Relative density : No data available
- Density : 1 - 1.1
- Solubility : Soluble in water. Soluble in ethanol. Soluble in methanol.
- Log Pow : No data available
- Log Kow : No data available
- Viscosity, kinematic : No data available
- Viscosity, dynamic : No data available
- Explosive properties : Not applicable.
- Oxidising properties : None.
- Explosive limits : No data available

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9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Thermal decomposition generates : Corrosive vapours.

10.2. Chemical stability

Stable under normal conditions. Not established.

10.3. Possibility of hazardous reactions

Reacts violently with (some) bases: release of heat.

10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures.

10.5. Incompatible materials

metals. cyanides. Strong bases.

10.6. Hazardous decomposition products

Hydrogen chloride. Thermal decomposition generates : Corrosive vapours.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

Hydrochloric Acid, 37% w/w (7647-01-0)

| | |
|--------------------|------------|
| LD50 oral rat | 700 mg/kg |
| LD50 dermal rabbit | 5010 mg/kg |

Water (7732-18-5)

| | |
|---------------|---------------|
| LD50 oral rat | ≥ 90000 mg/kg |
|---------------|---------------|

Skin corrosion/irritation : Causes severe skin burns and eye damage.

pH: ≤ 0.5

Serious eye damage/irritation : Causes serious eye damage.

pH: ≤ 0.5

Respiratory or skin sensitisation : Not classified

Germ cell mutagenicity : Not classifiedBased on available data, the classification criteria are not met

Carcinogenicity : Not classified

Hydrochloric Acid, 37% w/w (7647-01-0)

| | |
|------------|---|
| IARC group | 3 |
|------------|---|

Reproductive toxicity : Not classifiedBased on available data, the classification criteria are not met

Specific target organ toxicity (single exposure) : May cause respiratory irritation.

Specific target organ toxicity (repeated exposure) : Not classifiedBased on available data, the classification criteria are not met

Aspiration hazard : Not classifiedBased on available data, the classification criteria are not met

Potential Adverse human health effects and symptoms : Based on available data, the classification criteria are not met.

Symptoms/injuries after inhalation : Possible inflammation of the respiratory tract.

Symptoms/injuries after skin contact : Caustic burns/corrosion of the skin.

Symptoms/injuries after eye contact : Causes serious eye damage.

Symptoms/injuries after ingestion : Nausea. Vomiting. Irritation of the gastric/intestinal mucosa. Diarrhoea.

Chronic symptoms : Affection/discolouration of the teeth.

SECTION 12: Ecological information

12.1. Toxicity

Hydrochloric Acid, 37% w/w (7647-01-0)

| | |
|----------------|---|
| LC50 fishes 1 | 282 mg/l (96 h; Gambusia affinis; PURE SUBSTANCE) |
| EC50 Daphnia 1 | < 56 mg/l (72 h; Daphnia magna; PURE SUBSTANCE) |
| LC50 fish 2 | 862 mg/l (Leuciscus idus; PURE SUBSTANCE) |
| TLM fish 1 | 282 ppm (96 h; Gambusia affinis; PURE SUBSTANCE) |

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12.2. Persistence and degradability

Hydrochloric Acid, 50% v/v

| | |
|-------------------------------|------------------|
| Persistence and degradability | Not established. |
|-------------------------------|------------------|

Hydrochloric Acid, 37% w/w (7647-01-0)

| | |
|---------------------------------|--|
| Persistence and degradability | Biodegradability: not applicable. No (test) data on mobility of the components of the mixture available. |
| Biochemical oxygen demand (BOD) | Not applicable |
| Chemical oxygen demand (COD) | Not applicable |
| ThOD | Not applicable |
| BOD (% of ThOD) | Not applicable |

12.3. Bioaccumulative potential

Hydrochloric Acid, 50% v/v

| | |
|---------------------------|------------------|
| Bioaccumulative potential | Not established. |
|---------------------------|------------------|

Hydrochloric Acid, 37% w/w (7647-01-0)

| | |
|---------------------------|--|
| Log Pow | 0.25 (QSAR) |
| Bioaccumulative potential | Low potential for bioaccumulation (Log Kow < 4). |

12.4. Mobility in soil

Hydrochloric Acid, 37% w/w (7647-01-0)

| | |
|----------------|---|
| Ecology - soil | May be harmful to plant growth, blooming and fruit formation. |
|----------------|---|

12.5. Other adverse effects

Other information : Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

| | |
|--------------------------------|---|
| Waste disposal recommendations | : Dispose in a safe manner in accordance with local/national regulations. |
| Ecology - waste materials | : Avoid release to the environment. |

SECTION 14: Transport information

In accordance with ADR / RID / ADNR / IMDG / ICAO / IATA

14.1. UN number

| | |
|-------------|--------|
| UN-No.(DOT) | : 1789 |
| DOT NA no. | UN1789 |

14.2. UN proper shipping name

| | |
|---|---|
| DOT Proper Shipping Name | : Hydrochloric acid |
| Department of Transportation (DOT) Hazard Classes | : 8 - Class 8 - Corrosive material 49 CFR 173.136 |
| Hazard labels (DOT) | : 8 - Corrosive substances |



| | |
|---------------------|----------------------|
| Packing group (DOT) | : II - Medium Danger |
|---------------------|----------------------|

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| | |
|---|---|
| DOT Special Provisions (49 CFR 172.102) | : A3 - For combination packagings, if glass inner packagings (including ampoules) are used, they must be packed with absorbent material in tightly closed metal receptacles before packing in outer packagings. A6 - For combination packagings, if plastic inner packagings are used, they must be packed in tightly closed metal receptacles before packing in outer packagings. B3 - MC 300, MC 301, MC 302, MC 303, MC 305, and MC 306 and DOT 406 cargo tanks and DOT 57 portable tanks are not authorized. B15 - Packagings must be protected with non-metallic linings impervious to the lading or have a suitable corrosion allowance. IB2 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized. N41 - Metal construction materials are not authorized for any part of a packaging which is normally in contact with the hazardous material. T8 - 4 178.274(d)(2) Normal..... Prohibited TP2 - a. The maximum degree of filling must not exceed the degree of filling determined by the following: (image) Where: tr is the maximum mean bulk temperature during transport, tf is the temperature in degrees celsius of the liquid during filling, and is the mean coefficient of cubical expansion of the liquid between the mean temperature of the liquid during filling (tf) and the maximum mean bulk temperature during transportation (tr) both in degrees celsius. b. For liquids transported under ambient conditions may be calculated using the formula: (image) Where: d15 and d50 are the densities (in units of mass per unit volume) of the liquid at 15 C (59 F) and 50 C (122 F), respectively. TP12 - This material is considered highly corrosive to steel. |
| DOT Packaging Exceptions (49 CFR 173.xxx) | : 154 |
| DOT Packaging Non Bulk (49 CFR 173.xxx) | : 202 |
| DOT Packaging Bulk (49 CFR 173.xxx) | : 242 |

14.3. Additional information

| | |
|-------------------|---|
| Other information | : No supplementary information available. |
|-------------------|---|

Overland transport

No additional information available

Transport by sea

| | |
|-----------------------------|---|
| DOT Vessel Stowage Location | : C - The material must be stowed "on deck only" on a cargo vessel and on a passenger vessel. |
|-----------------------------|---|

Air transport

DOT Quantity Limitations Passenger aircraft/rail : 1 L
(49 CFR 173.27)

DOT Quantity Limitations Cargo aircraft only (49 : 30 L
CFR 175.75)

SECTION 15: Regulatory information

15.1. US Federal regulations

| Hydrochloric Acid, 50% v/v | |
|---|---------------------------------|
| SARA Section 311/312 Hazard Classes | Immediate (acute) health hazard |
| Hydrochloric Acid, 37% w/w (7647-01-0) | |
| Listed on the United States TSCA (Toxic Substances Control Act) inventory | |
| RQ (Reportable quantity, section 304 of EPA's List of Lists) : | 5000 lb |
| SARA Section 311/312 Hazard Classes | Immediate (acute) health hazard |

15.2. International regulations

CANADA

| Hydrochloric Acid, 50% v/v | |
|--|------------------------------|
| WHMIS Classification | Class E - Corrosive Material |
| Hydrochloric Acid, 37% w/w (7647-01-0) | |
| Listed on the Canadian DSL (Domestic Substances List) inventory. | |
| WHMIS Classification | Class E - Corrosive Material |

EU-Regulations

No additional information available

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

Classification according to Directive 67/548/EEC or 1999/45/EC

Not classified

15.2.2. National regulations

Hydrochloric Acid, 37% w/w (7647-01-0)

Listed on the Canadian Ingredient Disclosure List

15.3. US State regulations

Hydrochloric Acid, 37% w/w (7647-01-0)

U.S. - Pennsylvania - RTK (Right to Know) List
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Massachusetts - Right To Know List

SECTION 16: Other information

Indication of changes : Revision - See : *

Other information : None.

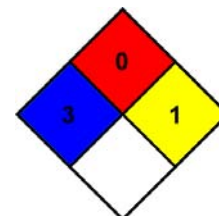
Full text of H-phrases: see section 16:

| | |
|---------------------|--|
| Acute Tox. 4 (Oral) | Acute toxicity (oral), Category 4 |
| Eye Dam. 1 | Serious eye damage/eye irritation, Category 1 |
| Skin Corr. 1B | Skin corrosion/irritation, Category 1B |
| STOT SE 3 | Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation |
| H302 | Harmful if swallowed |
| H314 | Causes severe skin burns and eye damage |
| H318 | Causes serious eye damage |
| H335 | May cause respiratory irritation |

NFPA health hazard : 3 - Short exposure could cause serious temporary or residual injury even though prompt medical attention was given.

NFPA fire hazard : 0 - Materials that will not burn.

NFPA reactivity : 1 - Normally stable, but can become unstable at elevated temperatures and pressures or may react with water with some release of energy, but not violently.



HMIS III Rating

Health : 3 Serious Hazard - Major injury likely unless prompt action is taken and medical treatment is given

Flammability : 0 Minimal Hazard

Physical : 1 Slight Hazard

Personal Protection : H

SDS US (GHS HazCom 2012)

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