Safety Data Sheet

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Revision date: 13.08.2015  Version: 1.0  Print date: 13.08.2015

SECTION 1: Identification

Product identifier

<table>
<thead>
<tr>
<th>Trade name/designation:</th>
<th>o-Tolidine hydrochloric solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product No.:</td>
<td>BDH7241</td>
</tr>
<tr>
<td>Substance name:</td>
<td></td>
</tr>
<tr>
<td>CAS No.:</td>
<td></td>
</tr>
<tr>
<td>INDEX No.:</td>
<td>000-000-00-0</td>
</tr>
<tr>
<td>REACH registration No.:</td>
<td>Not yet communicated down the supply chain.</td>
</tr>
<tr>
<td>Other means of identification:</td>
<td></td>
</tr>
</tbody>
</table>

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

Relevant identified uses: General chemical reagent

Details of the supplier of the safety data sheet

United States of America

VWR International LLC

<table>
<thead>
<tr>
<th>Street</th>
<th>Radnor Corporate Center</th>
</tr>
</thead>
<tbody>
<tr>
<td>Postal code/city</td>
<td>Radnor, PA 19087-8660</td>
</tr>
<tr>
<td>Telephone</td>
<td>+1-610-386-1700</td>
</tr>
<tr>
<td>Telefax</td>
<td>+1-610-728-2103</td>
</tr>
<tr>
<td>E-mail (competent person)</td>
<td><a href="mailto:NAMSDS@vwr.com">NAMSDS@vwr.com</a></td>
</tr>
</tbody>
</table>

Emergency telephone

Telephone                   | +1-800-424-9300 (Chemtrec, 24 hrs/day, 7 days/week, USA) |
Canada

VWR International Co.
Street 2360 Argentia Road
Postal code/city Mississauga, ON, L5N 5Z7
Telephone 800-932-5000
E-mail www.vwr.com

Emergency telephone
Telephone +1-613-996-6666 (Canutec, 24 hrs/day, 7 days/week, Canada)

SECTION 2: Hazards identification

Classification of the substance or mixture
Classification according GHS

<table>
<thead>
<tr>
<th>Hazard classes and hazard categories</th>
<th>Hazard statements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Substance or mixture corrosive to metals, category 1</td>
<td>H290</td>
</tr>
</tbody>
</table>

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

Label elements
Labelling according GHS

Hazard pictograms

Signal word: Warning

<table>
<thead>
<tr>
<th>Hazard statements</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>H290</td>
<td>May be corrosive to metals.</td>
</tr>
</tbody>
</table>
**Precautionary statements**

<table>
<thead>
<tr>
<th>P234</th>
<th>Keep only in original container.</th>
</tr>
</thead>
<tbody>
<tr>
<td>P390</td>
<td>Absorb spillage to prevent material damage.</td>
</tr>
<tr>
<td>P406</td>
<td>Store in corrosive resistant container with a resistant inner liner.</td>
</tr>
</tbody>
</table>

**Labelling (67/548/EEC or 1999/45/EC)**

**Hazard symbols**

<table>
<thead>
<tr>
<th>R-phrases</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>S-phrases</td>
<td></td>
</tr>
</tbody>
</table>

**Other hazards**

| SVHC | No |

**SECTION 3: Composition / information on ingredients**

**Hazardous ingredients Classification according to the OSHA Hazard Communication Standard 29 CFR 1910.1200**

<table>
<thead>
<tr>
<th>Substance name</th>
<th>Concentration</th>
<th>Product identifier</th>
<th>Hazard classes and hazard categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>o-Tolidine</td>
<td>0.1-1%</td>
<td>CAS No.: 119-93-7</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>EC No.: 204-358-0</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>REACH No.: Not yet communicated down the supply chain.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Carcinogenicity, category 1B - H350</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Acute toxicity, category 4, oral - H302</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hazardous to the aquatic environment, chronic, category 2 - H411</td>
<td></td>
</tr>
<tr>
<td>Hydrochloric acid</td>
<td>5-15%</td>
<td>CAS No.: 7647-01-0</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>EC No.: 231-595-7</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>REACH No.: Not yet communicated down the supply chain.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Skin corrosion, category 1B - H314</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Specific target organ toxicity (single exposure), category 3, vascular - H335</td>
<td></td>
</tr>
</tbody>
</table>

**Hazardous ingredients Classification according to 67/548/EEC**

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<td></td>
<td>REACH No.: Not yet communicated down the supply chain.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>T, Carcinogenic Cat. 1 (Carc. Cat. 1), R45</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>Xn, Harmful, R22</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>N, Dangerous for the environment, R51/53</td>
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</tr>
<tr>
<td>Hydrochloric acid</td>
<td>5-15%</td>
<td>CAS No.: 7647-01-0</td>
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<td></td>
<td>REACH No.: Not yet communicated down the supply chain.</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>C, Corrosive, R34</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Xi, Irritant, R37</td>
<td></td>
</tr>
</tbody>
</table>
SECTION 4: First aid measures

General information
When in doubt or if symptoms are observed, get medical advice. If unconscious place in recovery position and seek medical advice. Never give anything by mouth to an unconscious person or a person with cramps. Change contaminated, saturated clothing. Do not leave affected person unattended.

After inhalation
Remove casualty to fresh air and keep warm and at rest. If breathing is irregular or stopped, administer artificial respiration. In case of respiratory tract irritation, consult a physician.

In case of skin contact
After contact with skin, wash immediately with plenty of water and soap. Remove contaminated, saturated clothing immediately. In case of skin reactions, consult a physician.

After eye contact
In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist. Protect uninjured eye. Remove contact lenses, if present and easy to do. Continue rinsing.

In case of ingestion
If accidentally swallowed rinse the mouth with plenty of water (only if the person is conscious) and obtain immediate medical attention. Do NOT induce vomiting. Give nothing to eat or drink.

Most important symptoms and effects, both acute and delayed
no data available

Indication of any immediate medical attention and special treatment needed
no data available

Self-protection of the first aider
First aider: Pay attention to self-protection!

Information to physician
no data available

SECTION 5: Firefighting measures

Extinguishing media
Suitable extinguishing media
Co-ordinate fire-fighting measures to the fire surroundings.

Extinguishing media which must not be used for safety reasons
no data available

Special hazards arising from the substance or mixture
In case of fire may be liberated: Pyrolysis products, toxic

Advice for firefighters
DO NOT fight fire when fire reaches explosives. In case of fire: Wear self-contained breathing apparatus.

Additional information
Do not allow run-off from fire-fighting to enter drains or water courses. Do not inhale explosion and combustion gases. Use caution when applying carbon dioxide in confined spaces. Carbon dioxide can displace oxygen. Use water spray jet to protect personnel and to cool endangered containers.
SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures
In case of major fire and large quantities: Remove persons to safety. Use personal protection equipment. Stop leak if safe to do so. Eliminate all ignition sources if safe to do so.

Environmental precautions
Do not allow to enter into surface water or drains. Discharge into the environment must be avoided. Ensure waste is collected and contained.

Methods and material for containment and cleaning up
Spilled product must never be returned to the original container for recycling. Clean contaminated objects and areas thoroughly observing environmental regulations. Collect in closed and suitable containers for disposal.

Additional information
Clear spills immediately.

SECTION 7: Handling and storage

Precautions for safe handling
All work processes must always be designed so that the following is as low as possible: Inhalation skin contact Eye contact Use extractor hood (laboratory). If handled uncovered, arrangements with local exhaust ventilation have to be used. If local exhaust ventilation is not possible or not sufficient, the entire working area must be ventilated by technical means.

Conditions for safe storage, including any incompatibilities
storage temperature:
Storage class:
Keep in a cool, well-ventilated place. Keep/Store only in original container.

Specific end use(s)
no data available

SECTION 8: Exposure controls/personal protection

Control parameters

<table>
<thead>
<tr>
<th>Ingredient (Designation)</th>
<th>Regulatory information</th>
<th>Country</th>
<th>Limit value type (country of origin)</th>
<th>Limit value</th>
<th>Remark</th>
</tr>
</thead>
</table>

Exposure controls

Appropriate engineering controls
Technical measures and the application of suitable work processes have priority over personal protection equipment. If handled uncovered, arrangements with local exhaust ventilation have to be used.

Personal protection equipment
Wear suitable protective clothing. When handling with chemical substances, protective clothing with CE-labels including the four control digits must be worn. For the protection against direct skin contact, body protective clothing is essential (in addition to the usual working clothes).

Eye/face protection
Eye glasses with side protection DIN-/EN-Norms: DIN EN 166
Recommendation: VWR 111-0432

Skin protection
no data available
### By short-term hand contact

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>No data available</th>
</tr>
</thead>
<tbody>
<tr>
<td>Suitable material</td>
<td>No data available</td>
</tr>
<tr>
<td>Thickness of the glove material</td>
<td>No data available</td>
</tr>
<tr>
<td>Breakthrough time (maximum wearing time)</td>
<td>No data available</td>
</tr>
<tr>
<td>Recommended glove articles</td>
<td>No data available</td>
</tr>
</tbody>
</table>

### By long-term hand contact

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>No data available</th>
</tr>
</thead>
<tbody>
<tr>
<td>Suitable material</td>
<td>No data available</td>
</tr>
<tr>
<td>Thickness of the glove material</td>
<td>No data available</td>
</tr>
<tr>
<td>Breakthrough time (maximum wearing time)</td>
<td>No data available</td>
</tr>
<tr>
<td>Recommended glove articles</td>
<td>No data available</td>
</tr>
</tbody>
</table>

### Respiratory protection

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>No data available</th>
</tr>
</thead>
<tbody>
<tr>
<td>Suitable respiratory protection apparatus</td>
<td>Recommendation</td>
</tr>
<tr>
<td>Suitable material</td>
<td>No data available</td>
</tr>
<tr>
<td>Recommendation</td>
<td>No data available</td>
</tr>
</tbody>
</table>

### Additional information

Wash hands before breaks and after work. Avoid contact with skin and eyes. When using do not eat, drink or smoke. Provide eye shower and label its location conspicuously.

### Environmental exposure controls

No data available
SECTION 9: Physical and chemical properties

Information on basic physical and chemical properties
(a) Appearance
   Physical state: liquid
   Colour: no data available
(b) Odour: no data available
(c) Odour threshold: no data available

Safety relevant basic data
(d) pH: no data available
(e) Melting point/freezing point: no data available
(f) Initial boiling point and boiling range: no data available
(g) Flash point: no data available
(h) Evaporation rate: no data available
(i) Flammability (solid, gas): not applicable
(j) Upper/lower flammability or explosive limits
   Lower explosion limit: no data available
   Upper explosion limit: no data available
(k) Vapour pressure: no data available
(l) Vapour density: no data available
(m) Relative density: no data available
(n) Solubility(ies)
   at 20 °C: no data available
   Soluble (g/L) in: no data available
(o) Partition coefficient: n-octanol/water: no data available
(p) Auto-ignition temperature: no data available
(q) Decomposition temperature: no data available
(r) Viscosity
   Kinematic viscosity: no data available
   Dynamic viscosity: no data available
(s) Explosive properties: not applicable
(t) Oxidising properties: not applicable

Other information
Bulk density: no data available
Refraction index: no data available
Dissociation constant: no data available
Surface tension: no data available
Henry constant: no data available

SECTION 10: Stability and reactivity

Reactivity
no data available

Chemical stability
no data available
Possibility of hazardous reactions
no data available

Conditions to avoid
no data available

Incompatible materials
no data available

Hazardous decomposition products
no data available

Additional information
no data available

SECTION 11: Toxicological information

Information on toxicological effects

Acute effects
Acute oral toxicity:
no data available

Acute dermal toxicity:
no data available

Acute inhalation toxicity:
no data available

Irritant and corrosive effects
Primary irritation to the skin:
not applicable

Irritation to eyes:
not applicable

Irritation to respiratory tract:
not applicable

Respiratory or skin sensitisation
In case of skin contact: not sensitising
After inhalation: not sensitising

STOT-single exposure
not applicable

STOT-repeated exposure
not applicable

CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)
Carcinogenicity
No indication of human carcinogenicity.

Germ cell mutagenicity
No indications of human germ cell mutagenicity exist.
Reproductive toxicity
No indications of human reproductive toxicity exist.

Aspiration hazard
not applicable

Other adverse effects
no data available

Additional information
no data available

SECTION 12: Ecological information

Ecotoxicity

Acute (short-term) fish toxicity:
no data available

Chronic (long-term) fish toxicity:
no data available

Acute (short-term) daphnia toxicity:
no data available

Chronic (long-term) daphnia toxicity:
no data available

Acute (short-term) algae toxicity:
no data available

Chronic (long-term) algae toxicity:
no data available

Persistence and degradability
no data available

Bioaccumulative potential
Partition coefficient: n-octanol/water: no data available

Mobility in soil:
no data available

Results of PBT/vPvB assessment
no data available

Other adverse effects
no data available
SECTION 13: Disposal considerations

Waste treatment methods

Appropriate disposal / Product
Dispose according to local legislation. Consult the appropriate local waste disposal expert about waste disposal.

Waste code product: no data available

Appropriate disposal / Package
Dispose according to local legislation. Handle contaminated packages in the same way as the substance itself.

Additional information
no data available

SECTION 14: Transport information

Land transport (ADR/RID)

UN-No.: 1789
Proper Shipping Name: HYDROCHLORIC ACID
Class(es): 8
Classification code: C1
Hazard label(s): 8
Packing group: III
Environmental hazards: No
Special precautions for user:
Hazard identification number (Kemler No.): 80
tunnel restriction code: E
(Passage forbidden through tunnels of category E.)

Sea transport (IMDG)

UN-No.: 1789
Proper Shipping Name: HYDROCHLORIC ACID
Class(es): 8
Classification code: C1
Hazard label(s): 8
Packing group: III
Environmental hazards: No
MARINE POLLUTANT: No
Special precautions for user:
Segregation group: 1
EmS-No. F-A S-B
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code not relevant
**Air transport (ICAO-TI / IATA-DGR)**

<table>
<thead>
<tr>
<th>UN-No.:</th>
<th>1789</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proper Shipping Name:</td>
<td>HYDROCHLORIC ACID</td>
</tr>
<tr>
<td>Class(es):</td>
<td>8</td>
</tr>
<tr>
<td>Classification code:</td>
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</tr>
<tr>
<td>Hazard label(s):</td>
<td>8</td>
</tr>
<tr>
<td>Packing group:</td>
<td>III</td>
</tr>
<tr>
<td>Special precautions for user</td>
<td>not relevant</td>
</tr>
</tbody>
</table>

**SECTION 15: Regulatory information**

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

**General rules**

Water hazard class (WGK): no data available

**California Prop 65 Components**

This product does contain chemicals known to the State of California to cause cancer, birth, or other reproductive defects.

o-Tolidine cancer

**Chemical Safety Assessment**

no data available
SECTION 16: Other information

Abbreviations and acronyms

ACGIH - American Conference of Governmental Industrial Hygiensts
ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road
AGS - Committee on Hazardous Substances (Ausschuss für Gefahrstoffe)
CLP - Regulation on Classification, Labelling and Packaging of Substances and Mixtures
DFG - German Research Foundation (Deutsche Forschungsgemeinschaft)
DOT – U.S. Department of Transportation
Gestis - Information system on hazardous substances of the German Social Accident Insurance (Gefahrstoffinformationssystem der Deutschen Gesetzlichen Unfallversicherung)
IATA-DGR - International Air Transport Association-Dangerous Goods Regulations
ICAO-TI - International Civil Aviation Organization-Technical Instructions
IMDG - International Maritime Code for Dangerous Goods
LTV - Long Term Value
NIOSH - National Institute for Occupational Safety and Health
OSHA - Occupational Safety & Health Administration
PBT - Persistent, Bioaccumulative and Toxic
RID - Regulation concerning the International Carriage of Dangerous Goods by Rail
STV - Short Term Value
SVHC - Substances of Very High Concern
vPvB - very Persistent, very Bioaccumulative

Additional information

Indication of changes: general update

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.