

Safety Data Sheet

acc. to OSHA HCS

Printing date 11/27/2017

Reviewed on 11/27/2017

1 Identification

- **Product identifier**
- **Trade name:** Chromic Acid
10% w/v Solution
- **Article number:** IND203
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
Aqua Solutions, Inc.
6913 Highway 225
DEER PARK, TX 77536
USA
800-256-2586
- **Information department:**
Technical Coordinator
Sherman Nelson sherman@aquasolutions.org
- **Emergency telephone number:**
Chemtrec: 800-424-9300
Canutec: 613-996-6666



2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS03 Flame over circle

Ox. Liq. 1 H271 May cause fire or explosion; strong oxidizer.



GHS06 Skull and crossbones

Acute Tox. 3 H311 Toxic in contact with skin.



GHS08 Health hazard

Resp. Sens. 1 H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Muta. 1B H340 May cause genetic defects.

Carc. 1A H350 May cause cancer.

Repr. 2 H361 Suspected of damaging fertility or the unborn child.

STOT RE 1 H372 Causes damage to organs through prolonged or repeated exposure.



GHS05 Corrosion

Skin Corr. 1A H314 Causes severe skin burns and eye damage.

Eye Dam. 1 H318 Causes serious eye damage.



GHS07

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Acute Tox. 4 H302 Harmful if swallowed.

Skin Sens. 1 H317 May cause an allergic skin reaction.

· **Label elements**

· **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).

· **Hazard pictograms**



GHS03 GHS05 GHS06 GHS08

· **Signal word** *Danger*

· **Hazard-determining components of labeling:**

Chromium (VI) Oxide 99.9%

· **Hazard statements**

May cause fire or explosion; strong oxidizer.

Harmful if swallowed.

Toxic in contact with skin.

Causes severe skin burns and eye damage.

May cause allergy or asthma symptoms or breathing difficulties if inhaled.

May cause an allergic skin reaction.

May cause genetic defects.

May cause cancer.

Suspected of damaging fertility or the unborn child.

Causes damage to organs through prolonged or repeated exposure.

· **Precautionary statements**

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

Keep/Store away from clothing and other combustible materials

Take any precaution to avoid mixing with combustibles.

Do not breathe dusts or mists.

Wash thoroughly after handling.

Do not eat, drink or smoke when using this product.

Contaminated work clothing must not be allowed out of the workplace.

Wear protective gloves/protective clothing/eye protection/face protection.

Wear fire/flame resistant/retardant clothing.

[In case of inadequate ventilation] wear respiratory protection.

If swallowed: Call a poison center/doctor if you feel unwell.

If swallowed: Rinse mouth. Do NOT induce vomiting.

If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

IF INHALED: Remove person to fresh air and keep comfortable for breathing.

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

Continue rinsing.

If on clothing: Rinse immediately contaminated clothing and skin with plenty of water before removing clothes.

IF exposed or concerned: Get medical advice/attention.

Immediately call a poison center/doctor.

Get medical advice/attention if you feel unwell.

Specific treatment (see on this label).

If skin irritation or rash occurs: Get medical advice/attention.

If experiencing respiratory symptoms: Call a poison center/doctor.

Take off immediately all contaminated clothing and wash it before reuse.

In case of fire: Use for extinction: CO2, powder or water spray.

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In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion.
Store locked up.

Dispose of contents/container in accordance with local/regional/national/international regulations.

- **Classification system:**
- **NFPA ratings (scale 0 - 4)**



The substance possesses oxidizing properties.

- **HMIS-ratings (scale 0 - 4)**

HEALTH	3	Health = 3
FIRE	3	Fire = 3
REACTIVITY	0	Reactivity = 0

- **Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

3 Composition/information on ingredients

- **Chemical characterization: Mixtures**
- **Description:** Mixture of the substances listed below with nonhazardous additions.

· **Dangerous components:**

CAS: 1333-82-0	Chromium (VI) Oxide 99.9%	9.408%
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· **Table of Nonhazardous Ingredients**

CAS: 7732-18-5	Water	90.592%
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4 First-aid measures

- **Description of first aid measures**
- **General information:**
Immediately remove any clothing soiled by the product.
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
In case of irregular breathing or respiratory arrest provide artificial respiration.
- **After inhalation:**
Supply fresh air and to be sure call for a doctor.
In case of unconsciousness place patient stably in side position for transportation.
- **After skin contact:** *Immediately wash with water and soap and rinse thoroughly.*
- **After eye contact:** *Rinse opened eye for several minutes under running water. Then consult a doctor.*
- **After swallowing:**
Immediately call a doctor.
Drink copious amounts of water and provide fresh air. Immediately call a doctor.
- **Information for doctor:**
- **Most important symptoms and effects, both acute and delayed** *No further relevant information available.*

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- **Indication of any immediate medical attention and special treatment needed**
 No further relevant information available.

5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:** Use fire fighting measures that suit the environment.
- **Special hazards arising from the substance or mixture** No further relevant information available.
- **Advice for firefighters**
- **Protective equipment:** No special measures required.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
 Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:**
 Dilute with plenty of water.
 Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**
 Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
 Use neutralizing agent.
 Dispose contaminated material as waste according to item 13.
 Ensure adequate ventilation.
- **Reference to other sections**
 See Section 7 for information on safe handling.
 See Section 8 for information on personal protection equipment.
 See Section 13 for disposal information.
- **Protective Action Criteria for Chemicals**

- **PAC-1:**

CAS: 1333-82-0	Chromium (VI) Oxide 99.9%	0.29 mg/m ³
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- **PAC-2:**

CAS: 1333-82-0	Chromium (VI) Oxide 99.9%	5 mg/m ³
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- **PAC-3:**

CAS: 1333-82-0	Chromium (VI) Oxide 99.9%	30 mg/m ³
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7 Handling and storage

- **Handling:**
- **Precautions for safe handling** Ensure good ventilation/exhaustion at the workplace.
- **Information about protection against explosions and fires:** No special measures required.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** Keep receptacle tightly sealed.
- **Specific end use(s)** No further relevant information available.

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8 Exposure controls/personal protection

· **Additional information about design of technical systems:** No further data; see item 7.

· **Control parameters**

· **Components with limit values that require monitoring at the workplace:**

CAS: 1333-82-0 Chromium (VI) Oxide 99.9%

PEL Long-term value: 0.005* mg/m³
 Ceiling limit value: 0.1** mg/m³
 *as Cr(VI) **as CrO₃; see 29 CFR 1910.1026

REL Long-term value: 0.0002 mg/m³
 as Cr; See Pocket Guide Apps. A and C

TLV Short-term value: NIC-0.0005* mg/m³
 Long-term value: (0.05) NIC-0.0002* mg/m³
 as Cr; *inhalable, BEI, NIC-Skin, DSEN, RSEN

· **Ingredients with biological limit values:**

CAS: 1333-82-0 Chromium (VI) Oxide 99.9%

BEI 25 µg/L
 LD50 Intraperitoneal: urine
 Time: end of shift at end of workweek
 LD50: Total chromium (fume)

10 µg/L
 LD50 Intraperitoneal: urine
 Time: increase during shift
 LD50: Total chromium (fume)

· **Additional information:** The lists that were valid during the creation were used as basis.

· **Exposure controls**

· **Personal protective equipment:**

· **General protective and hygienic measures:**

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing.

Wash hands before breaks and at the end of work.

Store protective clothing separately.

Avoid contact with the eyes.

Avoid contact with the eyes and skin.

· **Breathing equipment:**

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

· **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

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- **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

- **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

- **Eye protection:**



Tightly sealed goggles

- **Body protection: Protective work clothing**

9 Physical and chemical properties

- **Information on basic physical and chemical properties**

- **General Information**

- **Appearance:**

Form: Liquid
Color: Clear orange-red-brown

- **Odor:** Odorless

- **Odor threshold:** Not determined.

- **pH-value:** Not determined.

- **Change in condition**

Melting point/Melting range: Undetermined.
Boiling point/Boiling range: 100 °C (212 °F)

- **Flash point:** Not applicable.

- **Flammability (solid, gaseous):** Not applicable.

- **Ignition temperature:**

Decomposition temperature: Not determined.

- **Auto igniting:** Product is not selfigniting.

- **Danger of explosion:** Product does not present an explosion hazard.
Explosive when mixed with combustible material.

- **Explosion limits:**

Lower: Not determined.
Upper: Not determined.

- **Vapor pressure at 20 °C (68 °F):** 23 hPa (17.3 mm Hg)

- **Density at 20 °C (68 °F):** 1.06296 g/cm³ (8.8704 lbs/gal)

- **Relative density** Not determined.

- **Vapor density** Not determined.

- **Evaporation rate** Not determined.

- **Solubility in / Miscibility with**

Water: Fully miscible.

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- **Partition coefficient (n-octanol/water):** Not determined.
- **Viscosity:**
 - Dynamic:** Not determined.
 - Kinematic:** Not determined.
- **Solvent content:**
 - Water:** 90.6 %
 - VOC content:** 0.00 %
 - 0.0 g/l / 0.00 lb/gl
- **Solids content:** 9.4 %
- **Other information** No further relevant information available.

10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**

- **LD/LC50 values that are relevant for classification:**

ATE (Acute Toxicity Estimate)

Oral	LD50	553 mg/kg (rat)
Dermal	LD50	606 mg/kg (rabbit)
Inhalative	LC50/4 h	2,307 mg/l (rat)

CAS: 1333-82-0 Chromium (VI) Oxide 99.9%

Oral	LD50	52 mg/kg (rat)
Dermal	LD50	57 mg/kg (rabbit)
Inhalative	LC50/4 h	217 mg/l (rat)
Irritation of skin	Skin Corrosion/Irritation	(rabbit)

- **Primary irritant effect:**
 - on the skin:** Strong caustic effect on skin and mucous membranes.
 - on the eye:**
 - Strong caustic effect.
 - Strong irritant with the danger of severe eye injury.
- **Sensitization:**
 - Sensitization possible through inhalation.
 - Sensitization possible through skin contact.
- **Additional toxicological information:**
 - The product shows the following dangers according to internally approved calculation methods for preparations:

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*Toxic**Harmful**Corrosive**Irritant*

Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

The product can cause inheritable damage.

· **Carcinogenic categories**

· **IARC (International Agency for Research on Cancer)**

CAS: 1333-82-0	Chromium (VI) Oxide 99.9%	I
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· **NTP (National Toxicology Program)**

CAS: 1333-82-0	Chromium (VI) Oxide 99.9%	K
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· **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

12 Ecological information

· **Toxicity**

· **Aquatic toxicity:** No further relevant information available.

· **Persistence and degradability** No further relevant information available.

· **Behavior in environmental systems:**

· **Bioaccumulative potential** No further relevant information available.

· **Mobility in soil** No further relevant information available.

· **Additional ecological information:**

· **General notes:**

Water hazard class 3 (Self-assessment): extremely hazardous for water

Do not allow product to reach ground water, water course or sewage system, even in small quantities.

Must not reach bodies of water or drainage ditch undiluted or unneutralized.

Danger to drinking water if even extremely small quantities leak into the ground.

· **Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

· **Other adverse effects** No further relevant information available.

13 Disposal considerations

· **Waste treatment methods**

· **Recommendation:**

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

· **Uncleaned packagings:**

· **Recommendation:** Disposal must be made according to official regulations.

· **Recommended cleansing agent:** Water, if necessary with cleansing agents.

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14 Transport information

<ul style="list-style-type: none"> · UN-Number · DOT, IMDG, IATA 	<p style="margin: 0;">UN1755</p>
<ul style="list-style-type: none"> · UN proper shipping name · DOT · IMDG, IATA 	<p style="margin: 0;">Chromic acid solution CHROMIC ACID SOLUTION</p>
<ul style="list-style-type: none"> · Transport hazard class(es) · DOT 	<div style="text-align: center;">  <p style="margin: 0;">CORROSIVE 8</p> </div>
<ul style="list-style-type: none"> · Class · Label 	<p style="margin: 0;">8 Corrosive substances 8</p>
<ul style="list-style-type: none"> · IMDG, IATA 	<div style="text-align: center;">  <p style="margin: 0;">CORROSIVE 8</p> </div>
<ul style="list-style-type: none"> · Class · Label 	<p style="margin: 0;">8 Corrosive substances 8</p>
<ul style="list-style-type: none"> · Packing group · DOT, IMDG, IATA 	<p style="margin: 0;">II</p>
<ul style="list-style-type: none"> · Environmental hazards: · Marine pollutant: 	<p style="margin: 0;">Product contains environmentally hazardous substances: Chromium (VI) Oxide 99.9%</p> <p style="margin: 0;">No</p>
<ul style="list-style-type: none"> · Special precautions for user · Danger code (Kemler): · EMS Number: · Segregation groups · Stowage Category · Stowage Code · Segregation Code 	<p style="margin: 0;">Warning: Corrosive substances</p> <p style="margin: 0;">86</p> <p style="margin: 0;">F-A,S-B</p> <p style="margin: 0;">Acids</p> <p style="margin: 0;">E</p> <p style="margin: 0;">SW2 Clear of living quarters.</p> <p style="margin: 0;">SG6 Segregation as for class 5.1</p> <p style="margin: 0;">SG8 Stow "away from" class 4.1</p> <p style="margin: 0;">SG10 Stow "away from" class 5.1</p> <p style="margin: 0;">SG12 Stow "away from" class 7</p>
<ul style="list-style-type: none"> · Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code 	<p style="margin: 0;">Not applicable.</p>
<ul style="list-style-type: none"> · Transport/Additional information: · DOT · Quantity limitations 	<p style="margin: 0;">On passenger aircraft/rail: 5 L</p> <p style="margin: 0;">On cargo aircraft only: 60 L</p>

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- | | |
|--|---|
| <ul style="list-style-type: none"> · IMDG · Limited quantities (LQ) · Excepted quantities (EQ) | <p>5L
 Code: E1
 Maximum net quantity per inner packaging: 30 ml
 Maximum net quantity per outer packaging: 1000 ml</p> |
| <ul style="list-style-type: none"> · UN "Model Regulation": | <p>UN 1755 CHROMIC ACID SOLUTION, 8, II</p> |

15 Regulatory information

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

<ul style="list-style-type: none"> · Section 355 (extremely hazardous substances):
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None of the ingredients is listed.

<ul style="list-style-type: none"> · Section 313 (Specific toxic chemical listings):
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CAS: 1333-82-0 Chromium (VI) Oxide 99.9%
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<ul style="list-style-type: none"> · TSCA (Toxic Substances Control Act):

Chromium (VI) Oxide 99.9%

Water

<ul style="list-style-type: none"> · Proposition 65

<ul style="list-style-type: none"> · Chemicals known to cause cancer:

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<ul style="list-style-type: none"> · Chemicals known to cause reproductive toxicity for females:
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CAS: 1333-82-0 Chromium (VI) Oxide 99.9%
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<ul style="list-style-type: none"> · Chemicals known to cause reproductive toxicity for males:
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CAS: 1333-82-0 Chromium (VI) Oxide 99.9%
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<ul style="list-style-type: none"> · Chemicals known to cause developmental toxicity:

CAS: 1333-82-0 Chromium (VI) Oxide 99.9%
--

<ul style="list-style-type: none"> · Carcinogenic categories
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<ul style="list-style-type: none"> · EPA (Environmental Protection Agency)
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CAS: 1333-82-0 Chromium (VI) Oxide 99.9%	A(inh), D(oral), K/L(inh), CBD(oral)
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<ul style="list-style-type: none"> · TLV (Threshold Limit Value established by ACGIH)

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<ul style="list-style-type: none"> · NIOSH-Ca (National Institute for Occupational Safety and Health)

CAS: 1333-82-0 Chromium (VI) Oxide 99.9%
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- **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).

- **Hazard pictograms**



GHS03 GHS05 GHS06 GHS08

- **Signal word** Danger

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· **Hazard-determining components of labeling:**

Chromium (VI) Oxide 99.9%

· **Hazard statements**

May cause fire or explosion; strong oxidizer.

Harmful if swallowed.

Toxic in contact with skin.

Causes severe skin burns and eye damage.

May cause allergy or asthma symptoms or breathing difficulties if inhaled.

May cause an allergic skin reaction.

May cause genetic defects.

May cause cancer.

Suspected of damaging fertility or the unborn child.

Causes damage to organs through prolonged or repeated exposure.

· **Precautionary statements**

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

Keep/Store away from clothing and other combustible materials

Take any precaution to avoid mixing with combustibles.

Do not breathe dusts or mists.

Wash thoroughly after handling.

Do not eat, drink or smoke when using this product.

Contaminated work clothing must not be allowed out of the workplace.

Wear protective gloves/protective clothing/eye protection/face protection.

Wear fire/flare resistant/retardant clothing.

[In case of inadequate ventilation] wear respiratory protection.

If swallowed: Call a poison center/doctor if you feel unwell.

If swallowed: Rinse mouth. Do NOT induce vomiting.

If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

IF INHALED: Remove person to fresh air and keep comfortable for breathing.

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

If on clothing: Rinse immediately contaminated clothing and skin with plenty of water before removing clothes.

IF exposed or concerned: Get medical advice/attention.

Immediately call a poison center/doctor.

Get medical advice/attention if you feel unwell.

Specific treatment (see on this label).

If skin irritation or rash occurs: Get medical advice/attention.

If experiencing respiratory symptoms: Call a poison center/doctor.

Take off immediately all contaminated clothing and wash it before reuse.

In case of fire: Use for extinction: CO₂, powder or water spray.

In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion.

Store locked up.

Dispose of contents/container in accordance with local/regional/national/international regulations.

· **National regulations:**

· **Additional classification according to Decree on Hazardous Materials:**

Carcinogenic hazardous material group III (dangerous).

· **Information about limitation of use:**

Workers are not allowed to be exposed to the hazardous carcinogenic materials contained in this preparation.

Exceptions can be made by the authorities in certain cases.

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· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Department issuing SDS:** Environment protection department.

· **Contact:**

· **Date of preparation / last revision**

11-27-2017: review SDS for accuracy. STN

Revision 0.0, 08-11-2015: Creation Date for SDS. STN

11/27/2017 / -

· **Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety & Health

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

BEI: Biological Exposure Limit

Ox. Liq. 1: Oxidizing liquids – Category 1

Acute Tox. 4: Acute toxicity – Category 4

Acute Tox. 3: Acute toxicity – Category 3

Skin Corr. 1A: Skin corrosion/irritation – Category 1A

Eye Dam. 1: Serious eye damage/eye irritation – Category 1

Resp. Sens. 1: Respiratory sensitisation – Category 1

Skin Sens. 1: Skin sensitisation – Category 1

Muta. 1B: Germ cell mutagenicity – Category 1B

Carc. 1A: Carcinogenicity – Category 1A

Repr. 2: Reproductive toxicity – Category 2

STOT RE 1: Specific target organ toxicity (repeated exposure) – Category 1