

# Safety Data Sheet

acc. to OSHA HCS

Printing date 11/11/2022

Reviewed on 11/11/2022

## 1 Identification

- **Product identifier**
- **Trade name:** CRYSTAL VIOLET STIRLING SOLUTION
- **Article number:** 26088-18
- **Application of the substance / the mixture** Laboratory chemicals
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
 Electron Microscopy Sciences  
 1560 Industry Road  
 USA-Hatfield, PA 19440  
 Tel: 215-412-8400 Fax: 215-412-8450  
 email: sgkcck@aol.com  
 www.emsdiasum.com
- **Information department:** Product safety department
- **Emergency telephone number:**  
 ChemTrec 1-800-424-9300 Contract CCN7661  
 1-703-527-3887

## 2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS02 Flame

Flammable Liquids 2

H225 Highly flammable liquid and vapor.



GHS06 Skull and crossbones

Acute Toxicity - Oral 3

H301 Toxic if swallowed.

Acute Toxicity - Inhalation 3

H331 Toxic if inhaled.



GHS08 Health hazard

Germ Cell Mutagenicity 2

H341 Suspected of causing genetic defects.

Carcinogenicity 2

H351 Suspected of causing cancer.

Specific Target Organ Toxicity - Single Exposure 1

H370 Causes damage to organs.

Specific Target Organ Toxicity - Repeated Exposure 1

H372 Causes damage to organs through prolonged or repeated exposure.



GHS07

Acute Toxicity - Dermal 4

H312 Harmful in contact with skin.

Eye Irritation 2A

H319 Causes serious eye irritation.

Sensitization - Skin 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).

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**Trade name: CRYSTAL VIOLET STIRLING SOLUTION**

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· **Hazard pictograms**



· **Signal word** *Danger*

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

*Crystal Violet*  
*Ethyl alcohol*  
*aniline*

· **Hazard statements**

*Highly flammable liquid and vapor.*  
*Toxic if swallowed or if inhaled.*  
*Harmful in contact with skin.*  
*Causes serious eye irritation.*  
*May cause an allergic skin reaction.*  
*Suspected of causing genetic defects.*  
*Suspected of causing cancer.*  
*Causes damage to organs.*  
*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 away from heat/sparks/open flames/hot surfaces. - No smoking.*  
*Ground/bond container and receiving equipment.*  
*Use explosion-proof electrical/ventilating/lighting/equipment.*  
*Use only non-sparking tools.*  
*Take precautionary measures against static discharge.*  
*Do not breathe dust/fume/gas/mist/vapors/spray.*  
*Wash thoroughly after handling.*  
*Do not eat, drink or smoke when using this product.*  
*Use only outdoors or in a well-ventilated area.*  
*Contaminated work clothing must not be allowed out of the workplace.*  
*Wear protective gloves/protective clothing/eye protection/face protection.*  
*If swallowed: Immediately call a poison center/doctor.*  
*Specific treatment (see on this label).*  
*Rinse mouth.*  
*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 exposed or concerned: Get medical advice/attention.*  
*Call a poison center/doctor if you feel unwell.*  
*Get medical advice/attention if you feel unwell.*  
*Take off contaminated clothing and wash it before reuse.*  
*If skin irritation or rash occurs: Get medical advice/attention.*  
*If eye irritation persists: Get medical advice/attention.*  
*Wash contaminated clothing before reuse.*  
*In case of fire: Use CO2, powder or water spray to extinguish.*  
*Store in a well-ventilated place. Keep container tightly closed.*  
*Store in a well-ventilated place. Keep cool.*  
*Store locked up.*

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

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



Health = 3  
Fire = 2  
Reactivity = 0

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



Health = 3  
Fire = 2  
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:**

64-17-5	Ethyl alcohol	>2.5-≤10%
548-62-9	Crystal Violet	>2.5-≤10%
62-53-3	aniline	≤2.5%

### 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.  
Remove breathing apparatus only after contaminated clothing have been completely removed.  
In case of irregular breathing or respiratory arrest provide artificial respiration.
- **After inhalation:**  
Supply fresh air or oxygen; call for 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. If symptoms persist, consult a doctor.
- **After swallowing:** Do not induce vomiting; immediately call for medical help.
- **Information for doctor:**  
· **Most important symptoms and effects, both acute and delayed** No further relevant information available.  
· **Indication of any immediate medical attention and special treatment needed**  
No further relevant information available.

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## 5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:** Use fire fighting measures that suit the environment.
- **For safety reasons unsuitable extinguishing agents:** Water with full jet
- **Special hazards arising from the substance or mixture** No further relevant information available.
- **Advice for firefighters**
- **Protective equipment:** Mouth respiratory protective device.

## 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**  
Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:**  
Inform respective authorities in case of seepage into water course or sewage system.  
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).  
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:

64-17-5	Ethyl alcohol	1,800 ppm
548-62-9	Crystal Violet	0.082 mg/m <sup>3</sup>
62-53-3	aniline	8.0 ppm
67-56-1	Methyl Alcohol	530 ppm

### · PAC-2:

64-17-5	Ethyl alcohol	3300* ppm
548-62-9	Crystal Violet	0.9 mg/m <sup>3</sup>
62-53-3	aniline	12 ppm
67-56-1	Methyl Alcohol	2,100 ppm

### · PAC-3:

64-17-5	Ethyl alcohol	15000* ppm
548-62-9	Crystal Violet	83 mg/m <sup>3</sup>
62-53-3	aniline	20 ppm
67-56-1	Methyl Alcohol	7200* ppm

## 7 Handling and storage

- **Handling:**
- **Precautions for safe handling**  
Ensure good ventilation/exhaustion at the workplace.  
Open and handle receptacle with care.  
Prevent formation of aerosols.

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- **Information about protection against explosions and fires:**  
 Keep ignition sources away - Do not smoke.  
 Protect from heat.  
 Protect against electrostatic charges.  
 Keep respiratory protective device available.
- **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.  
 Protect from heat and direct sunlight.
- **Specific end use(s)** No further relevant information available.

## 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:**  
 The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit.  
 At this time, the remaining constituent has no known exposure limits.

### 64-17-5 Ethyl alcohol

PEL	Long-term value: 1900 mg/m <sup>3</sup> , 1000 ppm
REL	Long-term value: 1900 mg/m <sup>3</sup> , 1000 ppm
TLV	Short-term value: 1000 ppm
A3	

### 62-53-3 aniline

PEL	Long-term value: 19 mg/m <sup>3</sup> , 5 ppm and Homologues; Skin
REL	And Homologues; See Pocket Guide App. A
TLV	Long-term value: 2 ppm Skin; BEI, A3

- **Ingredients with biological limit values:**

### 62-53-3 aniline

BEI	0.5 mg/L Medium: urine Time: end of shift Parameter: Aniline (with hydrolysis)
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- **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.

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- **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*

- **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

## 9 Physical and chemical properties

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

- **General Information**

- **Appearance:**

<b>Form:</b>	Liquid
<b>Color:</b>	Dark blue
<b>Odor:</b>	Alcohol-like
<b>Odor threshold:</b>	Not determined.

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

- **Change in condition**

<b>Melting point/Melting range:</b>	Undetermined.
<b>Boiling point/Boiling range:</b>	78 °C (172.4 °F)

- **Flash point:** Not applicable.

- **Flammability (solid, gaseous):** Flammable.

- **Ignition temperature:** 425 °C (797 °F)

- **Decomposition temperature:** Not determined.

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

- **Danger of explosion:** Not determined.

- **Explosion limits:**

<b>Lower:</b>	Not determined.
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<b>Upper:</b>	Not determined.
· <b>Vapor pressure at 20 °C (68 °F):</b>	23 hPa (17.3 mm Hg)
· <b>Density at 20 °C (68 °F):</b>	0.9789 g/cm <sup>3</sup> (8.16892 lbs/gal)
· <b>Relative density</b>	Not determined.
· <b>Vapor density</b>	Not determined.
· <b>Evaporation rate</b>	Not determined.
· <b>Solubility in / Miscibility with Water:</b>	Not miscible or difficult to mix.
· <b>Partition coefficient (n-octanol/water):</b>	Not determined.
· <b>Viscosity:</b>	
<b>Dynamic:</b>	Not determined.
<b>Kinematic:</b>	Not determined.
· <b>Solvent content:</b>	
<b>Organic solvents:</b>	10.0 %
<b>Water:</b>	83.0 %
<b>VOC content:</b>	10.00 %
	522.0 g/l / 4.36 lb/gal
<b>Solids content:</b>	0.0 %
· <b>Other information</b>	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:**

548-62-9 Crystal Violet

Oral	LD50	420 mg/kg (rat)
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- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** Irritating effect.
- **Sensitization:** Sensitization possible through skin contact.
- **Additional toxicological information:**

The product shows the following dangers according to internally approved calculation methods for preparations:

Toxic

Harmful

Irritant

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· **Carcinogenic categories**

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

64-17-5	Ethyl alcohol	I
548-62-9	Crystal Violet	2B
62-53-3	aniline	2A

· **NTP (National Toxicology Program)**

None of the ingredients is listed.

· **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.

· **Ecotoxicological effects:**

- **Remark:** Toxic for fish

· **Additional ecological information:**

· **General notes:**

Water hazard class 2 (Self-assessment): hazardous for water  
 Do not allow product to reach ground water, water course or sewage system.  
 Danger to drinking water if even small quantities leak into the ground.  
 Also poisonous for fish and plankton in water bodies.  
 Toxic for aquatic organisms

· **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.

## 14 Transport information

· **UN-Number**

· **DOT, ADR, IMDG, IATA** UN2929

· **UN proper shipping name**

· **DOT** Toxic liquids, flammable, organic, n.o.s.

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· **ADR** 2929 *TOXIC LIQUID, FLAMMABLE, ORGANIC, N.O.S. (ANILINE, Crystal Violet), ENVIRONMENTALLY HAZARDOUS*  
 · **IMDG, IATA** *TOXIC LIQUID, FLAMMABLE, ORGANIC, N.O.S. (ANILINE, Crystal Violet)*

· **Transport hazard class(es)**

· **DOT**



· **Class** 6.1 Toxic substances  
 · **Label** 6.1, 3

· **ADR**



· **Class** 6.1 Toxic substances  
 · **Label** 6.1+3

· **IMDG**



· **Class** 6.1 Toxic substances  
 · **Label** 6.1/3

· **IATA**



· **Class** 6.1 Toxic substances  
 · **Label** 6.1 (3)

· **Packing group**

· **DOT, ADR, IMDG, IATA** I

· **Environmental hazards:**

· **Special marking (ADR):** Symbol (fish and tree)

· **Special precautions for user** Warning: Toxic substances

· **Hazard identification number (Kemler code):** 663

· **EMS Number:** F-E,S-D

· **Stowage Category** B

· **Stowage Code** SW2 Clear of living quarters.

· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**

Not applicable.

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· **Transport/Additional information:**

· **DOT**

· **Quantity limitations**

On passenger aircraft/rail: 1 L

On cargo aircraft only: 30 L

· **ADR**

· **Excepted quantities (EQ)**

Code: E5

Maximum net quantity per inner packaging: 1 ml

Maximum net quantity per outer packaging: 300 ml

· **IMDG**

· **Limited quantities (LQ)**

0

· **Excepted quantities (EQ)**

Code: E5

Maximum net quantity per inner packaging: 1 ml

Maximum net quantity per outer packaging: 300 ml

· **UN "Model Regulation":**

UN 2929 TOXIC LIQUID, FLAMMABLE, ORGANIC, N.O.S.  
(ANILINE, CRYSTAL VIOLET), 6.1 (3), I, ENVIRONMENTALLY  
HAZARDOUS

## 15 Regulatory information

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

No further relevant information available.

· **Sara**

· **Section 355 (extremely hazardous substances):**

62-53-3	aniline
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· **Section 313 (Specific toxic chemical listings):**

62-53-3	aniline
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67-56-1	Methyl Alcohol
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· **TSCA (Toxic Substances Control Act):**

All components have the value ACTIVE.

· **Hazardous Air Pollutants**

62-53-3	aniline
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67-56-1	Methyl Alcohol
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· **Proposition 65**

· **Chemicals known to cause cancer:**

548-62-9	Crystal Violet
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62-53-3	aniline
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· **Chemicals known to cause reproductive toxicity for females:**

None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for males:**

None of the ingredients is listed.

· **Chemicals known to cause developmental toxicity:**

64-17-5	Ethyl alcohol
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67-56-1	Methyl Alcohol
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· **Carcinogenic categories**

· <b>EPA (Environmental Protection Agency)</b>		
62-53-3	aniline	B2

· **TLV (Threshold Limit Value)**

64-17-5	Ethyl alcohol	A3
62-53-3	aniline	A3

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

62-53-3	aniline	
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· **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).

· **Hazard pictograms**



GHS02   GHS06   GHS07   GHS08

· **Signal word** *Danger*

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

Crystal Violet  
Ethyl alcohol  
aniline

· **Hazard statements**

Highly flammable liquid and vapor.  
Toxic if swallowed or if inhaled.  
Harmful in contact with skin.  
Causes serious eye irritation.  
May cause an allergic skin reaction.  
Suspected of causing genetic defects.  
Suspected of causing cancer.  
Causes damage to organs.  
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 away from heat/sparks/open flames/hot surfaces. - No smoking.  
Ground/bond container and receiving equipment.  
Use explosion-proof electrical/ventilating/lighting/equipment.  
Use only non-sparking tools.  
Take precautionary measures against static discharge.  
Do not breathe dust/fume/gas/mist/vapors/spray.  
Wash thoroughly after handling.  
Do not eat, drink or smoke when using this product.  
Use only outdoors or in a well-ventilated area.  
Contaminated work clothing must not be allowed out of the workplace.  
Wear protective gloves/protective clothing/eye protection/face protection.  
If swallowed: Immediately call a poison center/doctor.  
Specific treatment (see on this label).  
Rinse mouth.  
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.

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

*IF exposed or concerned: Get medical advice/attention.*

*Call a poison center/doctor if you feel unwell.*

*Get medical advice/attention if you feel unwell.*

*Take off contaminated clothing and wash it before reuse.*

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

*If eye irritation persists: Get medical advice/attention.*

*Wash contaminated clothing before reuse.*

*In case of fire: Use CO2, powder or water spray to extinguish.*

*Store in a well-ventilated place. Keep container tightly closed.*

*Store in a well-ventilated place. Keep cool.*

*Store locked up.*

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

· **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.*

· **Contact:**

· **Date of preparation / last revision** 11/11/2022 / -

· **Abbreviations and acronyms:**

*ADR: Accord relatif au transport international 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*

*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*

*Flammable Liquids 2: Flammable liquids – Category 2*

*Acute Toxicity - Oral 3: Acute toxicity – Category 3*

*Acute Toxicity - Dermal 4: Acute toxicity – Category 4*

*Eye Irritation 2A: Serious eye damage/eye irritation – Category 2A*

*Sensitization - Skin 1: Skin sensitisation – Category 1*

*Germ Cell Mutagenicity 2: Germ cell mutagenicity – Category 2*

*Carcinogenicity 2: Carcinogenicity – Category 2*

*Specific Target Organ Toxicity - Single Exposure 1: Specific target organ toxicity (single exposure) – Category 1*

*Specific Target Organ Toxicity - Repeated Exposure 1: Specific target organ toxicity (repeated exposure) – Category 1*