Semi-Volatiles GC/MS Tuning Standard, Part Number 8500-5995

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

1.1 Product identifier

Product name: Semi-Volatiles GC/MS Tuning Standard, Part Number 8500-5995
Part no.: 8500-5995

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

Material uses: Reagents and Standards for Analytical Chemistry Laboratory Use
1 ml

1.3 Details of the supplier of the safety data sheet

Agilent Technologies Manufacturing GmbH & Co. KG
Hewlett-Packard-Str. 8
76337 Waldbronn
Germany
0800 603 1000

e-mail address of person responsible for this SDS: pdl-msds_author@agilent.com

1.4 Emergency telephone number

Emergency telephone number (with hours of operation): CHEMTREC®: +(44)-870-8200418

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Product definition: Mixture

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

- H350 CARCINOGENICITY Category 1A
- H400 SHORT-TERM (ACUTE) AQUATIC HAZARD Category 1
- H410 LONG-TERM (CHRONIC) AQUATIC HAZARD Category 1

See Section 16 for the full text of the H statements declared above.
See Section 11 for more detailed information on health effects and symptoms.

2.2 Label elements

Hazard pictograms:

Signal word: Danger

Hazard statements: H350 - May cause cancer.
H410 - Very toxic to aquatic life with long lasting effects.

Precautionary statements

Prevention: P201 - Obtain special instructions before use.
P280 - Wear protective gloves, protective clothing and eye or face protection.
P273 - Avoid release to the environment.
**SECTION 2: Hazards identification**

**Response:**
- P391 - Collect spillage.
- P308 + P313 - If exposed or concerned: Get medical advice or attention.

**Storage:**
- Not applicable.

**Disposal:**
- P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.

**Hazardous ingredients:**
- benzidine

**Supplemental label elements**
- Not applicable.

**Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles**
- Restricted to professional users.

**Special packaging requirements**
- Tactile warning of danger: Not applicable.

**2.3 Other hazards**

**Product meets the criteria for PBT or vPvB according to Regulation (EC) No. 1907/2006, Annex XIII**

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

**Other hazards which do not result in classification**

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

**3.2 Mixtures**

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Identifiers</th>
<th>%</th>
<th>Regulation (EC) No. 1272/2008 [CLP]</th>
<th>Type</th>
</tr>
</thead>
</table>
| Dichloromethane         | EC: 200-838-9
CAS: 75-09-2
Index: 602-004-00-3 | ≥90 | Carc. 2, H351 | [1] [2] |
| Benzidine               | EC: 202-199-1
CAS: 92-87-5
Index: 612-042-00-2 | <0.1 | Acute Tox. 4, H302
Carc. 1A, H350
Aquatic Acute 1, H400 (M=1)
Aquatic Chronic 1, H410 (M=1)
Acute Tox. 3, H301
Acute Tox. 3, H311
Acute Tox. 2, H330
Skin Irrit. 2, H315
Eye Irrit. 2, H319
Carc. 2, H351
STOT SE 3, H335
STOT RE 1, H372
Aquatic Acute 1, H400 (M=100)
Aquatic Chronic 1, H410 (M=10)
Acute Tox. 3, H301
Carc. 2, H351
STOT RE 1, H372 | [1] |
| Pentachlorophenol       | EC: 201-778-6
CAS: 87-86-5
Index: 604-002-00-8 | <0.1 | Acute Tox. 3, H301
Carc. 2, H351
STOT SE 3, H335
STOT RE 1, H372
Aquatic Acute 1, H400 (M=100)
Aquatic Chronic 1, H410 (M=10) | [1] |
| DDT                     | EC: 200-024-3
CAS: 50-29-3
Index: 602-045-00-7 | <0.1 | Acute Tox. 3, H301
Carc. 2, H351
STOT SE 3, H335
STOT RE 1, H372
Aquatic Acute 1, H400 (M=100)
Aquatic Chronic 1, H410 (M=10) | [1] |
SECTION 3: Composition/information on ingredients

<table>
<thead>
<tr>
<th>Type</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>[1] Substance classified with a health or environmental hazard</td>
<td></td>
</tr>
<tr>
<td>[2] Substance with a workplace exposure limit</td>
<td></td>
</tr>
<tr>
<td>[5] Substance of equivalent concern</td>
<td></td>
</tr>
<tr>
<td>[6] Additional disclosure due to company policy</td>
<td></td>
</tr>
</tbody>
</table>

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment, are PBTs, vPvBs or Substances of equivalent concern, or have been assigned a workplace exposure limit and hence require reporting in this section.

SECTION 4: First aid measures

4.1 Description of first aid measures

**Eye contact**
- Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.

**Inhalation**
- Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

**Skin contact**
- Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.

**Ingestion**
- Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

**Protection of first-aiders**
- No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

4.2 Most important symptoms and effects, both acute and delayed

**Potential acute health effects**
- **Eye contact**: No known significant effects or critical hazards.
- **Inhalation**: No known significant effects or critical hazards.
- **Skin contact**: No known significant effects or critical hazards.
- **Ingestion**: No known significant effects or critical hazards.

**Over-exposure signs/symptoms**
- **Eye contact**: No specific data.
- **Inhalation**: No specific data.
- **Skin contact**: No specific data.
## SECTION 4: First aid measures

### Ingestion

No specific data.

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

#### Notes to physician

In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

#### Specific treatments

No specific treatment.

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

#### Suitable extinguishing media

Use an extinguishing agent suitable for the surrounding fire.

#### Unsuitable extinguishing media

None known.

### 5.2 Special hazards arising from the substance or mixture

#### Hazards from the substance or mixture

In a fire or if heated, a pressure increase will occur and the container may burst. This material is very toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

#### Hazardous combustion products

Decomposition products may include the following materials:
- carbon dioxide
- carbon monoxide
- halogenated compounds
- carbonyl halides

### 5.3 Advice for firefighters

#### Special precautions for fire-fighters

Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

#### Special protective equipment for fire-fighters

Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

#### For non-emergency personnel

No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

#### For emergency responders

If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

### 6.2 Environmental precautions

Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.

### 6.3 Methods and material for containment and cleaning up
SECTION 6: Accidental release measures

Methods for cleaning up: Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

6.4 Reference to other sections: See Section 1 for emergency contact information. See Section 8 for information on appropriate personal protective equipment. See Section 13 for additional waste treatment information.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Protective measures: Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapour or mist. Avoid release to the environment. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene: Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

7.2 Conditions for safe storage, including any incompatibilities

Storage: Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Seveso Directive - Reporting thresholds

<table>
<thead>
<tr>
<th>Category</th>
<th>Notification and MAPP threshold</th>
<th>Safety report threshold</th>
</tr>
</thead>
<tbody>
<tr>
<td>E1</td>
<td>100 tonne</td>
<td>200 tonne</td>
</tr>
</tbody>
</table>

7.3 Specific end use(s)

Recommendations: Industrial applications, Professional applications.

Industrial sector specific solutions: Not available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits
**SECTION 8: Exposure controls/personal protection**

### Recommended monitoring procedures

If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to monitoring standards, such as the following:
- European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy)
- European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents)
- European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents)

Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

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### DNELs/DMELs

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Type</th>
<th>Exposure</th>
<th>Value</th>
<th>Population</th>
<th>Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dichloromethane</td>
<td>DNEL</td>
<td>Long term Oral</td>
<td>0.06 mg/kg bw/day</td>
<td>General population</td>
<td>Systemic</td>
</tr>
<tr>
<td></td>
<td>DMEL</td>
<td>Short term Inhalation</td>
<td>5 mg/m³</td>
<td>General population</td>
<td>Systemic</td>
</tr>
<tr>
<td></td>
<td>DNEL</td>
<td>Long term Dermal</td>
<td>5.82 mg/kg bw/day</td>
<td>General population</td>
<td>Systemic</td>
</tr>
<tr>
<td></td>
<td>DNEL</td>
<td>Long term Dermal</td>
<td>12 mg/kg bw/day</td>
<td>Workers</td>
<td>Systemic</td>
</tr>
<tr>
<td></td>
<td>DNEL</td>
<td>Long term Inhalation</td>
<td>88.3 mg/m³</td>
<td>General population</td>
<td>Systemic</td>
</tr>
<tr>
<td></td>
<td>DMEL</td>
<td>Short term Inhalation</td>
<td>132.14 mg/m³</td>
<td>Workers</td>
<td>Systemic</td>
</tr>
<tr>
<td></td>
<td>DNEL</td>
<td>Long term Inhalation</td>
<td>353 mg/m³</td>
<td>Workers</td>
<td>Systemic</td>
</tr>
</tbody>
</table>

### PNECs

No PNECs available

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### 8.2 Exposure controls

**Appropriate engineering controls**: If user operations generate dust, fumes, gas, vapour or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

**Individual protection measures**

**Hygiene measures**: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

**Eye/face protection**: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

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**Date of issue/Date of revision**: 23/12/2020

**Date of previous issue**: 30/04/2018

**Version**: 3
SECTION 8: Exposure controls/personal protection

Hand protection: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection: Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection: Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Environmental exposure controls: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance
- Physical state: Liquid.
- Odour: Chloroform.
- Odour threshold: 307 ppm
- pH: Not available.
- Melting point/freezing point: -95°C
- Initial boiling point and boiling range: 39.75°C
- Flash point: Not available.
- Evaporation rate: 1.47 (butyl acetate = 1)
- Flammability (solid, gas): Not applicable.
- Upper/lower flammability or explosive limits: Lower: 15.5% Upper: 66.4%
- Vapour pressure: 53.3 kPa [room temperature]
- Vapour density: 2.9 [Air = 1]
- Relative density: Not available.
- Solubility(ies): Partially soluble in the following materials: cold water and hot water.
- Partition coefficient: n-octanol/water: 5
- Auto-ignition temperature: Not available.
- Decomposition temperature: Not available.
- Viscosity: Not available.
- Explosive properties: Not available.
- Oxidising properties: Not available.

9.2 Other information
No additional information.


SECTION 10: Stability and reactivity

10.1 Reactivity : No specific test data related to reactivity available for this product or its ingredients.

10.2 Chemical stability : The product is stable.

10.3 Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

10.4 Conditions to avoid : No specific data.

10.5 Incompatible materials : May react or be incompatible with oxidising materials.

Reactive or incompatible with the following materials: metals.

10.6 Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Dose</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dichloromethane</td>
<td>LC50 Inhalation Vapour</td>
<td>Rat</td>
<td>76000 mg/m³</td>
<td>4 hours</td>
</tr>
<tr>
<td></td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>985 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>309 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>LD50 Dermal</td>
<td>Rat</td>
<td>26 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>27 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>LD50 Dermal</td>
<td>Rabbit</td>
<td>300 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>LD50 Dermal</td>
<td>Rat</td>
<td>250 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>87 mg/kg</td>
<td>-</td>
</tr>
</tbody>
</table>

Acute toxicity estimates

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Oral (mg/kg)</th>
<th>Dermal (mg/kg)</th>
<th>Inhalation (gases) (ppm)</th>
<th>Inhalation (vapours) (mg/l)</th>
<th>Inhalation (dusts and mists) (mg/l)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dichloromethane</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>76</td>
<td>N/A</td>
</tr>
<tr>
<td>Benzidine</td>
<td>309</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Pentachlorophenol</td>
<td>100</td>
<td>300</td>
<td>N/A</td>
<td>N/A</td>
<td>0.05</td>
</tr>
<tr>
<td>DDT</td>
<td>87</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Irritation/Corrosion

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Score</th>
<th>Exposure</th>
<th>Observation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dichloromethane</td>
<td>Eyes - Moderate irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>162 mg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Skin - Moderate irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 100 mg</td>
<td>-</td>
</tr>
<tr>
<td>Pentachlorophenol</td>
<td>Eyes - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 100 Ul</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Skin - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 10 mg</td>
<td>-</td>
</tr>
</tbody>
</table>

Skin Sensitiser

Conclusion/Summary Mutagenicity : Not available.

Conclusion/Summary Carcinogenicity : Not available.

Date of issue/Date of revision : 23/12/2020  Date of previous issue : 30/04/2018  Version : 3 8/14
SECTION 11: Toxicological information

Conclusion/Summary

Reproductive toxicity
Conclusion/Summary: Not available.

Teratogenicity
Conclusion/Summary: Not available.

Specific target organ toxicity (single exposure)

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Category</th>
<th>Route of exposure</th>
<th>Target organs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pentachlorophenol</td>
<td>Category 3</td>
<td>-</td>
<td>Respiratory tract irritation</td>
</tr>
</tbody>
</table>

Specific target organ toxicity (repeated exposure)

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Category</th>
<th>Route of exposure</th>
<th>Target organs</th>
</tr>
</thead>
<tbody>
<tr>
<td>DDT</td>
<td>Category 1</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Aspiration hazard
Not available.

Information on likely routes of exposure: Routes of entry anticipated: Oral, Dermal, Inhalation.

Potential acute health effects

Inhalation: No known significant effects or critical hazards.
Ingestion: No known significant effects or critical hazards.
Skin contact: No known significant effects or critical hazards.
Eye contact: No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Inhalation: No specific data.
Ingestion: No specific data.
Skin contact: No specific data.
Eye contact: No specific data.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Short term exposure

Potential immediate effects: Not available.
Potential delayed effects: Not available.

Long term exposure

Potential immediate effects: Not available.
Potential delayed effects: Not available.

Potential chronic health effects

General: No known significant effects or critical hazards.
Carcinogenicity: May cause cancer. Risk of cancer depends on duration and level of exposure.
Mutagenicity: No known significant effects or critical hazards.
Reproductive toxicity: No known significant effects or critical hazards.
Other information: Adverse symptoms may include the following: central nervous system depression, headache, nausea or vomiting, dizziness/vertigo, drowsiness/fatigue, carboxyhaemoglobinemia.
SECTION 12: Ecological information

12.1 Toxicity

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dichloromethane</td>
<td>Acute EC50 242 mg/l Fresh water</td>
<td>Algae - Chlamydomonas reinhardti (Exponential growth phase)</td>
<td>72 hours</td>
</tr>
<tr>
<td></td>
<td>Acute EC50 0.98 mg/l Fresh water</td>
<td>Algae - Chlorella vulgaris</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Acute EC50 177 mg/l Fresh water</td>
<td>Daphnia - Daphnia magna</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 108500 μg/l Marine water</td>
<td>Crustaceans - Palaeomonetes pugio - Juvenile (Fleldging, Hatchling, Weanling)</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 2.6 mg/l Fresh water</td>
<td>Fish - Pimephales promelas</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Chronic NOEC 56000 μg/l Fresh water</td>
<td>Algae - Pseudokirchneriella subcapitata</td>
<td>96 hours</td>
</tr>
<tr>
<td>Benzidine</td>
<td>Acute EC50 0.6 mg/l Fresh water</td>
<td>Daphnia - Daphnia magna</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 5.21 mg/l Marine water</td>
<td>Crustaceans - Americanamysis bahia - Juvenile (Fleldging, Hatchling, Weanling)</td>
<td>48 hours</td>
</tr>
<tr>
<td>Pentachlorophenol</td>
<td>Acute LC50 2.5 mg/l Fresh water</td>
<td>Fish - Cyprinella lutrensis</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Acute EC50 20.3 ppb Marine water</td>
<td>Algae - Skeletonema costatum</td>
<td>4 days</td>
</tr>
<tr>
<td></td>
<td>Acute EC50 610 μg/l Fresh water</td>
<td>Aquatic plants - Lemna minor - Exponential growth phase</td>
<td>4 days</td>
</tr>
<tr>
<td></td>
<td>Acute EC50 0.263 mg/l Fresh water</td>
<td>Aquatic plants - Plantae</td>
<td>3 days</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 5.6 μg/l Fresh water</td>
<td>Daphnia - Daphnia magna</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 38 μg/l Fresh water</td>
<td>Crustaceans - Gammarus pulex</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 11 μg/l Fresh water</td>
<td>Fish - Acipenser breviostrum</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Chronic NOEC 5 μg/l Fresh water</td>
<td>Algae - Pseudokirchneriella subcapitata</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Chronic NOEC 0.01 mg/l Fresh water</td>
<td>Crustaceans - Macrobrachium superbum</td>
<td>21 days</td>
</tr>
<tr>
<td></td>
<td>Chronic NOEC 0.01 mg/l Fresh water</td>
<td>Crustaceans - Macrobrachium superbum</td>
<td>21 days</td>
</tr>
<tr>
<td></td>
<td>Chronic NOEC 1.8 μg/l Fresh water</td>
<td>Daphnia - Daphnia magna</td>
<td>28 days</td>
</tr>
<tr>
<td></td>
<td>Chronic NOEC 10 μg/l Fresh water</td>
<td>Fish - Oncorhynchus mykiss - Juvenile (Fleldging, Hatchling, Weanling)</td>
<td>28 days</td>
</tr>
<tr>
<td>DDT</td>
<td>Acute EC50 0.6 μg/l Marine water</td>
<td>Crustaceans - Penaeus duorarum</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute EC50 0.4 μg/l Marine water</td>
<td>Daphnia - Daphnia pulex</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 0.26 μg/l Marine water</td>
<td>Fish - Micrometrus minimus</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Chronic NOEC 100 ppb Marine water</td>
<td>Algae - Dunaliella tertiolecta - Exponential growth phase</td>
<td>4 days</td>
</tr>
<tr>
<td></td>
<td>Chronic NOEC 1 μg/l Fresh water</td>
<td>Daphnia - Daphnia magna - Neonate</td>
<td>21 days</td>
</tr>
</tbody>
</table>

12.2 Persistence and degradability

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Test</th>
<th>Result</th>
<th>Dose</th>
<th>Inoculum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dichloromethane</td>
<td>OECD 301D Ready Biodegradability - Closed Bottle Test</td>
<td>68 % - Readily - 28 days</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

12.3 Bioaccumulative potential

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Aquatic half-life</th>
<th>Photolysis</th>
<th>Biodegradability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dichloromethane</td>
<td>-</td>
<td>-</td>
<td>Readily</td>
</tr>
</tbody>
</table>
SECTION 12: Ecological information

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>LogP&lt;sub&gt;ow&lt;/sub&gt;</th>
<th>BCF</th>
<th>Potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>Semi-Volatiles GC/MS Tuning Standard, Part Number 8500-5995</td>
<td>5</td>
<td>-</td>
<td>high</td>
</tr>
<tr>
<td>Dichloromethane</td>
<td>1.25</td>
<td>22.91</td>
<td>low</td>
</tr>
<tr>
<td>Benzidine</td>
<td>1.34</td>
<td>-</td>
<td>low</td>
</tr>
<tr>
<td>Pentachlorophenol</td>
<td>5.12</td>
<td>457.09</td>
<td>low</td>
</tr>
<tr>
<td>DDT</td>
<td>6.91</td>
<td>19498.45</td>
<td>high</td>
</tr>
</tbody>
</table>

12.4 Mobility in soil

Soil/water partition coefficient (K<sub>OC</sub>): Not available.

Mobility: Not available.

12.5 Results of PBT and vPvB assessment

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

12.6 Other adverse effects: No known significant effects or critical hazards.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

Methods of disposal: The generation of waste should be avoided or minimised wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction.

Hazardous waste: The classification of the product may meet the criteria for a hazardous waste.

Packaging

Methods of disposal: The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

Special precautions: This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: Transport information

<table>
<thead>
<tr>
<th></th>
<th>ADR/ RID</th>
<th>IMDG</th>
<th>IATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.1 UN number</td>
<td>UN1593</td>
<td>UN1593</td>
<td>UN1593</td>
</tr>
<tr>
<td>14.2 UN proper shipping name</td>
<td>DICHLOROMETHANE solution</td>
<td>DICHLOROMETHANE solution</td>
<td>Dichloromethane solution</td>
</tr>
<tr>
<td>14.3 Transport hazard class(es)</td>
<td>3.1</td>
<td>6.1</td>
<td>6.1</td>
</tr>
<tr>
<td>14.4 Packing group</td>
<td>II</td>
<td>II</td>
<td>III</td>
</tr>
</tbody>
</table>
SECTION 14: Transport information

14.5 Environmental hazards | Yes. | Yes. | Yes. The environmentally hazardous substance mark is not required.

Additional information

Remarks: De minimis quantities

ADR/RID

The environmentally hazardous substance mark is not required when transported in sizes of ≤5 L or ≤5 kg.

Hazard identification number: 60
Limited quantity: 5 L
Special provisions: 516
Tunnel code: (E)

IMDG

The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg.

Emergency schedules: F-A, S-A

IATA

The environmentally hazardous substance mark may appear if required by other transportation regulations.

Quantity limitation:
Passenger and Cargo Aircraft: 60 L. Packaging instructions: 655.
Cargo Aircraft Only: 220 L. Packaging instructions: 663.
Limited Quantities - Passenger Aircraft: 2 L. Packaging instructions: Y642.

14.6 Special precautions for user

Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

14.7 Transport in bulk according to IMO instruments

Not available.

SECTION 15: Regulatory information

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

EU Regulation (EC) No. 1907/2006 (REACH)
Annex XIV - List of substances subject to authorisation

Annex XIV
None of the components are listed.

Substances of very high concern
None of the components are listed.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>EC number</th>
<th>CAS number</th>
<th>Restriction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Semi-Volatiles GC/MS Tuning Standard, Part Number 8500-5995</td>
<td>200-838-9</td>
<td>75-09-2</td>
<td>28</td>
</tr>
<tr>
<td>dichloromethane</td>
<td>202-199-1</td>
<td>92-87-5</td>
<td>59</td>
</tr>
<tr>
<td>benzidine</td>
<td>201-778-6</td>
<td>87-86-5</td>
<td>28, 43</td>
</tr>
<tr>
<td>pentachlorophenol</td>
<td></td>
<td></td>
<td>22</td>
</tr>
</tbody>
</table>

Label: Restricted to professional users.

Other EU regulations

Industrial emissions (integrated pollution prevention and control) - Air
Ozone depleting substances (1005/2009/EU)

Not listed.

Date of issue/Date of revision: 23/12/2020
Date of previous issue: 30/04/2018
Version: 3

12/14
SECTION 15: Regulatory information

Prior Informed Consent (PIC) (649/2012/EU)

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>Annex</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzidine, its salts and benzidine derivatives</td>
<td>Annex I - Part 1</td>
<td>Listed</td>
</tr>
<tr>
<td></td>
<td>Annex I - Part 2</td>
<td>Listed</td>
</tr>
</tbody>
</table>

Seveso Directive

This product is controlled under the Seveso Directive.

Danger criteria

Category

E1

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Inventory list

Australia: Not determined.
Canada: Not determined.
China: Not determined.
Europe: All components are listed or exempted.
Japan: Japan inventory (ENCS): Not determined.
Japan inventory (ISHL): Not determined.
New Zealand: Not determined.
Philippines: Not determined.
Republic of Korea: Not determined.
Taiwan: All components are listed or exempted.
Thailand: Not determined.
Turkey: Not determined.
United States: Not determined.
Viet Nam: Not determined.

15.2 Chemical safety assessment

: This product contains substances for which Chemical Safety Assessments might still be required.

SECTION 16: Other information

Indicates information that has changed from previously issued version.

Date of issue/Date of revision: 23/12/2020
Date of previous issue: 30/04/2018
Version: 3
Semi-Volatiles GC/MS Tuning Standard, Part Number 8500-5995

SECTION 16: Other information

Abbreviations and acronyms:
- ATE = Acute Toxicity Estimate
- CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
- DMEL = Derived Minimal Effect Level
- DNEL = Derived No Effect Level
- EUH statement = CLP-specific Hazard statement
- N/A = Not available
- PBT = Persistent, Bioaccumulative and Toxic
- PNEC = Predicted No Effect Concentration
- RRN = REACH Registration Number
- vPvB = Very Persistent and Very Bioaccumulative

Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

<table>
<thead>
<tr>
<th>Classification</th>
<th>Justification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carc. 1A, H350</td>
<td>Calculation method</td>
</tr>
<tr>
<td>Aquatic Acute 1, H400</td>
<td>Calculation method</td>
</tr>
<tr>
<td>Aquatic Chronic 1, H410</td>
<td>Calculation method</td>
</tr>
</tbody>
</table>

Full text of abbreviated H statements

| H301      | Toxic if swallowed.           |
| H302      | Harmful if swallowed.         |
| H311      | Toxic in contact with skin.   |
| H315      | Causes skin irritation.       |
| H319      | Causes serious eye irritation.|
| H330      | Fatal if inhaled.             |
| H335      | May cause respiratory irritation. |
| H350      | May cause cancer.             |
| H351      | Suspected of causing cancer.  |
| H372      | Causes damage to organs through prolonged or repeated exposure. |
| H400      | Very toxic to aquatic life.   |
| H410      | Very toxic to aquatic life with long lasting effects. |

Full text of classifications [CLP/GHS]

| Acute Tox. 2 | ACUTE TOXICITY - Category 2       |
| Acute Tox. 3 | ACUTE TOXICITY - Category 3       |
| Acute Tox. 4 | ACUTE TOXICITY - Category 4       |
| Aquatic Acute 1 | SHORT-TERM (ACUTE) AQUATIC HAZARD - Category 1 |
| Aquatic Chronic 1 | LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 1 |
| Carc. 1A     | CARCINOGENICITY - Category 1A     |
| Carc. 2      | CARCINOGENICITY - Category 2      |
| Eye Irrit. 2 | SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2 |
| Skin Irrit. 2 | SKIN CORROSION/IRRITATION - Category 2 |
| STOT RE 1   | SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE - Category 1 |
| STOT SE 3   | SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE - Category 3 |

Date of issue/Date of revision: 23/12/2020
Date of previous issue: 30/04/2018
Version: 3

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