

**Safety Data Sheet**  
acc. to OSHA HCS

Printing date 11/20/2018

Reviewed on 11/20/2018

## 1 Identification

- **Product identifier**
- **Product Name:** VOC Mix (Non-Gases)
- **Part Number:** ECS-B-033
- **Application of the substance / the mixture** Certified Reference Material
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
SPEX CertiPrep, LLC.  
203 Norcross Ave, Metuchen,  
NJ 08840 USA
- **Information department:** product safety department
- **Emergency telephone number:**  
Emergency Phone Number (24 hours)  
CHEMTREC (800-424-9300)  
Outside US: 703-527-3887

## 2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS02 Flame

Flam. Liq. 2 H225 Highly flammable liquid and vapor.



GHS06 Skull and crossbones

Acute Tox. 3 H331 Toxic if inhaled.



GHS08 Health hazard

Muta. 1B H340 May cause genetic defects.

Carc. 1A H350 May cause cancer.

Repr. 1A H360 May damage fertility or the unborn child.

STOT SE 1 H370 Causes damage to organs.

STOT RE 2 H373 May cause damage to organs through prolonged or repeated exposure.



GHS07

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**



GHS02



GHS06



GHS07



GHS08

- **Signal word** Danger

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

methanol

1,2-dibromo-3-chloropropane

1,1,1,2-tetrachloroethane

benzene

(Z)-1,3-dichloropropene

- **Hazard statements**

H225 Highly flammable liquid and vapor.

H331 Toxic if inhaled.

H317 May cause an allergic skin reaction.

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*H340 May cause genetic defects.**H350 May cause cancer.**H360 May damage fertility or the unborn child.**H370 Causes damage to organs.**H373 May cause damage to organs through prolonged or repeated exposure.***Precautionary statements***If medical advice is needed, have product container or label at hand.**Keep out of reach of children.**Read label before use.**Keep away from heat/sparks/open flames/hot surfaces. - No smoking.**Use explosion-proof electrical/ventilating/lighting/equipment.**Do not breathe dust/fume/gas/mist/vapors/spray.**If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.**Store locked up.**Dispose of contents/container in accordance with local/regional/national/international regulations.***Classification system:****NFPA ratings (scale 0 - 4)****HMIS-ratings (scale 0 - 4)****Other hazards****Results of PBT and vPvB assessment****PBT:**

87-61-6	1,2,3-trichlorobenzene
120-82-1	1,2,4-trichlorobenzene
87-68-3	hexachlorobuta-1,3-diene

**vPvB:**

87-68-3	hexachlorobuta-1,3-diene
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**3 Composition/information on ingredients****Chemical characterization: Mixtures****Description:** Mixture of the substances listed below with nonhazardous additions.**Dangerous components:**

67-56-1	methanol	89.2%
79-34-5	1,1,2,2-tetrachloroethane	0.2%
79-00-5	1,1,2-trichloroethane	0.2%
75-35-4	1,1-dichloroethylene	0.2%
87-61-6	1,2,3-trichlorobenzene	0.2%
96-18-4	1,2,3-trichloropropane	0.2%
120-82-1	1,2,4-trichlorobenzene	0.2%
96-12-8	1,2-dibromo-3-chloropropane	0.2%
106-93-4	1,2-dibromoethane	0.2%
107-06-2	1,2-dichloroethane	0.2%
78-87-5	propylene dichloride	0.2%
106-46-7	1,4-dichlorobenzene	0.2%
71-43-2	benzene	0.2%
75-27-4	bromodichloromethane	0.2%
56-23-5	carbon tetrachloride	0.2%
67-66-3	chloroform	0.2%
10061-01-5	(Z)-1,3-dichloropropene	0.2%
100-41-4	ethylbenzene	0.2%
87-68-3	hexachlorobuta-1,3-diene	0.2%

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98-82-8	isopropylbenzene	0.2%
75-09-2	dichloromethane	0.2%
103-65-1	propylbenzene	0.2%
91-20-3	naphthalene	0.2%
100-42-5	styrene	0.2%
127-18-4	tetrachloroethylene	0.2%
108-88-3	toluene	0.2%
10061-02-6	trans-1,3-Dichloropropene	0.2%
79-01-6	trichloroethylene	0.2%
630-20-6	1,1,1,2-Tetrachloroethane	0.2%

· **Chemical identification of the substance/preparation**

71-55-6	1,1,1-trichloroethane	0.2%
75-34-3	1,1-dichloroethane	0.2%
563-58-6	1,1-dichloropropene	0.2%
95-63-6	1,2,4-trimethylbenzene	0.2%
95-50-1	1,2-dichlorobenzene	0.2%
108-67-8	mesitylene	0.2%
541-73-1	1,3-dichlorobenzene	0.2%
142-28-9	1,3-dichloropropane	0.2%
594-20-7	2,2-dichloropropane	0.2%
95-49-8	2-chlorotoluene	0.2%
106-43-4	4-chlorotoluene	0.2%
108-86-1	bromobenzene	0.2%
74-97-5	bromochloromethane	0.2%
75-25-2	bromoform	0.2%
108-90-7	chlorobenzene	0.2%
156-59-2	cis-dichloroethylene	0.2%
124-48-1	dibromochloromethane	0.2%
74-95-3	dibromomethane	0.2%
108-38-3	m-xylene	0.2%
104-51-8	butylbenzene	0.2%
95-47-6	o-xylene	0.2%
99-87-6	p-cymene	0.2%
106-42-3	p-xylene	0.2%
135-98-8	sec-butylbenzene	0.2%
98-06-6	tert-butylbenzene	0.2%
156-60-5	trans-dichloroethylene	0.2%

#### 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. Then consult a doctor.

· **After swallowing:**

Do not induce vomiting; immediately call for medical help.

Do not give anything to eat or drink - Do not induce vomiting

· **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:** CO<sub>2</sub>, sand, extinguishing powder. Do not use water.
- **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:**  
Do not allow product to reach sewage system or any water course.  
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.  
Do not flush with water or aqueous cleansing agents
- **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:**

67-56-1	methanol	530 ppm
71-55-6	1,1,1-trichloroethane	230 ppm
79-34-5	1,1,2,2-tetrachloroethane	3 ppm
79-00-5	1,1,2-trichloroethane	30 ppm
75-34-3	1,1-dichloroethane	300 ppm
75-35-4	1,1-dichloroethylene	45 ppm
563-58-6	1,1-dichloropropene	1.3 ppm
87-61-6	1,2,3-trichlorobenzene	15 mg/m <sup>3</sup>
96-18-4	1,2,3-trichloropropane	0.015 ppm
120-82-1	1,2,4-trichlorobenzene	0.45 ppm
95-63-6	1,2,4-trimethylbenzene	140 ppm
96-12-8	1,2-dibromo-3-chloropropane	0.003 ppm
106-93-4	1,2-dibromoethane	17 ppm
95-50-1	1,2-dichlorobenzene	50 ppm
107-06-2	1,2-dichloroethane	50 ppm
78-87-5	propylene dichloride	30 ppm
108-67-8	mesitylene	140 ppm
541-73-1	1,3-dichlorobenzene	6 ppm
142-28-9	1,3-dichloropropane	5.4 ppm
106-46-7	1,4-dichlorobenzene	30 ppm
594-20-7	2,2-dichloropropane	2.6 ppm
95-49-8	2-chlorotoluene	75 ppm
106-43-4	4-chlorotoluene	1.2 ppm
71-43-2	benzene	52 ppm
108-86-1	bromobenzene	0.96 ppm
74-97-5	bromochloromethane	600 ppm
75-27-4	bromodichloromethane	1.3 mg/m <sup>3</sup>
75-25-2	bromoform	1.5 ppm
56-23-5	carbon tetrachloride	1.2 ppm
108-90-7	chlorobenzene	10 ppm

· **PAC-2:**

67-56-1	methanol	2,100 ppm
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71-55-6	1,1,1-trichloroethane	600 ppm
79-34-5	1,1,2,2-tetrachloroethane	120 ppm
79-00-5	1,1,2-trichloroethane	180 ppm
75-34-3	1,1-dichloroethane	670 ppm
75-35-4	1,1-dichloroethylene	500 ppm
563-58-6	1,1-dichloropropene	15 ppm
87-61-6	1,2,3-trichlorobenzene	60 mg/m <sup>3</sup>
96-18-4	1,2,3-trichloropropane	170 ppm
120-82-1	1,2,4-trichlorobenzene	5 ppm
95-63-6	1,2,4-trimethylbenzene	360 ppm
96-12-8	1,2-dibromo-3-chloropropane	2.2 ppm
106-93-4	1,2-dibromoethane	24 ppm
95-50-1	1,2-dichlorobenzene	170 ppm
107-06-2	1,2-dichloroethane	200 ppm
78-87-5	propylene dichloride	220 ppm
108-67-8	mesitylene	360 ppm
541-73-1	1,3-dichlorobenzene	66 ppm
142-28-9	1,3-dichloropropane	59 ppm
106-46-7	1,4-dichlorobenzene	170 ppm
594-20-7	2,2-dichloropropane	29 ppm
95-49-8	2-chlorotoluene	310 ppm
106-43-4	4-chlorotoluene	13 ppm
71-43-2	benzene	800 ppm
108-86-1	bromobenzene	11 ppm
74-97-5	bromochloromethane	830 ppm
75-27-4	bromodichloromethane	14 mg/m <sup>3</sup>
75-25-2	bromoform	6.8 ppm
56-23-5	carbon tetrachloride	13 ppm
108-90-7	chlorobenzene	150 ppm

**· PAC-3:**

67-56-1	methanol	7200* ppm
71-55-6	1,1,1-trichloroethane	4,200 ppm
79-34-5	1,1,2,2-tetrachloroethane	150 ppm
79-00-5	1,1,2-trichloroethane	500 ppm
75-34-3	1,1-dichloroethane	4,000 ppm
75-35-4	1,1-dichloroethylene	1,000 ppm
563-58-6	1,1-dichloropropene	87 ppm
87-61-6	1,2,3-trichlorobenzene	360 mg/m <sup>3</sup>
96-18-4	1,2,3-trichloropropane	1,000 ppm
120-82-1	1,2,4-trichlorobenzene	20 ppm
95-63-6	1,2,4-trimethylbenzene	480 ppm
96-12-8	1,2-dibromo-3-chloropropane	4.3 ppm
106-93-4	1,2-dibromoethane	46 ppm
95-50-1	1,2-dichlorobenzene	1,000 ppm
107-06-2	1,2-dichloroethane	300 ppm
78-87-5	propylene dichloride	2,000 ppm
108-67-8	mesitylene	480 ppm
541-73-1	1,3-dichlorobenzene	400 ppm
142-28-9	1,3-dichloropropane	350 ppm
106-46-7	1,4-dichlorobenzene	1,000 ppm
594-20-7	2,2-dichloropropane	170 ppm
95-49-8	2-chlorotoluene	1,800 ppm
106-43-4	4-chlorotoluene	80 ppm
71-43-2	benzene	4000* ppm
108-86-1	bromobenzene	240 ppm

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74-97-5	bromochloromethane	5,000 ppm
75-27-4	bromodichloromethane	85 mg/m <sup>3</sup>
75-25-2	bromoform	41 ppm
56-23-5	carbon tetrachloride	340 ppm
108-90-7	chlorobenzene	400 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.
- **Information about protection against explosions and fires:**  
Keep ignition sources away - Do not smoke.  
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:** Store in a cool location.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:**  
Keep receptacle tightly sealed.  
Store in cool, dry conditions in well sealed receptacles.
- **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 other constituents have no known exposure limits.

#### 67-56-1 methanol

PEL	Long-term value: 260 mg/m <sup>3</sup> , 200 ppm
REL	Short-term value: 325 mg/m <sup>3</sup> , 250 ppm Long-term value: 260 mg/m <sup>3</sup> , 200 ppm Skin
TLV	Short-term value: 328 mg/m <sup>3</sup> , 250 ppm Long-term value: 262 mg/m <sup>3</sup> , 200 ppm Skin; BEI

#### 79-34-5 1,1,2,2-tetrachloroethane

PEL	Long-term value: 35 mg/m <sup>3</sup> , 5 ppm Skin
REL	Long-term value: 7 mg/m <sup>3</sup> , 1 ppm Skin; See Pocket Guide Apps. A and C
TLV	Long-term value: 6.9 mg/m <sup>3</sup> , 1 ppm Skin

#### 79-00-5 1,1,2-trichloroethane

PEL	Long-term value: 45 mg/m <sup>3</sup> , 10 ppm Skin
REL	Long-term value: 45 mg/m <sup>3</sup> , 10 ppm Skin; See Pocket Guide Apps. A and C
TLV	Long-term value: 55 mg/m <sup>3</sup> , 10 ppm Skin

#### 75-35-4 1,1-dichloroethylene

REL	See Pocket Guide App. A
TLV	Long-term value: 20 mg/m <sup>3</sup> , 5 ppm

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<b>96-18-4 1,2,3-trichloropropane</b>	
PEL	Long-term value: 300 mg/m <sup>3</sup> , 50 ppm
REL	Long-term value: 60 mg/m <sup>3</sup> , 10 ppm Skin, See Pocket Guide App. A
TLV	Long-term value: 0.03 mg/m <sup>3</sup> , 0.005 ppm
<b>120-82-1 1,2,4-trichlorobenzene</b>	
REL	Ceiling limit value: 40 mg/m <sup>3</sup> , 5 ppm
TLV	Ceiling limit value: 37 mg/m <sup>3</sup> , 5 ppm
<b>96-12-8 1,2-dibromo-3-chloropropane</b>	
PEL	Long-term value: 0.001 ppm see 29 CFR 1910.1044
REL	See Pocket Guide App. A
<b>106-93-4 1,2-dibromoethane</b>	
PEL	Long-term value: 20 ppm Ceiling limit value: 30; 50* ppm *5-min peak per 8-hr shift
REL	Long-term value: 0.045 ppm Ceiling limit value: 0.13* ppm *15-min; See Pocket Guide App. A
TLV	Skin
<b>107-06-2 1,2-dichloroethane</b>	
PEL	Long-term value: 50 ppm Ceiling limit value: 100; 200* ppm *5-min peak in any 3 hrs
REL	Short-term value: 8 mg/m <sup>3</sup> , 2 ppm Long-term value: 4 mg/m <sup>3</sup> , 1 ppm See Pocket Guide Apps. A and C
TLV	Long-term value: 40 mg/m <sup>3</sup> , 10 ppm
<b>78-87-5 propylene dichloride</b>	
PEL	Long-term value: 350 mg/m <sup>3</sup> , 75 ppm
REL	See Pocket Guide App. A
TLV	Long-term value: 46 mg/m <sup>3</sup> , 10 ppm DSEN
<b>106-46-7 1,4-dichlorobenzene</b>	
PEL	Long-term value: 450 mg/m <sup>3</sup> , 75 ppm
REL	See Pocket Guide App. A
TLV	Long-term value: 60 mg/m <sup>3</sup> , 10 ppm
<b>71-43-2 benzene</b>	
PEL	Short-term value: 15* mg/m <sup>3</sup> , 5* ppm Long-term value: 3* mg/m <sup>3</sup> , 1* ppm *table Z-2 for exclusions in 29CFR1910.1028(d)
REL	Short-term value: 1 ppm Long-term value: 0.1 ppm See Pocket Guide App. A
TLV	Short-term value: 8 mg/m <sup>3</sup> , 2.5 ppm Long-term value: 1.6 mg/m <sup>3</sup> , 0.5 ppm Skin; BEI
<b>56-23-5 carbon tetrachloride</b>	
PEL	Long-term value: 10 ppm Ceiling limit value: 25; 200* ppm *5-min peak in any 4 hrs
REL	Short-term value: 12.6* mg/m <sup>3</sup> , 2* ppm *60-min; See Pocket Guide App. A
TLV	Short-term value: 63 mg/m <sup>3</sup> , 10 ppm Long-term value: 31 mg/m <sup>3</sup> , 5 ppm Skin
<b>67-66-3 chloroform</b>	
PEL	Ceiling limit value: 240 mg/m <sup>3</sup> , 50 ppm
REL	Short-term value: 9.78* mg/m <sup>3</sup> , 2* ppm *60-min; See Pocket Guide App. A

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TLV	Long-term value: 49 mg/m <sup>3</sup> , 10 ppm
<b>100-41-4 ethylbenzene</b>	
PEL	Long-term value: 435 mg/m <sup>3</sup> , 100 ppm
REL	Short-term value: 545 mg/m <sup>3</sup> , 125 ppm Long-term value: 435 mg/m <sup>3</sup> , 100 ppm
TLV	Long-term value: 87 mg/m <sup>3</sup> , 20 ppm BEI
<b>87-68-3 hexachlorobuta-1,3-diene</b>	
REL	Long-term value: 0.24 mg/m <sup>3</sup> , 0.02 ppm Skin; See Pocket Guide App. A
TLV	Long-term value: 0.21 mg/m <sup>3</sup> , 0.02 ppm Skin
<b>98-82-8 isopropylbenzene</b>	
PEL	Long-term value: 245 mg/m <sup>3</sup> , 50 ppm Skin
REL	Long-term value: 245 mg/m <sup>3</sup> , 50 ppm Skin
TLV	Long-term value: (246) NIC-0.5 mg/m <sup>3</sup> , (50) NIC-0.1 ppm NIC-A3
<b>75-09-2 dichloromethane</b>	
PEL	Short-term value: 125 ppm Long-term value: 25 ppm see 29 CFR 1910.1052
REL	See Pocket Guide App. A
TLV	Long-term value: 174 mg/m <sup>3</sup> , 50 ppm BEI
<b>91-20-3 naphthalene</b>	
PEL	Long-term value: 50 mg/m <sup>3</sup> , 10 ppm
REL	Short-term value: 75 mg/m <sup>3</sup> , 15 ppm Long-term value: 50 mg/m <sup>3</sup> , 10 ppm
TLV	Long-term value: 52 mg/m <sup>3</sup> , 10 ppm Skin; BEI
<b>100-42-5 styrene</b>	
PEL	Long-term value: 100 ppm Ceiling limit value: 200; 600* ppm *5-min peak in any 3 hrs
REL	Short-term value: 425 mg/m <sup>3</sup> , 100 ppm Long-term value: 215 mg/m <sup>3</sup> , 50 ppm
TLV	Short-term value: (170) mg/m <sup>3</sup> , (40) ppm Long-term value: (85) NIC-8.5 mg/m <sup>3</sup> , (20) NIC-2 ppm BEI, NIC-A3, NIC-OTO
<b>127-18-4 tetrachloroethylene</b>	
PEL	Long-term value: 100 ppm Ceiling limit value: 200; 300* ppm *5-min peak in any 3 hrs
REL	Minimize workplace exp. concs.; Pocket Guide App. A
TLV	Short-term value: 685 mg/m <sup>3</sup> , 100 ppm Long-term value: 170 mg/m <sup>3</sup> , 25 ppm BEI
<b>108-88-3 toluene</b>	
PEL	Long-term value: 200 ppm Ceiling limit value: 300; 500* ppm *10-min peak per 8-hr shift
REL	Short-term value: 560 mg/m <sup>3</sup> , 150 ppm Long-term value: 375 mg/m <sup>3</sup> , 100 ppm
TLV	Long-term value: 75 mg/m <sup>3</sup> , 20 ppm BEI
<b>79-01-6 trichloroethylene</b>	
PEL	Long-term value: 100 ppm Ceiling limit value: 200; 300* ppm *5-min peak in any 2 hrs

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REL	See Pocket Guide Apps. A and C
TLV	Short-term value: 135 mg/m <sup>3</sup> , 25 ppm Long-term value: 54 mg/m <sup>3</sup> , 10 ppm BEI
<b>630-20-6 1,1,1,2-Tetrachloroethane</b>	
REL	Handle with caution; See Pocket Guide App. C
<b>Ingredients with biological limit values:</b>	
<b>67-56-1 methanol</b>	
BEI	15 mg/L Medium: urine Time: end of shift Parameter: Methanol (background, nonspecific)
<b>71-43-2 benzene</b>	
BEI	25 µg/g creatinine Medium: urine Time: end of shift Parameter: S-Phenylmercapturic acid (background  500 µg/g creatinine Medium: urine Time: end of shift Parameter: t,t-Muconic acid (background)
<b>100-41-4 ethylbenzene</b>	
BEI	0.7 g/g creatinine Medium: urine Time: end of shift at end of workweek Parameter: Sum of mandelic acid and phenylglyoxylic acid (nonspecific, semi-quantitative)  - Medium: end-exhaled air Time: not critical Parameter: Ethyl benzene (semi-quantitative)
<b>75-09-2 dichloromethane</b>	
BEI	0.3 mg/L Medium: urine Time: end of shift Parameter: Dichloromethane (semi-quantitative)
<b>100-42-5 styrene</b>	
BEI	400 mg/g creatinine Medium: urine Time: end of shift Parameter: Mandelic acid plus phenylglyoxylic acid (nonspecific)  0.2 mg/L Medium: venous blood Time: end of shift Parameter: Styrene (semi-quantitative)
<b>127-18-4 tetrachloroethylene</b>	
BEI	3 ppm Medium: end-exhaled air Time: prior to shift Parameter: Tetrachloroethylene  0.5 mg/L Medium: blood Time: prior to shift Parameter: Tetrachloroethylene

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US

Product Name: VOC Mix (Non-Gases)

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**108-88-3 toluene**

BEI 0.02 mg/L

Medium: blood

Time: prior to last shift of workweek

Parameter: Toluene

0.03 mg/L

Medium: urine

Time: end of shift

Parameter: Toluene

0.3 mg/g creatinine

Medium: urine

Time: end of shift

Parameter: o-Cresol with hydrolysis (background)

**79-01-6 trichloroethylene**

BEI 15 mg/L

Medium: urine

Time: end of shift at end of workweek

Parameter: Trichloroacetic acid (nonspecific)

0.5 mg/L

Medium: blood

Time: end of shift at end of workweek

Parameter: Trichloroethanol without hydrolysis (nonspecific)

-

Medium: blood

Time: end of shift at end of workweek

Parameter: Trichloroethylene (semi-quantitative)

-

Medium: end-exhaled air

Time: end of shift at end of workweek

Parameter: Trichloroethylene (semi-quantitative)

· **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 and skin.

· **Respiratory protection:**

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.

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Product Name: VOC Mix (Non-Gases)

(Contd. of page 10)

## · Eye protection:



Tightly sealed goggles

**9 Physical and chemical properties**

## · Information on basic physical and chemical properties

## · General Information

## · Appearance:

Form:	Liquid
Color:	According to product specification
Odor:	Characteristic
Odour Threshold:	Not applicable.

· pH-value: Not applicable.

## · Change in condition

Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	64.7 °C (148.5 °F)

· Flash point: &lt; 23 °C (&lt;73.4 °F)

· Flammability (solid, gaseous): Not applicable.

· Ignition temperature: 455 °C (851 °F)

· Decomposition temperature: Not applicable.

· Auto igniting: Product is not selfigniting.

· Danger of explosion: Product is not explosive. However, formation of explosive air/vapor mixtures are possible.

## · Explosion limits:

Lower:	5.5 Vol %
Upper:	44 Vol %

· Vapor pressure at 20 °C (68 °F): 128 hPa (96 mm Hg)

· Density: Not applicable.

· Relative density: Not applicable.

· Vapor density: Not applicable.

· Evaporation rate: Not applicable.

## · Solubility in / Miscibility with

Water: Not miscible or difficult to mix.

· Partition coefficient (n-octanol/water): Not applicable.

## · Viscosity:

Dynamic:	Not applicable.
Kinematic:	Not applicable.

## · Solvent content:

Organic solvents:	94.8 %
VOC content:	94.20 %

Solids content: 0.8 %

· 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.

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(Contd. on page 12)

Product Name: VOC Mix (Non-Gases)

(Contd. of page 11)

**11 Toxicological information**

- Information on toxicological effects
- Acute toxicity:

## · LD/LC50 values that are relevant for classification:

<b>67-56-1 methanol</b>		
Oral	LD50	5,628 mg/kg (rat)
Dermal	LD50	15,800 mg/kg (rabbit)
<b>71-55-6 1,1,1-trichloroethane</b>		
Oral	LD50	10,300 mg/kg (rat)
<b>79-34-5 1,1,2,2-tetrachloroethane</b>		
Oral	LD50	800 mg/kg (rat)
<b>96-18-4 1,2,3-trichloropropane</b>		
Oral	LD50	320 mg/kg (rat)
Dermal	LD50	1,770 mg/kg (rabbit)
<b>120-82-1 1,2,4-trichlorobenzene</b>		
Oral	LD50	756 mg/kg (rat)
<b>96-12-8 1,2-dibromo-3-chloropropane</b>		
Oral	LD50	170 mg/kg (rat)
Dermal	LD50	1,420 mg/kg (rat)
<b>106-93-4 1,2-dibromoethane</b>		
Oral	LD50	108 mg/kg (rat)
Dermal	LD50	300 mg/kg (rabbit)
<b>95-50-1 1,2-dichlorobenzene</b>		
Oral	LD50	500 mg/kg (rat)
<b>107-06-2 1,2-dichloroethane</b>		
Oral	LD50	670 mg/kg (rat)
Dermal	LD50	2,800 mg/kg (rat)
<b>106-46-7 1,4-dichlorobenzene</b>		
Oral	LD50	500 mg/kg (rat)
<b>71-43-2 benzene</b>		
Oral	LD50	4,894 mg/kg (rat)
Dermal	LD50	48 mg/kg (mouse)
Inhalative	LC50/4 h	9,980 mg/l (mouse)
<b>56-23-5 carbon tetrachloride</b>		
Oral	LD50	2,350 mg/kg (rat)
Dermal	LD50	5,070 mg/kg (rat)
<b>91-20-3 naphthalene</b>		
Oral	LD50	490 mg/kg (rat)
Dermal	LD50	5,000 mg/kg (rat)
<b>79-01-6 trichloroethylene</b>		
Oral	LD50	2,402 mg/kg (mouse)
Dermal	LD50	8,450 mg/kg (mouse)

## · Primary irritant effect:

- on the skin: No irritant effect.
- on the eye: No irritating effect.
- Sensitization: No sensitizing effects known.

## · Additional toxicological information:

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

Toxic

Carcinogenic.

The product can cause inheritable damage.

## · Carcinogenic categories

<b>· IARC (International Agency for Research on Cancer)</b>		
71-55-6	1,1,1-trichloroethane	3
79-34-5	1,1,2,2-tetrachloroethane	2B
79-00-5	1,1,2-trichloroethane	3

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75-35-4	1,1-dichloroethylene	3
96-18-4	1,2,3-trichloropropane	2A
96-12-8	1,2-dibromo-3-chloropropane	2B
106-93-4	1,2-dibromoethane	2A
95-50-1	1,2-dichlorobenzene	3
107-06-2	1,2-dichloroethane	2B
78-87-5	propylene dichloride	1
541-73-1	1,3-dichlorobenzene	3
106-46-7	1,4-dichlorobenzene	2B
71-43-2	benzene	1
75-27-4	bromodichloromethane	2B
75-25-2	bromoform	3
56-23-5	carbon tetrachloride	2B
67-66-3	chloroform	2B
124-48-1	dibromochloromethane	3
100-41-4	ethylbenzene	2B
87-68-3	hexachlorobuta-1,3-diene	3
98-82-8	isopropylbenzene	2B
108-38-3	m-xylene	3
75-09-2	dichloromethane	2A
91-20-3	naphthalene	2B
95-47-6	o-xylene	3
106-42-3	p-xylene	3
100-42-5	styrene	2B
127-18-4	tetrachloroethylene	2A
108-88-3	toluene	3
79-01-6	trichloroethylene	1

**· NTP (National Toxicology Program)**

96-18-4	1,2,3-trichloropropane	R
96-12-8	1,2-dibromo-3-chloropropane	R
106-93-4	1,2-dibromoethane	R
107-06-2	1,2-dichloroethane	R
106-46-7	1,4-dichlorobenzene	R
71-43-2	benzene	K
75-27-4	bromodichloromethane	R
56-23-5	carbon tetrachloride	R
67-66-3	chloroform	R
98-82-8	isopropylbenzene	R
75-09-2	dichloromethane	R
91-20-3	naphthalene	R
100-42-5	styrene	R
127-18-4	tetrachloroethylene	R
79-01-6	trichloroethylene	K

**· OSHA-Ca (Occupational Safety & Health Administration)**

96-12-8	1,2-dibromo-3-chloropropane	
71-43-2	benzene	
75-09-2	dichloromethane	

**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.

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**Product Name: VOC Mix (Non-Gases)**

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- **Ecotoxicological effects:**

- **Remark:** Harmful to fish

- **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.

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

Harmful to aquatic organisms

- **Results of PBT and vPvB assessment**

- **PBT:**

87-61-6	1,2,3-trichlorobenzene
120-82-1	1,2,4-trichlorobenzene
87-68-3	hexachlorobuta-1,3-diene

- **vPvB:**

87-68-3	hexachlorobuta-1,3-diene
---------	--------------------------

- **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**

UN1230

- **UN proper shipping name**

- **DOT**

Methanol

- **ADR**

1230 Methanol

- **IMDG, IATA**

METHANOL

- **Transport hazard class(es)**

- **DOT**



- **Class**

3 Flammable liquids

- **Label**

3, 6.1

- **ADR**



- **Class**

3 Flammable liquids

- **Label**

3+6.1

- **IMDG**



- **Class**

3 Flammable liquids

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Product Name: VOC Mix (Non-Gases)

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· Label	3/6.1
· IATA	
	
· Class	3 Flammable liquids
· Label	3 (6.1)
· Packing group	II
· DOT, ADR, IMDG, IATA	II
· Environmental hazards:	Not applicable.
· Special precautions for user	Warning: Flammable liquids
· Danger code (Kemler):	336
· 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.
· Transport/Additional information:	
· ADR	
· Excepted quantities (EQ)	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· IMDG	
· Limited quantities (LQ)	1L
· Excepted quantities (EQ)	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· UN "Model Regulation":	UN 1230 METHANOL, 3 (6.1), II

### 15 Regulatory information

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

· Section 313 (Specific toxic chemical listings):	
67-56-1	methanol
71-55-6	1,1,1-trichloroethane
79-34-5	1,1,2,2-tetrachloroethane
79-00-5	1,1,2-trichloroethane
75-34-3	1,1-dichloroethane
75-35-4	1,1-dichloroethylene
96-18-4	1,2,3-trichloropropane
120-82-1	1,2,4-trichlorobenzene
95-63-6	1,2,4-trimethylbenzene
96-12-8	1,2-dibromo-3-chloropropane
106-93-4	1,2-dibromoethane
95-50-1	1,2-dichlorobenzene
107-06-2	1,2-dichloroethane
78-87-5	propylene dichloride
541-73-1	1,3-dichlorobenzene
106-46-7	1,4-dichlorobenzene
71-43-2	benzene
75-27-4	bromodichloromethane
75-25-2	bromoform
56-23-5	carbon tetrachloride
108-90-7	chlorobenzene

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**Product Name: VOC Mix (Non-Gases)**

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67-66-3	chloroform
74-95-3	dibromomethane
100-41-4	ethylbenzene
87-68-3	hexachlorobuta-1,3-diene
98-82-8	isopropylbenzene
108-38-3	m-xylene
75-09-2	dichloromethane
91-20-3	naphthalene
95-47-6	o-xylene

**· TSCA (Toxic Substances Control Act):**

67-56-1	methanol
71-55-6	1,1,1-trichloroethane
79-34-5	1,1,2,2-tetrachloroethane
79-00-5	1,1,2-trichloroethane
75-34-3	1,1-dichloroethane
75-35-4	1,1-dichloroethylene
87-61-6	1,2,3-trichlorobenzene
96-18-4	1,2,3-trichloropropane
120-82-1	1,2,4-trichlorobenzene
95-63-6	1,2,4-trimethylbenzene
96-12-8	1,2-dibromo-3-chloropropane
106-93-4	1,2-dibromoethane
95-50-1	1,2-dichlorobenzene
107-06-2	1,2-dichloroethane
78-87-5	propylene dichloride
108-67-8	mesitylene
541-73-1	1,3-dichlorobenzene
142-28-9	1,3-dichloropropane
106-46-7	1,4-dichlorobenzene
594-20-7	2,2-dichloropropane
95-49-8	2-chlorotoluene
106-43-4	4-chlorotoluene
71-43-2	benzene
108-86-1	bromobenzene
74-97-5	bromochloromethane
75-27-4	bromodichloromethane
75-25-2	bromoform
56-23-5	carbon tetrachloride
108-90-7	chlorobenzene
67-66-3	chloroform

**· TSCA new (21st Century Act) (Substances not listed)**

96-12-8	1,2-dibromo-3-chloropropane
75-27-4	bromodichloromethane
10061-01-5	(Z)-1,3-dichloropropene
87-68-3	hexachlorobuta-1,3-diene
10061-02-6	trans-1,3-Dichloropropene

**· Proposition 65****· Chemicals known to cause cancer:**

79-34-5	1,1,2,2-tetrachloroethane
79-00-5	1,1,2-trichloroethane
75-34-3	1,1-dichloroethane
75-35-4	1,1-dichloroethylene
96-18-4	1,2,3-trichloropropane
96-12-8	1,2-dibromo-3-chloropropane
106-93-4	1,2-dibromoethane

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107-06-2	1,2-dichloroethane
78-87-5	propylene dichloride
106-46-7	1,4-dichlorobenzene
71-43-2	benzene
75-27-4	bromodichloromethane
75-25-2	bromoform
56-23-5	carbon tetrachloride
67-66-3	chloroform
100-41-4	ethylbenzene
87-68-3	hexachlorobuta-1,3-diene
98-82-8	isopropylbenzene
75-09-2	dichloromethane
91-20-3	naphthalene
100-42-5	styrene
127-18-4	tetrachloroethylene
79-01-6	trichloroethylene
630-20-6	1,1,1,2-Tetrachloroethane

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

None of the ingredients is listed.

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

96-12-8	1,2-dibromo-3-chloropropane
106-93-4	1,2-dibromoethane
71-43-2	benzene
79-01-6	trichloroethylene

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

67-56-1	methanol
106-93-4	1,2-dibromoethane
71-43-2	benzene
67-66-3	chloroform
108-88-3	toluene
79-01-6	trichloroethylene

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**

71-55-6	1,1,1-trichloroethane	II
79-34-5	1,1,2,2-tetrachloroethane	L
79-00-5	1,1,2-trichloroethane	C
75-34-3	1,1-dichloroethane	C
75-35-4	1,1-dichloroethylene	C, S (inh.), I (oral)
96-18-4	1,2,3-trichloropropane	L
120-82-1	1,2,4-trichlorobenzene	D
95-63-6	1,2,4-trimethylbenzene	II
106-93-4	1,2-dibromoethane	L
95-50-1	1,2-dichlorobenzene	D
107-06-2	1,2-dichloroethane	B2
108-67-8	mesitylene	II
541-73-1	1,3-dichlorobenzene	D
71-43-2	benzene	A, K/L
108-86-1	bromobenzene	II
74-97-5	bromochloromethane	D
75-27-4	bromodichloromethane	B2
75-25-2	bromoform	B2
56-23-5	carbon tetrachloride	L
108-90-7	chlorobenzene	D
67-66-3	chloroform	B2, L, NL
156-59-2	cis-dichloroethylene	II

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124-48-1	dibromochloromethane	C
100-41-4	ethylbenzene	D
87-68-3	hexachlorobuta-1,3-diene	C
98-82-8	isopropylbenzene	D, CBD
108-38-3	m-xylene	I
75-09-2	dichloromethane	L
91-20-3	naphthalene	C, CBD
95-47-6	o-xylene	I

· **TLV (Threshold Limit Value established by ACGIH)**

71-55-6	1,1,1-trichloroethane	A4
79-34-5	1,1,2,2-tetrachloroethane	A3
79-00-5	1,1,2-trichloroethane	A3
75-34-3	1,1-dichloroethane	A4
75-35-4	1,1-dichloroethylene	A4
96-18-4	1,2,3-trichloropropane	A3
106-93-4	1,2-dibromoethane	A3
95-50-1	1,2-dichlorobenzene	A4
107-06-2	1,2-dichloroethane	A4
78-87-5	propylene dichloride	A4
106-46-7	1,4-dichlorobenzene	A3
71-43-2	benzene	A1
75-25-2	bromoform	A3
56-23-5	carbon tetrachloride	A2
108-90-7	chlorobenzene	A3
67-66-3	chloroform	A3
100-41-4	ethylbenzene	A3
87-68-3	hexachlorobuta-1,3-diene	A3
108-38-3	m-xylene	A4
75-09-2	dichloromethane	A3
91-20-3	naphthalene	A4
95-47-6	o-xylene	A4
106-42-3	p-xylene	A4
100-42-5	styrene	A4
127-18-4	tetrachloroethylene	A3
108-88-3	toluene	A4
79-01-6	trichloroethylene	A2

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

79-34-5	1,1,2,2-tetrachloroethane
79-00-5	1,1,2-trichloroethane
75-35-4	1,1-dichloroethylene
96-18-4	1,2,3-trichloropropane
96-12-8	1,2-dibromo-3-chloropropane
106-93-4	1,2-dibromoethane
107-06-2	1,2-dichloroethane
78-87-5	propylene dichloride
106-46-7	1,4-dichlorobenzene
71-43-2	benzene
56-23-5	carbon tetrachloride
67-66-3	chloroform
87-68-3	hexachlorobuta-1,3-diene
75-09-2	dichloromethane
127-18-4	tetrachloroethylene
79-01-6	trichloroethylene

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

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Product Name: VOC Mix (Non-Gases)

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## · Hazard pictograms



GHS02

GHS06

GHS07

GHS08

· Signal word *Danger*

## · Hazard-determining components of labeling:

methanol

1,2-dibromo-3-chloropropane

1,1,2,2-tetrachloroethane

benzene

(Z)-1,3-dichloropropene

## · Hazard statements

H225 Highly flammable liquid and vapor.

H331 Toxic if inhaled.

H317 May cause an allergic skin reaction.

H340 May cause genetic defects.

H350 May cause cancer.

H360 May damage fertility or the unborn child.

H370 Causes damage to organs.

H373 May cause damage to organs through prolonged or repeated exposure.

## · Precautionary statements

If medical advice is needed, have product container or label at hand.

Keep out of reach of children.

Read label before use.

Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

Use explosion-proof electrical/ventilating/lighting/equipment.

Do not breathe dust/fume/gas/mist/vapors/spray.

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

Store locked up.

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

## · National regulations:

## · 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.

## · 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: product safety department

## · Contact:

SPEX CertiPrep, LLC.

1-732-549-7144

## · Date of preparation / last revision 11/20/2018 / -

## · 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 &amp; Health

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

BEL: Biological Exposure Limit

Flam. Liq. 2: Flammable liquids – Category 2

Acute Tox. 3: Acute toxicity – Category 3

Skin Sens. 1: Skin sensitisation – Category 1

(Contd. on page 20)

**Safety Data Sheet**  
**acc. to OSHA HCS**

Printing date 11/20/2018

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**Product Name: VOC Mix (Non-Gases)**

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*Muta. 1B: Germ cell mutagenicity – Category 1B*  
*Carc. 1A: Carcinogenicity – Category 1A*  
*Repr. 1A: Reproductive toxicity – Category 1A*  
*STOT SE 1: Specific target organ toxicity (single exposure) – Category 1*  
*STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2*

US