

**1 Identification**

- **Product identifier**
- **Product Name: Volatile Organics Mix (High Level)**
- **Part Number: 60-BIG-MIX-2000**
- **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. 1 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*

*1,2-dibromoethane*

*1,1,2,2-tetrachloroethane*

*(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**

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)**



· **HMS-ratings (scale 0 - 4)**

HEALTH	1	Health = *1
FIRE	3	Fire = 3
REACTIVITY	0	Reactivity = 0

· **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	88.0%
98-82-8	isopropylbenzene	0.2%
75-35-4	1,1-dichloroethylene	0.2%
630-20-6	1,1,1,2-Tetrachloroethane	0.2%
79-34-5	1,1,2,2-tetrachloroethane	0.2%
79-00-5	1,1,2-trichloroethane	0.2%
96-18-4	1,2,3-trichloropropane	0.2%
87-61-6	1,2,3-trichlorobenzene	0.2%
106-93-4	1,2-dibromoethane	0.2%
96-12-8	1,2-dibromo-3-chloropropane	0.2%
120-82-1	1,2,4-trichlorobenzene	0.2%
107-06-2	1,2-dichloroethane	0.2%
78-87-5	1,2-dichloropropane	0.2%
106-46-7	1,4-dichlorobenzene	0.2%
71-43-2	benzene	0.2%
91-20-3	naphthalene	0.2%
103-65-1	propylbenzene	0.2%
75-09-2	dichloromethane	0.2%
75-27-4	bromodichloromethane	0.2%
56-23-5	carbon tetrachloride	0.2%
75-00-3	chloroethane	0.2%

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67-66-3	chloroform	0.2%
74-87-3	chloromethane	0.2%
100-42-5	styrene	0.2%
10061-01-5	(Z)-1,3-dichloropropene	0.2%
108-88-3	toluene	0.2%
127-18-4	tetrachloroethylene	0.2%
79-01-6	trichloroethylene	0.2%
10061-02-6	trans-1,3-Dichloropropene	0.2%
75-01-4	vinyl chloride	0.2%
100-41-4	ethylbenzene	0.2%
87-68-3	hexachlorobuta-1,3-diene	0.2%

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

108-38-3	m-xylene	0.2%
563-58-6	1,1-dichloropropene	0.2%
75-34-3	1,1-dichloroethane	0.2%
71-55-6	1,1,1-trichloroethane	0.2%
108-67-8	mesitylene	0.2%
541-73-1	1,3-dichlorobenzene	0.2%
95-50-1	1,2-dichlorobenzene	0.2%
95-63-6	1,2,4-trimethylbenzene	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%
104-51-8	butylbenzene	0.2%
74-83-9	bromomethane	0.2%
75-25-2	bromoform	0.2%
74-97-5	bromochloromethane	0.2%
108-86-1	bromobenzene	0.2%
95-47-6	o-xylene	0.2%
108-90-7	chlorobenzene	0.2%
156-59-2	cis-dichloroethylene	0.2%
106-42-3	p-xylene	0.2%
99-87-6	Cymol	0.2%
135-98-8	sec-butylbenzene	0.2%
124-48-1	dibromochloromethane	0.2%
98-06-6	tert-butylbenzene	0.2%
156-60-5	trans-dichloroethylene	0.2%
74-95-3	dibromomethane	0.2%
75-71-8	dichlorodifluoromethane	0.2%
75-69-4	trichlorofluoromethane	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.**· Information for Doctor:****· Most important symptoms and effects, both acute and delayed** No further relevant information available.

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

### 5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:** 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-I:**

67-56-1	methanol	530 ppm
98-82-8	isopropylbenzene	50 ppm
108-38-3	m-xylene	130 ppm
563-58-6	1,1-dichloropropene	1.3 ppm
75-35-4	1,1-dichloroethylene	45 ppm
75-34-3	1,1-dichloroethane	300 ppm
71-55-6	1,1,1-trichloroethane	230 ppm
630-20-6	1,1,1,2-Tetrachloroethane	0.2 ppm
79-34-5	1,1,2,2-tetrachloroethane	3 ppm
79-00-5	1,1,2-trichloroethane	30 ppm
96-18-4	1,2,3-trichloropropane	0.015 ppm
87-61-6	1,2,3-trichlorobenzene	15 mg/m <sup>3</sup>
108-67-8	mesitylene	140 ppm
541-73-1	1,3-dichlorobenzene	6 ppm
106-93-4	1,2-dibromoethane	17 ppm
96-12-8	1,2-dibromo-3-chloropropane	0.003 ppm
95-50-1	1,2-dichlorobenzene	50 ppm
95-63-6	1,2,4-trimethylbenzene	140 ppm
120-82-1	1,2,4-trichlorobenzene	0.45 ppm
107-06-2	1,2-dichloroethane	50 ppm
78-87-5	1,2-dichloropropane	30 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
91-20-3	naphthalene	15 ppm
103-65-1	propylbenzene	3.7 ppm
104-51-8	butylbenzene	3.6 ppm

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<b>· PAC-2:</b>		
67-56-1	methanol	2,100 ppm
98-82-8	isopropylbenzene	300 ppm
108-38-3	m-xylene	920 ppm
563-58-6	1,1-dichloropropene	15 ppm
75-35-4	1,1-dichloroethylene	500 ppm
75-34-3	1,1-dichloroethane	670 ppm
71-55-6	1,1,1-trichloroethane	600 ppm
630-20-6	1,1,1,2-Tetrachloroethane	2.2 ppm
79-34-5	1,1,2,2-tetrachloroethane	120 ppm
79-00-5	1,1,2-trichloroethane	180 ppm
96-18-4	1,2,3-trichloropropane	170 ppm
87-61-6	1,2,3-trichlorobenzene	60 mg/m3
108-67-8	mesitylene	360 ppm
541-73-1	1,3-dichlorobenzene	66 ppm
106-93-4	1,2-dibromoethane	24 ppm
96-12-8	1,2-dibromo-3-chloropropane	2.2 ppm
95-50-1	1,2-dichlorobenzene	170 ppm
95-63-6	1,2,4-trimethylbenzene	360 ppm
120-82-1	1,2,4-trichlorobenzene	5 ppm
107-06-2	1,2-dichloroethane	200 ppm
78-87-5	1,2-dichloropropane	220 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
91-20-3	naphthalene	83 ppm
103-65-1	propylbenzene	41 ppm
104-51-8	butylbenzene	40 ppm

<b>· PAC-3:</b>		
67-56-1	methanol	7200* ppm
98-82-8	isopropylbenzene	730 ppm
108-38-3	m-xylene	2500* ppm
563-58-6	1,1-dichloropropene	87 ppm
75-35-4	1,1-dichloroethylene	1,000 ppm
75-34-3	1,1-dichloroethane	4,000 ppm
71-55-6	1,1,1-trichloroethane	4,200 ppm
630-20-6	1,1,1,2-Tetrachloroethane	13 ppm
79-34-5	1,1,2,2-tetrachloroethane	150 ppm
79-00-5	1,1,2-trichloroethane	500 ppm
96-18-4	1,2,3-trichloropropane	1,000 ppm
87-61-6	1,2,3-trichlorobenzene	360 mg/m3
108-67-8	mesitylene	480 ppm
541-73-1	1,3-dichlorobenzene	400 ppm
106-93-4	1,2-dibromoethane	46 ppm
96-12-8	1,2-dibromo-3-chloropropane	4.3 ppm
95-50-1	1,2-dichlorobenzene	1,000 ppm
95-63-6	1,2,4-trimethylbenzene	480 ppm
120-82-1	1,2,4-trichlorobenzene	20 ppm
107-06-2	1,2-dichloroethane	300 ppm
78-87-5	1,2-dichloropropane	2,000 ppm
142-28-9	1,3-dichloropropane	350 ppm
106-46-7	1,4-dichlorobenzene	1,000 ppm

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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
91-20-3	naphthalene	500 ppm
103-65-1	propylbenzene	240 ppm
104-51-8	butylbenzene	240 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.

<b>67-56-1 methanol</b>	
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
<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-A2
<b>75-35-4 1,1-dichloroethylene</b>	
REL	See Pocket Guide App.A
TLV	Long-term value: 20 mg/m <sup>3</sup> , 5 ppm
<b>630-20-6 1,1,1,2-Tetrachloroethane</b>	
REL	Handle with caution; See Pocket Guide App. C
<b>79-34-5 1,1,2,2-tetrachloroethane</b>	
PEL	Long-term value: 35 mg/m <sup>3</sup> , 5 ppm Skin

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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
<b>79-00-5 1,1,2-trichloroethane</b>	
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
<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>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>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>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>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 1,2-dichloropropane</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

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**91-20-3 naphthalene**

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

**75-09-2 dichloromethane**

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

**56-23-5 carbon tetrachloride**

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

**75-00-3 chloroethane**

PEL Long-term value: 2600 mg/m<sup>3</sup>, 1000 ppm  
 REL Handle with caution; See Pocket Guide App. C  
 TLV Long-term value: 264 mg/m<sup>3</sup>, 100 ppm  
 Skin

**67-66-3 chloroform**

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  
 TLV Long-term value: 49 mg/m<sup>3</sup>, 10 ppm

**74-87-3 chloromethane**

PEL Long-term value: 100 ppm  
 Ceiling limit value: 200; 300\* ppm  
 \*5-min peak in any 3 hrs  
 REL See Pocket Guide App. A  
 TLV Short-term value: 207 mg/m<sup>3</sup>, 100 ppm  
 Long-term value: 103 mg/m<sup>3</sup>, 50 ppm  
 Skin

**100-42-5 styrene**

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 mg/m<sup>3</sup>, 20 ppm  
 BEI

**108-88-3 toluene**

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

**127-18-4 tetrachloroethylene**

PEL Long-term value: 100 ppm  
 Ceiling limit value: 200; 300\* ppm  
 \*5-min peak in any 3 hrs

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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>79-01-6 trichloroethylene</b>	
PEL	Long-term value: 100 ppm Ceiling limit value: 200; 300* ppm *5-min peak in any 2 hrs
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>75-01-4 vinyl chloride</b>	
PEL	Short-term value: 5* ppm Long-term value: 1 ppm *Avg. not exceeding any 15 min; see 29CFR1910.1017
REL	See Pocket Guide App.A
TLV	Long-term value: 2.6 mg/m <sup>3</sup> , 1 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>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>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)

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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)

**127-18-4 tetrachloroethylene**

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

**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)

**100-41-4 ethylbenzene**

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)

· **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.

· **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.

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Product Name: Volatile Organics Mix (High Level)

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## · 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:

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 °F)

· Flash point: 11 °C (52 °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:	44.0 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:	93.8 %
VOC content:	93.0 %

Solids content: 0.8 %

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

### 10 Stability and reactivity

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

### 11 Toxicological information

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

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

<b>67-56-1 methanol</b>		
Oral	LD50	5628 mg/kg (rat)
Dermal	LD50	15800 mg/kg (rabbit)
<b>71-55-6 1,1,1-trichloroethane</b>		
Oral	LD50	10300 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	1770 mg/kg (rabbit)
<b>106-93-4 1,2-dibromoethane</b>		
Oral	LD50	108 mg/kg (rat)
Dermal	LD50	300 mg/kg (rabbit)
<b>96-12-8 1,2-dibromo-3-chloropropane</b>		
Oral	LD50	170 mg/kg (rat)
Dermal	LD50	1420 mg/kg (rat)
<b>95-50-1 1,2-dichlorobenzene</b>		
Oral	LD50	500 mg/kg (rat)
<b>120-82-1 1,2,4-trichlorobenzene</b>		
Oral	LD50	756 mg/kg (rat)
<b>107-06-2 1,2-dichloroethane</b>		
Oral	LD50	670 mg/kg (rat)
Dermal	LD50	2800 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	4894 mg/kg (rat)
Dermal	LD50	48 mg/kg (mouse)
Inhalative	LC50/4 h	9980 mg/l (mouse)
<b>91-20-3 naphthalene</b>		
Oral	LD50	490 mg/kg (rat)
Dermal	LD50	5000 mg/kg (rat)
<b>74-83-9 bromomethane</b>		
Oral	LD50	214 mg/kg (rat)
Inhalative	LC50/4 h	302 mg/l (rat)
<b>56-23-5 carbon tetrachloride</b>		
Oral	LD50	2350 mg/kg (rat)
Dermal	LD50	5070 mg/kg (rat)

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<b>79-01-6 trichloroethylene</b>		
Oral	LD50	2402 mg/kg (mouse)
Dermal	LD50	8450 mg/kg (mouse)
<b>75-69-4 trichlorofluoromethane</b>		
Oral	LD50	>15000 mg/kg (rat)
<b>75-01-4 vinyl chloride</b>		
Oral	LD50	500 mg/kg (rat)

- **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>		
98-82-8	isopropylbenzene	2B
108-38-3	m-xylene	3
75-35-4	1,1-dichloroethylene	3
71-55-6	1,1,1-trichloroethane	3
630-20-6	1,1,1,2-Tetrachloroethane	2B
79-34-5	1,1,2,2-tetrachloroethane	2B
79-00-5	1,1,2-trichloroethane	3
96-18-4	1,2,3-trichloropropane	2A
541-73-1	1,3-dichlorobenzene	3
106-93-4	1,2-dibromoethane	2A
96-12-8	1,2-dibromo-3-chloropropane	2B
95-50-1	1,2-dichlorobenzene	3
107-06-2	1,2-dichloroethane	2B
78-87-5	1,2-dichloropropane	1
106-46-7	1,4-dichlorobenzene	2B
71-43-2	benzene	1
91-20-3	naphthalene	2B
75-09-2	dichloromethane	2A
74-83-9	bromomethane	3
75-25-2	bromoform	3
75-27-4	bromodichloromethane	2B
56-23-5	carbon tetrachloride	2B
95-47-6	o-xylene	3
75-00-3	chloroethane	3
67-66-3	chloroform	2B
74-87-3	chloromethane	3
106-42-3	p-xylene	3
100-42-5	styrene	2B
124-48-1	dibromochloromethane	3
108-88-3	toluene	3

- **NTP (National Toxicology Program)**

98-82-8	isopropylbenzene	R
96-18-4	1,2,3-trichloropropane	R
106-93-4	1,2-dibromoethane	R
96-12-8	1,2-dibromo-3-chloropropane	R
107-06-2	1,2-dichloroethane	R
106-46-7	1,4-dichlorobenzene	R
71-43-2	benzene	K
91-20-3	naphthalene	R

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75-09-2	dichloromethane	R
75-27-4	bromodichloromethane	R
56-23-5	carbon tetrachloride	R
67-66-3	chloroform	R
100-42-5	styrene	R
127-18-4	tetrachloroethylene	R
79-01-6	trichloroethylene	K
75-01-4	vinyl chloride	K
· <b>OSHA-Ca (Occupational Safety &amp; Health Administration)</b>		
96-12-8	1,2-dibromo-3-chloropropane	
71-43-2	benzene	
75-09-2	dichloromethane	
75-01-4	vinyl chloride	

### 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:** 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**

· <b>PBT:</b>	
87-61-6	1,2,3-trichlorobenzene
120-82-1	1,2,4-trichlorobenzene
87-68-3	hexachlorobuta-1,3-diene
· <b>vPvB:</b>	
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

· <b>UN-Number</b>	
· <b>DOT, ADR, IMDG, IATA</b>	UN1230
· <b>UN proper shipping name</b>	
· <b>DOT</b>	Methanol
· <b>ADR</b>	1230 Methanol
· <b>IMDG, IATA</b>	METHANOL

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· **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

· **Label**

3/6.1

· **IATA**



· **Class**

3 Flammable liquids

· **Label**

3 (6.1)

· **Packing group**

· **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)**

IL

· **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

US

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**15 Regulatory information**

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

## · Section 355 (extremely hazardous substances):

75-34-3	1,1-dichloroethane
74-83-9	bromomethane
67-66-3	chloroform

## · Section 313 (Specific toxic chemical listings):

67-56-1	methanol
98-82-8	isopropylbenzene
108-38-3	m-xylene
75-35-4	1,1-dichloroethylene
75-34-3	1,1-dichloroethane
71-55-6	1,1,1-trichloroethane
630-20-6	1,1,1,2-Tetrachloroethane
79-34-5	1,1,2,2-tetrachloroethane
79-00-5	1,1,2-trichloroethane
96-18-4	1,2,3-trichloropropane
541-73-1	1,3-dichlorobenzene
106-93-4	1,2-dibromoethane
96-12-8	1,2-dibromo-3-chloropropane
95-50-1	1,2-dichlorobenzene
95-63-6	1,2,4-trimethylbenzene
120-82-1	1,2,4-trichlorobenzene
107-06-2	1,2-dichloroethane
78-87-5	1,2-dichloropropane
106-46-7	1,4-dichlorobenzene
71-43-2	benzene
91-20-3	naphthalene
75-09-2	dichloromethane
74-83-9	bromomethane
75-25-2	bromoform
75-27-4	bromodichloromethane
56-23-5	carbon tetrachloride
95-47-6	o-xylene
75-00-3	chloroethane
108-90-7	chlorobenzene
67-66-3	chloroform

## · TSCA (Toxic Substances Control Act):

67-56-1	methanol
98-82-8	isopropylbenzene
108-38-3	m-xylene
75-35-4	1,1-dichloroethylene
75-34-3	1,1-dichloroethane
71-55-6	1,1,1-trichloroethane
630-20-6	1,1,1,2-Tetrachloroethane
79-34-5	1,1,2,2-tetrachloroethane
79-00-5	1,1,2-trichloroethane
96-18-4	1,2,3-trichloropropane
87-61-6	1,2,3-trichlorobenzene
108-67-8	mesitylene
541-73-1	1,3-dichlorobenzene
106-93-4	1,2-dibromoethane
96-12-8	1,2-dibromo-3-chloropropane
95-50-1	1,2-dichlorobenzene

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95-63-6	1,2,4-trimethylbenzene
120-82-1	1,2,4-trichlorobenzene
107-06-2	1,2-dichloroethane
78-87-5	1,2-dichloropropane
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
91-20-3	naphthalene
103-65-1	propylbenzene
104-51-8	butylbenzene
75-09-2	dichloromethane

**· Proposition 65**

**· Chemicals known to cause cancer:**

98-82-8	isopropylbenzene
75-34-3	1,1-dichloroethane
630-20-6	1,1,1,2-Tetrachloroethane
79-34-5	1,1,2,2-tetrachloroethane
79-00-5	1,1,2-trichloroethane
96-18-4	1,2,3-trichloropropane
106-93-4	1,2-dibromoethane
96-12-8	1,2-dibromo-3-chloropropane
107-06-2	1,2-dichloroethane
78-87-5	1,2-dichloropropane
106-46-7	1,4-dichlorobenzene
71-43-2	benzene
91-20-3	naphthalene
75-09-2	dichloromethane
75-25-2	bromoform
75-27-4	bromodichloromethane
56-23-5	carbon tetrachloride
75-00-3	chloroethane
67-66-3	chloroform
100-42-5	styrene
127-18-4	tetrachloroethylene
79-01-6	trichloroethylene
75-01-4	vinyl chloride
100-41-4	ethylbenzene
87-68-3	hexachlorobuta-1,3-diene

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

None of the ingredients is listed.

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

106-93-4	1,2-dibromoethane
96-12-8	1,2-dibromo-3-chloropropane
71-43-2	benzene
74-87-3	chloromethane
79-01-6	trichloroethylene

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

67-56-1	methanol
106-93-4	1,2-dibromoethane
71-43-2	benzene
74-83-9	bromomethane
67-66-3	chloroform

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74-87-3	chloromethane	
108-88-3	toluene	
79-01-6	trichloroethylene	

· **Carcinogenic categories**· **EPA (Environmental Protection Agency)**

98-82-8	isopropylbenzene	D, CBD
108-38-3	m-xylene	I
75-35-4	1,1-dichloroethylene	C, S (inh.), I (oral)
75-34-3	1,1-dichloroethane	C
71-55-6	1,1,1-trichloroethane	II
630-20-6	1,1,1,2-Tetrachloroethane	C
79-34-5	1,1,2,2-tetrachloroethane	L
79-00-5	1,1,2-trichloroethane	C
96-18-4	1,2,3-trichloropropane	L
108-67-8	mesitylene	II
541-73-1	1,3-dichlorobenzene	D
106-93-4	1,2-dibromoethane	L
95-50-1	1,2-dichlorobenzene	D
95-63-6	1,2,4-trimethylbenzene	II
120-82-1	1,2,4-trichlorobenzene	D
107-06-2	1,2-dichloroethane	B2
71-43-2	benzene	A, K/L
91-20-3	naphthalene	C, CBD
75-09-2	dichloromethane	L
74-83-9	bromomethane	D
75-25-2	bromoform	B2
75-27-4	bromodichloromethane	B2
74-97-5	bromochloromethane	D
108-86-1	bromobenzene	II
56-23-5	carbon tetrachloride	L
95-47-6	o-xylene	I
108-90-7	chlorobenzene	D
67-66-3	chloroform	B2, L, NL
74-87-3	chloromethane	D, CBD
156-59-2	cis-dichloroethylene	II

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

108-38-3	m-xylene	A4
75-35-4	1,1-dichloroethylene	A4
75-34-3	1,1-dichloroethane	A4
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
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	1,2-dichloropropane	A4
106-46-7	1,4-dichlorobenzene	A3
71-43-2	benzene	A1
91-20-3	naphthalene	A4
75-09-2	dichloromethane	A3
74-83-9	bromomethane	A4
75-25-2	bromoform	A3
56-23-5	carbon tetrachloride	A2
95-47-6	o-xylene	A4

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75-00-3	chloroethane	A3
108-90-7	chlorobenzene	A3
67-66-3	chloroform	A3
74-87-3	chloromethane	A4
106-42-3	p-xylene	A4
100-42-5	styrene	A4
108-88-3	toluene	A4
127-18-4	tetrachloroethylene	A3
75-71-8	dichlorodifluoromethane	A4
79-01-6	trichloroethylene	A2
75-69-4	trichlorofluoromethane	A4

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

75-35-4	1,1-dichloroethylene
79-34-5	1,1,2,2-tetrachloroethane
79-00-5	1,1,2-trichloroethane
96-18-4	1,2,3-trichloropropane
106-93-4	1,2-dibromoethane
96-12-8	1,2-dibromo-3-chloropropane
107-06-2	1,2-dichloroethane
78-87-5	1,2-dichloropropane
106-46-7	1,4-dichlorobenzene
71-43-2	benzene
75-09-2	dichloromethane
74-83-9	bromomethane
56-23-5	carbon tetrachloride
67-66-3	chloroform
74-87-3	chloromethane
127-18-4	tetrachloroethylene
79-01-6	trichloroethylene
75-01-4	vinyl chloride
87-68-3	hexachlorobuta-1,3-diene

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

· **Hazard pictograms**



· **Signal word** Danger

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

methanol

1,2-dibromo-3-chloropropane

1,2-dibromoethane

1,1,2,2-tetrachloroethane

(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**

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.

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

Printing date 09/06/2017

Reviewed on 09/06/2017

**Product Name: Volatile Organics Mix (High Level)**

(Contd. of page 19)

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** 09/06/2017 / -

· **Abbreviations and acronyms:**

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

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

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

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

VOC: Volatile Organic Compounds (USA, EU)

LCS0: 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

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

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

Carc. 1A: Carcinogenicity – Category 1A

Repr. 1: Reproductive toxicity – Category 1

STOT SE 1: Specific target organ toxicity (single exposure) – Category 1

STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2

US