Safety Data Sheet
acc. to OSHA HCS

Printing date 12/06/2018 *Reviewed on 12/06/2018*

1 Identification

· **Product identifier**

· **Product Name: Semi-volatile Calibration Standard**

· **Part Number:** BIG-BN-2
· **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. 2 H310 Fatal in contact with skin.

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 RE 1 H372 Causes damage to organs through prolonged or repeated exposure.
Asp. Tox. 1 H304 May be fatal if swallowed and enters airways.

GHS07

Acute Tox. 4 H302 Harmful if swallowed.
Acute Tox. 4 H332 Harmful if inhaled.
Skin Irrit. 2 H315 Causes skin irritation.
Eye Irrit. 2A H319 Causes serious eye irritation.
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:**
benzene
dichloromethane
nitrobenzene
bis(2-chloroethyl) ether

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4-Bromodiphenyl ether
4-chloroaniline
benzo[a]pyrene

· **Hazard statements**
H225 Highly flammable liquid and vapor.
H302+H332 Harmful if swallowed or if inhaled.
H310 Fatal in contact with skin.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H317 May cause an allergic skin reaction.
H340 May cause genetic defects.
H350 May cause cancer.
H360 May damage fertility or the unborn child.
H372 Causes damage to organs through prolonged or repeated exposure.
H304 May be fatal if swallowed and enters airways.

· **Precautionary statements**
If medical advice is needed, have product container or label at hand.
Keep out of reach of children.
Read label before use.
If swallowed: Immediately call a poison center/doctor.
Specific treatment (see on this label).
If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Rinse mouth.
Take off immediately all contaminated clothing and wash it before reuse.
Store locked up.
Dispose of contents/container in accordance with local/regional/national/international regulations.

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

Health = 3
Fire = 3
Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**

Health = *3
Fire = 3
Reactivity = 0

· **Other hazards**
· **Results of PBT and vPvB assessment**

· **PBT:**	
120-12-7	anthracene
87-68-3	hexachlorobuta-1,3-diene
120-82-1	1,2,4-trichlorobenzene

· **vPvB:**	
87-68-3	hexachlorobuta-1,3-diene

3 Composition/information on ingredients

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

· **Dangerous components:**		
75-09-2	dichloromethane	45.1%
71-43-2	benzene	45.1%
106-46-7	1,4-dichlorobenzene	0.2%
121-14-2	2,4-dinitrotoluene	0.2%
606-20-2	2,6-dinitrotoluene	0.2%
101-55-3	4-Bromodiphenyl ether	0.2%
106-47-8	4-chloroaniline	0.2%
120-12-7	anthracene	0.2%
56-55-3	benz[a]anthracene	0.2%

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50-32-8	benzo[a]pyrene	0.2%
205-99-2	benz[e]acephenanthrylene	0.2%
191-24-2	Benzo(g,h,i)perylene	0.2%
207-08-9	benzo[k]fluoranthene	0.2%
111-44-4	bis(2-chloroethyl) ether	0.2%
117-81-7	bis(2-ethylhexyl) phthalate	0.2%
85-68-7	BBP	0.2%
218-01-9	chrysene	0.2%
84-74-2	dibutyl phthalate	0.2%
117-84-0	Di-n-octyl Phthalate	0.2%
53-70-3	dibenz[a,h]anthracene	0.2%
118-74-1	hexachlorobenzene	0.2%
87-68-3	hexachlorobuta-1,3-diene	0.2%
67-72-1	hexachloroethane	0.2%
193-39-5	indeno[1,2,3-cd]pyrene	0.2%
78-59-1	3,5,5-trimethylcyclohex-2-enone	0.2%
621-64-7	nitrosodipropylamine	0.2%
91-20-3	naphthalene	0.2%
98-95-3	nitrobenzene	0.2%
120-82-1	1,2,4-trichlorobenzene	0.2%

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

541-73-1	1,3-dichlorobenzene	0.2%
91-58-7	2-Chloronaphthalene	0.2%
91-57-6	2-methylnaphthalene	0.2%
88-74-4	o-nitroaniline	0.2%
99-09-2	m-nitroaniline	0.2%
7005-72-3	4-Chlorophenyl-phenyl ether	0.2%
100-01-6	p-nitroaniline	0.2%
83-32-9	acenaphthene	0.2%
208-96-8	acenaphthylene	0.2%
100-51-6	Benzyl alcohol	0.2%
111-91-1	bis(2-chloroethoxy)methane	0.2%
108-60-1	bis(2-chloro-1-methylethyl) ether	0.2%
132-64-9	dibenzofuran	0.2%
84-66-2	diethyl phthalate	0.2%
131-11-3	dimethyl phthalate	0.2%
206-44-0	fluoranthene	0.2%
86-73-7	fluorene	0.2%
77-47-4	hexachlorocyclopentadiene	0.2%
86-30-6	nitrosodiphenylamine	0.2%
85-01-8	phenanthrene, pure	0.2%
129-00-0	pyrene	0.2%
95-50-1	1,2-dichlorobenzene	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.
· **After inhalation:**
Supply fresh air and to be sure call for a doctor.
In case of unconsciousness place patient stably in side position for transportation.
· **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
· **After eye contact:** Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
· **After swallowing:**
Immediately call a doctor.
Do not give anything to eat or drink - Do not induce vomitting

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· **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.

5 Fire-fighting measures

· **Extinguishing media**
· **Suitable extinguishing agents:** CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
· **For safety reasons unsuitable extinguishing agents:** Water with full jet
· **Special hazards arising from the substance or mixture** During heating or in case of fire poisonous gases are produced.
· **Advice for firefighters**
· **Protective equipment:** Mouth respiratory protective device.

6 Accidental release measures

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

· **PAC-1:**		
75-09-2	dichloromethane	200 ppm
71-43-2	benzene	52 ppm
541-73-1	1,3-dichlorobenzene	6 ppm
106-46-7	1,4-dichlorobenzene	30 ppm
121-14-2	2,4-dinitrotoluene	0.6 mg/m³
606-20-2	2,6-dinitrotoluene	0.6 mg/m³
91-58-7	2-Chloronaphthalene	6.2 mg/m³
91-57-6	2-methylnaphthalene	9 mg/m³
88-74-4	o-nitroaniline	6.2 mg/m³
99-09-2	m-nitroaniline	1.6 mg/m³
101-55-3	4-Bromodiphenyl ether	0.33 mg/m³
106-47-8	4-chloroaniline	6.1 mg/m³
7005-72-3	4-Chlorophenyl-phenyl ether	1.5 mg/m³
100-01-6	p-nitroaniline	9 mg/m³
83-32-9	acenaphthene	3.6 mg/m³
208-96-8	acenaphthylene	10 mg/m³
120-12-7	anthracene	48 mg/m³
56-55-3	benz[a]anthracene	0.6 mg/m³
50-32-8	benzo[a]pyrene	0.6 mg/m³
205-99-2	benz[e]acephenanthrylene	0.12 mg/m³
191-24-2	Benzo(g,h,i)perylene	30 mg/m³
100-51-6	Benzyl alcohol	30 ppm
111-91-1	bis(2-chloroethoxy)methane	0.04 ppm
111-44-4	bis(2-chloroethyl) ether	10 ppm
108-60-1	bis(2-chloro-1-methylethyl) ether	0.15 ppm
117-81-7	bis(2-ethylhexyl) phthalate	10 mg/m³
85-68-7	BBP	15 mg/m³
218-01-9	chrysene	0.6 mg/m³
84-74-2	dibutyl phthalate	15 mg/m³
117-84-0	Di-n-octyl Phthalate	41 mg/m³

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· **PAC-2:**		
75-09-2	dichloromethane	560 ppm
71-43-2	benzene	800 ppm
541-73-1	1,3-dichlorobenzene	66 ppm
106-46-7	1,4-dichlorobenzene	170 ppm
121-14-2	2,4-dinitrotoluene	12 mg/m³
606-20-2	2,6-dinitrotoluene	47 mg/m³
91-58-7	2-Chloronaphthalene	69 mg/m³
91-57-6	2-methylnaphthalene	54 mg/m³
88-74-4	o-nitroaniline	68 mg/m³
99-09-2	m-nitroaniline	18 mg/m³
101-55-3	4-Bromodiphenyl ether	3.6 mg/m³
106-47-8	4-chloroaniline	68 mg/m³
7005-72-3	4-Chlorophenyl-phenyl ether	35 mg/m³
100-01-6	p-nitroaniline	71 mg/m³
83-32-9	acenaphthene	40 mg/m³
208-96-8	acenaphthylene	110 mg/m³
120-12-7	anthracene	530 mg/m³
56-55-3	benz[a]anthracene	120 mg/m³
50-32-8	benzo[a]pyrene	120 mg/m³
205-99-2	benz[e]acephenanthrylene	1.3 mg/m³
191-24-2	Benzo(g,h,i)perylene	330 mg/m³
100-51-6	Benzyl alcohol	52 ppm
111-91-1	bis(2-chloroethoxy)methane	0.44 ppm
111-44-4	bis(2-chloroethyl) ether	25 ppm
108-60-1	bis(2-chloro-1-methylethyl) ether	1.6 ppm
117-81-7	bis(2-ethylhexyl) phthalate	1,000 mg/m³
85-68-7	BBP	77 mg/m³
218-01-9	chrysene	12 mg/m³
84-74-2	dibutyl phthalate	1,600 mg/m³
117-84-0	Di-n-octyl Phthalate	450 mg/m³

· **PAC-3:**		
75-09-2	dichloromethane	6,900 ppm
71-43-2	benzene	4000* ppm
541-73-1	1,3-dichlorobenzene	400 ppm
106-46-7	1,4-dichlorobenzene	1,000 ppm
121-14-2	2,4-dinitrotoluene	200 mg/m³
606-20-2	2,6-dinitrotoluene	200 mg/m³
91-58-7	2-Chloronaphthalene	410 mg/m³
91-57-6	2-methylnaphthalene	320 mg/m³
88-74-4	o-nitroaniline	410 mg/m³
99-09-2	m-nitroaniline	110 mg/m³
101-55-3	4-Bromodiphenyl ether	21 mg/m³
106-47-8	4-chloroaniline	100 mg/m³
7005-72-3	4-Chlorophenyl-phenyl ether	210 mg/m³
100-01-6	p-nitroaniline	300 mg/m³
83-32-9	acenaphthene	240 mg/m³
208-96-8	acenaphthylene	660 mg/m³
120-12-7	anthracene	3,200 mg/m³
56-55-3	benz[a]anthracene	700 mg/m³
50-32-8	benzo[a]pyrene	700 mg/m³
205-99-2	benz[e]acephenanthrylene	7.9 mg/m³
191-24-2	Benzo(g,h,i)perylene	2,000 mg/m³
100-51-6	Benzyl alcohol	740 ppm
111-91-1	bis(2-chloroethoxy)methane	2.7 ppm

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111-44-4	bis(2-chloroethyl) ether	250 ppm
108-60-1	bis(2-chloro-1-methylethyl) ether	22 ppm
117-81-7	bis(2-ethylhexyl) phthalate	6,100 mg/m³
85-68-7	BBP	460 mg/m³
218-01-9	chrysene	69 mg/m³
84-74-2	dibutyl phthalate	9300* mg/m³
117-84-0	Di-n-octyl Phthalate	11000* mg/m³

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.

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/m³, 50 ppm BEI
71-43-2 benzene	
PEL	Short-term value: 15* mg/m³, 5* ppm Long-term value: 3* mg/m³, 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/m³, 2.5 ppm Long-term value: 1.6 mg/m³, 0.5 ppm Skin; BEI
106-46-7 1,4-dichlorobenzene	
PEL	Long-term value: 450 mg/m³, 75 ppm
REL	See Pocket Guide App. A
TLV	Long-term value: 60 mg/m³, 10 ppm
56-55-3 benz[a]anthracene	
TLV	L; BEIp

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50-32-8 benzo[a]pyrene	
PEL	Long-term value: 0.2 mg/m³ see Coal tar pitch volatiles
REL	Long-term value: 0.1 mg/m³ Coal tar pitch volatile; Pocket Guide Apps. A+C
TLV	L; BEIp
205-99-2 benz[e]acephenanthrylene	
TLV	L; BEIp
111-44-4 bis(2-chloroethyl) ether	
PEL	Ceiling limit value: 90 mg/m³, 15 ppm Skin
REL	Short-term value: 60 mg/m³, 10 ppm Long-term value: 30 mg/m³, 5 ppm Skin; See Pocket Guide App. A
TLV	Short-term value: 58 mg/m³, 10 ppm Long-term value: 29 mg/m³, 5 ppm Skin
117-81-7 bis(2-ethylhexyl) phthalate	
PEL	Long-term value: 5 mg/m³
REL	Short-term value: 10 mg/m³ Long-term value: 5 mg/m³ See Pocket Guide App. A
TLV	Long-term value: 5 mg/m³
218-01-9 chrysene	
PEL	Long-term value: 0.2 mg/m³ see Coal Tar Pitch Volatiles
REL	Long-term value: 0.1* mg/m³ *Cyclohexane-extrble.fraction;PocketGuide Apps.A+C
TLV	L, BEIp
84-74-2 dibutyl phthalate	
PEL	Long-term value: 5 mg/m³
REL	Long-term value: 5 mg/m³
TLV	Long-term value: 5 mg/m³
118-74-1 hexachlorobenzene	
TLV	Long-term value: 0.002 mg/m³ Skin
87-68-3 hexachlorobuta-1,3-diene	
REL	Long-term value: 0.24 mg/m³, 0.02 ppm Skin; See Pocket Guide App. A
TLV	Long-term value: 0.21 mg/m³, 0.02 ppm Skin
67-72-1 hexachloroethane	
PEL	Long-term value: 10 mg/m³, 1 ppm Skin
REL	Long-term value: 10 mg/m³, 1 ppm Skin; See Pocket Guide Apps. A and C
TLV	Long-term value: 9.7 mg/m³, 1 ppm Skin
78-59-1 3,5,5-trimethylcyclohex-2-enone	
PEL	Long-term value: 140 mg/m³, 25 ppm
REL	Long-term value: 23 mg/m³, 4 ppm
TLV	Ceiling limit value: 28 mg/m³, 5 ppm
91-20-3 naphthalene	
PEL	Long-term value: 50 mg/m³, 10 ppm
REL	Short-term value: 75 mg/m³, 15 ppm Long-term value: 50 mg/m³, 10 ppm
TLV	Long-term value: 52 mg/m³, 10 ppm Skin; BEI

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98-95-3 nitrobenzene	
PEL	Long-term value: 5 mg/m³, 1 ppm Skin
REL	Long-term value: 5 mg/m³, 1 ppm Skin
TLV	Long-term value: 5 mg/m³, 1 ppm Skin; BEIm
120-82-1 1,2,4-trichlorobenzene	
REL	Ceiling limit value: 40 mg/m³, 5 ppm
TLV	Ceiling limit value: 37 mg/m³, 5 ppm

· **Ingredients with biological limit values:**

75-09-2 dichloromethane	
BEI	0.3 mg/L Medium: urine Time: end of shift Parameter: Dichloromethane (semi-quantitative)
71-43-2 benzene	
BEI	25 µg/g creatinine Medium: urine Time: end of shift Parameter Parameter: S-Phenylmercapturic acid (background 500 µg/g creatinine Medium: urine Time: end of shift Parameter: t,t-Muconic acid (background)
56-55-3 benz[a]anthracene	
BEI	- Medium: urine Time: end of shift at end of workweek Parameter: 1-Hydroxypyrene with hydrolysis (nonquantitative)
50-32-8 benzo[a]pyrene	
BEI	- Medium: urine Time: end of shift at end of workweek Parameter: 1-Hydroxypyrene with hydrolysis (nonquantitative)
205-99-2 benz[e]acephenanthrylene	
BEI	- Medium: urine Time: end of shift at end of workweek Parameter: 1-Hydroxypyrene with hydrolysis (nonquantitative)
218-01-9 chrysene	
BEI	- Medium: urine Time: end of shift at end of workweek Parameter: 1-Hydroxypyrene with hydrolysis (nonquantitative)
98-95-3 nitrobenzene	
BEI	5 mg/g creatinine Medium: urine Time: end of shift at end of workweek Parameter: Total p-nitrophenol (nonspecific) 1.5 % of hemoglobin Medium: blood Time: end of shift Parameter: Methemoglobin (background, nonspecific, 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.

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Avoid contact with the eyes.
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.

· **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:	40 °C (104 °F)
· **Flash point:**	< 0 °C (<32 °F)
· **Flammability (solid, gaseous):**	Not applicable.
· **Ignition temperature:**	555 °C (1,031 °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:	1.2 Vol %
Upper:	22 Vol %
· **Vapor pressure at 20 °C (68 °F):**	453 hPa (339.8 mm Hg)
· **Density at 20 °C (68 °F)**	1.105 g/cm³ (9.22123 lbs/gal)
· **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.

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· **Solvent content:**	
Organic solvents:	91.2 %
VOC content:	46.10 %
Solids content:	5.0 %
· **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:**		
75-09-2 dichloromethane		
Oral	LD50	1,600 mg/kg (rat)
Inhalative	LC50/4 h	88 mg/l (rat)
71-43-2 benzene		
Oral	LD50	4,894 mg/kg (rat)
Dermal	LD50	48 mg/kg (mouse)
Inhalative	LC50/4 h	9,980 mg/l (mouse)
106-46-7 1,4-dichlorobenzene		
Oral	LD50	500 mg/kg (rat)
121-14-2 2,4-dinitrotoluene		
Oral	LD50	268 mg/kg (rat)
606-20-2 2,6-dinitrotoluene		
Oral	LD50	177 mg/kg (rat)
106-47-8 4-chloroaniline		
Oral	LD50	310 mg/kg (rat)
Dermal	LD50	3,200 mg/kg (rat)
111-44-4 bis(2-chloroethyl) ether		
Oral	LD50	75 mg/kg (rat)
Dermal	LD50	90 mg/kg (rabbit)
Inhalative	LC50/4 h	0.33 mg/l (rat)
85-68-7 BBP		
Oral	LD50	2,330 mg/kg (rat)
77-47-4 hexachlorocyclopentadiene		
Oral	LD50	1,300 mg/kg (rat)
Dermal	LD50	430 mg/kg (rabbit)
91-20-3 naphthalene		
Oral	LD50	490 mg/kg (rat)
Dermal	LD50	5,000 mg/kg (rat)
120-82-1 1,2,4-trichlorobenzene		
Oral	LD50	756 mg/kg (rat)
95-50-1 1,2-dichlorobenzene		
Oral	LD50	500 mg/kg (rat)

· **Primary irritant effect:**
· **on the skin:** Irritant to skin and mucous membranes.
· **on the eye:** Irritating effect.
· **Sensitization:** Sensitization possible through skin contact.

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· **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:
Harmful
Irritant
Product is suspected to cause damage to fertility.
Product is suspected to cause birth defects.
The product can cause inheritable damage.

· **Carcinogenic categories**

· **IARC (International Agency for Research on Cancer)**		
75-09-2	dichloromethane	2A
71-43-2	benzene	1
541-73-1	1,3-dichlorobenzene	3
106-46-7	1,4-dichlorobenzene	2B
121-14-2	2,4-dinitrotoluene	2B
606-20-2	2,6-dinitrotoluene	2B
106-47-8	4-chloroaniline	2B
83-32-9	acenaphthene	3
120-12-7	anthracene	3
56-55-3	benz[a]anthracene	2B
50-32-8	benzo[a]pyrene	1
205-99-2	benz[e]acephenanthrylene	2B
191-24-2	Benzo(g,h,i)perylene	3
207-08-9	benzo[k]fluoranthene	2B
111-44-4	bis(2-chloroethyl) ether	3
108-60-1	bis(2-chloro-1-methylethyl) ether	3
117-81-7	bis(2-ethylhexyl) phthalate	2B
85-68-7	BBP	3
218-01-9	chrysene	2B
53-70-3	dibenz[a,h]anthracene	2A
206-44-0	fluoranthene	3
86-73-7	fluorene	3
118-74-1	hexachlorobenzene	2B
87-68-3	hexachlorobuta-1,3-diene	3
67-72-1	hexachloroethane	2B
193-39-5	indeno[1,2,3-cd]pyrene	2B
621-64-7	nitrosodipropylamine	2B
86-30-6	nitrosodiphenylamine	3
91-20-3	naphthalene	2B
98-95-3	nitrobenzene	2B

· **NTP (National Toxicology Program)**		
75-09-2	dichloromethane	R
71-43-2	benzene	K
106-46-7	1,4-dichlorobenzene	R
120-12-7	anthracene	R
56-55-3	benz[a]anthracene	R
50-32-8	benzo[a]pyrene	R
205-99-2	benz[e]acephenanthrylene	R
207-08-9	benzo[k]fluoranthene	R
117-81-7	bis(2-ethylhexyl) phthalate	R
218-01-9	chrysene	R
53-70-3	dibenz[a,h]anthracene	R
206-44-0	fluoranthene	R
86-73-7	fluorene	R
118-74-1	hexachlorobenzene	R
67-72-1	hexachloroethane	R
193-39-5	indeno[1,2,3-cd]pyrene	R
621-64-7	nitrosodipropylamine	R

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91-20-3	naphthalene	R
98-95-3	nitrobenzene	R
85-01-8	phenanthrene, pure	R
129-00-0	pyrene	R

· **OSHA-Ca (Occupational Safety & Health Administration)**	
75-09-2	dichloromethane
71-43-2	benzene

12 Ecological information

· **Toxicity**
· **Aquatic toxicity:** No further relevant information available.
· **Persistence and degradability** No further relevant information available.
· **Behavior in environmental systems:**
· **Bioaccumulative potential** No further relevant information available.
· **Mobility in soil** No further relevant information available.
· **Additional ecological information:**
· **General notes:**
Water hazard class 3 (Self-assessment): extremely hazardous for water
Do not allow product to reach ground water, water course or sewage system, even in small quantities.
Danger to drinking water if even extremely small quantities leak into the ground.
· **Results of PBT and vPvB assessment**

· **PBT:**	
120-12-7	anthracene
87-68-3	hexachlorobuta-1,3-diene
120-82-1	1,2,4-trichlorobenzene

· **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**	UN1992
· **UN proper shipping name**	
· **DOT**	Flammable liquids, toxic, n.o.s. (Benzene, Dichloromethane)
· **ADR**	1992 Flammable liquids, toxic, n.o.s. (Benzene, Dichloromethane), ENVIRONMENTALLY HAZARDOUS
· **IMDG**	FLAMMABLE LIQUID, TOXIC, N.O.S. (BENZENE, DICHLOROMETHANE), MARINE POLLUTANT
· **IATA**	FLAMMABLE LIQUID, TOXIC, N.O.S. (BENZENE, DICHLOROMETHANE)
· **Transport hazard class(es)**	
· **DOT**	

· **Class**	3 Flammable liquids

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· **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:**	Product contains environmentally hazardous substances: benzo[a]pyrene
· **Marine pollutant:**	Symbol (fish and tree)
· **Special marking (ADR):**	Symbol (fish and tree)
· **Special precautions for user**	Warning: Flammable liquids
· **Danger code (Kemler):**	336
· **EMS Number:**	F-E,S-D
· **Segregation groups**	Liquid halogenated hydrocarbons
· **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 1992 FLAMMABLE LIQUIDS, TOXIC, N.O.S. (BENZENE, DICHLOROMETHANE), 3 (6.1), II, ENVIRONMENTALLY HAZARDOUS

15 Regulatory information

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

· **Section 313 (Specific toxic chemical listings):**	
75-09-2	dichloromethane
71-43-2	benzene
541-73-1	1,3-dichlorobenzene
106-46-7	1,4-dichlorobenzene

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121-14-2	2,4-dinitrotoluene
606-20-2	2,6-dinitrotoluene
106-47-8	4-chloroaniline
100-01-6	p-nitroaniline
120-12-7	anthracene
56-55-3	benz[a]anthracene
50-32-8	benzo[a]pyrene
205-99-2	benz[e]acephenanthrylene
191-24-2	Benzo(g,h,i)perylene
207-08-9	benzo[k]fluoranthene
111-91-1	bis(2-chloroethoxy)methane
111-44-4	bis(2-chloroethyl) ether
108-60-1	bis(2-chloro-1-methylethyl) ether
117-81-7	bis(2-ethylhexyl) phthalate
218-01-9	chrysene
84-74-2	dibutyl phthalate
53-70-3	dibenz[a,h]anthracene
132-64-9	dibenzofuran
131-11-3	dimethyl phthalate
206-44-0	fluoranthene
118-74-1	hexachlorobenzene
87-68-3	hexachlorobuta-1,3-diene
77-47-4	hexachlorocyclopentadiene
67-72-1	hexachloroethane
193-39-5	indeno[1,2,3-cd]pyrene
621-64-7	nitrosodipropylamine

· **TSCA (Toxic Substances Control Act):**	
75-09-2	dichloromethane
71-43-2	benzene
541-73-1	1,3-dichlorobenzene
106-46-7	1,4-dichlorobenzene
121-14-2	2,4-dinitrotoluene
606-20-2	2,6-dinitrotoluene
91-58-7	2-Chloronaphthalene
91-57-6	2-methylnaphthalene
88-74-4	o-nitroaniline
99-09-2	m-nitroaniline
101-55-3	4-Bromodiphenyl ether
106-47-8	4-chloroaniline
7005-72-3	4-Chlorophenyl-phenyl ether
100-01-6	p-nitroaniline
83-32-9	acenaphthene
208-96-8	acenaphthylene
120-12-7	anthracene
56-55-3	benz[a]anthracene
50-32-8	benzo[a]pyrene
100-51-6	Benzyl alcohol
111-91-1	bis(2-chloroethoxy)methane
111-44-4	bis(2-chloroethyl) ether
108-60-1	bis(2-chloro-1-methylethyl) ether
117-81-7	bis(2-ethylhexyl) phthalate
85-68-7	BBP
218-01-9	chrysene
84-74-2	dibutyl phthalate
117-84-0	Di-n-octyl Phthalate

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53-70-3	dibenz[a,h]anthracene
132-64-9	dibenzofuran

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

101-55-3	4-Bromodiphenyl ether
56-55-3	benz[a]anthracene
205-99-2	benz[e]acephenanthrylene
191-24-2	Benzo(g,h,i)perylene
207-08-9	benzo[k]fluoranthene
218-01-9	chrysene
53-70-3	dibenz[a,h]anthracene
87-68-3	hexachlorobuta-1,3-diene
621-64-7	nitrosodipropylamine

· **Proposition 65**

· **Chemicals known to cause cancer:**

75-09-2	dichloromethane
71-43-2	benzene
106-46-7	1,4-dichlorobenzene
121-14-2	2,4-dinitrotoluene
606-20-2	2,6-dinitrotoluene
106-47-8	4-chloroaniline
56-55-3	benz[a]anthracene
50-32-8	benzo[a]pyrene
205-99-2	benz[e]acephenanthrylene
207-08-9	benzo[k]fluoranthene
111-44-4	bis(2-chloroethyl) ether
108-60-1	bis(2-chloro-1-methylethyl) ether
117-81-7	bis(2-ethylhexyl) phthalate
218-01-9	chrysene
53-70-3	dibenz[a,h]anthracene
118-74-1	hexachlorobenzene
87-68-3	hexachlorobuta-1,3-diene
67-72-1	hexachloroethane
193-39-5	indeno[1,2,3-cd]pyrene
621-64-7	nitrosodipropylamine
86-30-6	nitrosodiphenylamine
91-20-3	naphthalene
98-95-3	nitrobenzene

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

84-74-2	dibutyl phthalate

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

71-43-2	benzene
121-14-2	2,4-dinitrotoluene
606-20-2	2,6-dinitrotoluene
117-81-7	bis(2-ethylhexyl) phthalate
84-74-2	dibutyl phthalate
98-95-3	nitrobenzene

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

71-43-2	benzene
117-81-7	bis(2-ethylhexyl) phthalate
85-68-7	BBP
84-74-2	dibutyl phthalate
118-74-1	hexachlorobenzene

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**

75-09-2	dichloromethane	L

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71-43-2	benzene	A, K/L
541-73-1	1,3-dichlorobenzene	D
91-57-6	2-methylnaphthalene	I
101-55-3	4-Bromodiphenyl ether	D
83-32-9	acenaphthene	A (oral)
208-96-8	acenaphthylene	D
120-12-7	anthracene	D
56-55-3	benz[a]anthracene	B2
50-32-8	benzo[a]pyrene	CaH
205-99-2	benz[e]acephenanthrylene	B2
191-24-2	Benzo(g,h,i)perylene	D
207-08-9	benzo[k]fluoranthene	B2
111-91-1	bis(2-chloroethoxy)methane	D
111-44-4	bis(2-chloroethyl) ether	B2
117-81-7	bis(2-ethylhexyl) phthalate	B2
85-68-7	BBP	C
218-01-9	chrysene	B2
84-74-2	dibutyl phthalate	D
53-70-3	dibenz[a,h]anthracene	B2
132-64-9	dibenzofuran	D
84-66-2	diethyl phthalate	D
131-11-3	dimethyl phthalate	D
206-44-0	fluoranthene	D
86-73-7	fluorene	D
118-74-1	hexachlorobenzene	B2
87-68-3	hexachlorobuta-1,3-diene	C
77-47-4	hexachlorocyclopentadiene	E, NL
67-72-1	hexachloroethane	L
193-39-5	indeno[1,2,3-cd]pyrene	B2

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

75-09-2	dichloromethane	A3
71-43-2	benzene	A1
106-46-7	1,4-dichlorobenzene	A3
91-57-6	2-methylnaphthalene	A4
100-01-6	p-nitroaniline	A4
56-55-3	benz[a]anthracene	A2
50-32-8	benzo[a]pyrene	A2
205-99-2	benz[e]acephenanthrylene	A2
111-44-4	bis(2-chloroethyl) ether	A4
117-81-7	bis(2-ethylhexyl) phthalate	A3
218-01-9	chrysene	A3
84-66-2	diethyl phthalate	A4
118-74-1	hexachlorobenzene	A3
87-68-3	hexachlorobuta-1,3-diene	A3
77-47-4	hexachlorocyclopentadiene	A4
67-72-1	hexachloroethane	A3
78-59-1	3,5,5-trimethylcyclohex-2-enone	A3
91-20-3	naphthalene	A4
98-95-3	nitrobenzene	A3
95-50-1	1,2-dichlorobenzene	A4

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

75-09-2	dichloromethane
71-43-2	benzene
106-46-7	1,4-dichlorobenzene
121-14-2	2,4-dinitrotoluene

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50-32-8	benzo[a]pyrene
111-44-4	bis(2-chloroethyl) ether
117-81-7	bis(2-ethylhexyl) phthalate
218-01-9	chrysene
87-68-3	hexachlorobuta-1,3-diene
67-72-1	hexachloroethane

· **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:**
benzene
dichloromethane
nitrobenzene
bis(2-chloroethyl) ether
4-Bromodiphenyl ether
4-chloroaniline
benzo[a]pyrene
· **Hazard statements**
H225 Highly flammable liquid and vapor.
H302+H332 Harmful if swallowed or if inhaled.
H310 Fatal in contact with skin.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H317 May cause an allergic skin reaction.
H340 May cause genetic defects.
H350 May cause cancer.
H360 May damage fertility or the unborn child.
H372 Causes damage to organs through prolonged or repeated exposure.
H304 May be fatal if swallowed and enters airways.
· **Precautionary statements**
If medical advice is needed, have product container or label at hand.
Keep out of reach of children.
Read label before use.
If swallowed: Immediately call a poison center/doctor.
Specific treatment (see on this label).
If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Rinse mouth.
Take off immediately all contaminated clothing and wash it before reuse.
Store locked up.
Dispose of contents/container in accordance with local/regional/national/international regulations.

· **National regulations:**
· **Additional classification according to Decree on Hazardous Materials:** Carcinogenic hazardous material group III (dangerous).

· **Information about limitation of use:**
Workers are not allowed to be exposed to the hazardous carcinogenic materials contained in this preparation. Exceptions can be made by the authorities in certain cases.
· **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** 12/06/2018 / -
· **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)

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IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
ACGIH: American Conference of Governmental Industrial Hygienists
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
VOC: Volatile Organic Compounds (USA, EU)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
BEI: Biological Exposure Limit
Flam. Liq. 2: Flammable liquids – Category 2
Acute Tox. 4: Acute toxicity – Category 4
Acute Tox. 2: Acute toxicity – Category 2
Skin Irrit. 2: Skin corrosion/irritation – Category 2
Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A
Skin Sens. 1: Skin sensitisation – Category 1
Muta. 1B: Germ cell mutagenicity – Category 1B
Carc. 1A: Carcinogenicity – Category 1A
Repr. 1A: Reproductive toxicity – Category 1A
STOT RE 1: Specific target organ toxicity (repeated exposure) – Category 1
Asp. Tox. 1: Aspiration hazard – Category 1