

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

- **Product identifier**
- **Trade name:** EPH Fractionation Check Solution
- **Part number:** SWA-330-1
- **Application of the substance / the mixture** Laboratory chemicals
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
ULTRA Scientific, inc.
250 Smith Street
North Kingstown, RI 02852
USA
- **Information department:**
Telephone: (401) 294-9400
Fax: (401) 295-2300
E-mail: regulatory@ultrasci.com
- **Emergency telephone number:**
US: (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.



GHS08 Health hazard

Repr. 2 H361 Suspected of damaging fertility or the unborn child.

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

Asp. Tox. 1 H304 May be fatal if swallowed and enters airways.



GHS07

Skin Irrit. 2 H315 Causes skin irritation.

STOT SE 3 H336 May cause drowsiness or dizziness.

- **Label elements**

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

- **Hazard pictograms**



GHS02



GHS07



GHS08

- **Signal word** Danger

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

n-hexane

· **Hazard statements**

Highly flammable liquid and vapor.

Causes skin irritation.

Suspected of damaging fertility or the unborn child.

May cause drowsiness or dizziness.

May cause damage to organs through prolonged or repeated exposure.

May be fatal if swallowed and enters airways.

· **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.

Wear protective gloves/protective clothing/eye protection/face protection.

Ground/bond container and receiving equipment.

Use only non-sparking tools.

Take precautionary measures against static discharge.

Wash thoroughly after handling.

Use only outdoors or in a well-ventilated area.

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

IF SWALLOWED: Immediately call a POISON CENTER/ doctor.

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

Specific treatment (see on this label).

IF INHALED: Remove person to fresh air and keep comfortable for breathing.

Call a POISON CENTER/doctor if you feel unwell.

IF exposed or concerned: Get medical advice/attention.

If skin irritation occurs: Get medical advice/attention.

Get medical advice/attention if you feel unwell.

Do NOT induce vomiting.

In case of fire: Use for extinction: CO₂, powder or water spray.

Take off contaminated clothing and wash it before reuse.

Store locked up.

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

Store in a well-ventilated place. Keep cool.

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

· **Classification system:**

· **NFPA ratings (scale 0 - 4)**



Health = 2

Fire = 3

Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**



Health = *2

Fire = 3

Reactivity = 0

· **Other hazards**

· **Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

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· **vPvB:** Not applicable.

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3 Composition/information on ingredients

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

· **Dangerous components:**

110-54-3	n-hexane	99.916%
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4 First-aid measures

- **Description of first aid measures**
- **General information:**
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
- **After inhalation:** 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.
- **After swallowing:** If symptoms persist consult doctor.
- **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** No further relevant information available.
- **Advice for firefighters**
- **Protective equipment:** No special measures required.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
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.

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· Protective Action Criteria for Chemicals

· PAC-1:

110-54-3	n-hexane	260 ppm
91-20-3	naphthalene	15 ppm
129-00-0	pyrene	0.15 mg/m3
86-73-7	fluorene	6.6 mg/m3
120-12-7	anthracene	48 mg/m3
85-01-8	phenanthrene	5.4 mg/m3
206-44-0	fluoranthene	8.2 mg/m3
83-32-9	acenaphthene	3.6 mg/m3
208-96-8	acenaphthylene	10 mg/m3
53-70-3	dibenz[a,h]anthracene	0.093 mg/m3
193-39-5	indeno[1,2,3-cd]pyrene	1.2 mg/m3
218-01-9	chrysene	0.6 mg/m3
205-99-2	benz[e]acephenanthrylene	0.12 mg/m3
50-32-8	benzo[a]pyrene	0.6 mg/m3
56-55-3	benz[a]anthracene	0.6 mg/m3
191-24-2	benzo[ghi]perylene	30 mg/m3
124-18-5	decane	6.6 ppm
112-40-3	dodecane	1.7 ppm
544-76-3	Cetane	35 mg/m3
111-65-9	octane	230 ppm

· PAC-2:

110-54-3	n-hexane	2900* ppm
91-20-3	naphthalene	83 ppm
129-00-0	pyrene	1.7 mg/m3
86-73-7	fluorene	72 mg/m3
120-12-7	anthracene	530 mg/m3
85-01-8	phenanthrene	59 mg/m3
206-44-0	fluoranthene	90 mg/m3
83-32-9	acenaphthene	40 mg/m3
208-96-8	acenaphthylene	110 mg/m3
53-70-3	dibenz[a,h]anthracene	1 mg/m3
193-39-5	indeno[1,2,3-cd]pyrene	13 mg/m3
218-01-9	chrysene	12 mg/m3
205-99-2	benz[e]acephenanthrylene	1.3 mg/m3
50-32-8	benzo[a]pyrene	120 mg/m3
56-55-3	benz[a]anthracene	120 mg/m3
191-24-2	benzo[ghi]perylene	330 mg/m3
124-18-5	decane	73 ppm
112-40-3	dodecane	18 ppm
544-76-3	Cetane	380 mg/m3
111-65-9	octane	385 ppm

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· PAC-3:		
110-54-3	n-hexane	8600** ppm
91-20-3	naphthalene	500 ppm
129-00-0	pyrene	110 mg/m3
86-73-7	fluorene	430 mg/m3
120-12-7	anthracene	3,200 mg/m3
85-01-8	phenanthrene	360 mg/m3
206-44-0	fluoranthene	400 mg/m3
83-32-9	acenaphthene	240 mg/m3
208-96-8	acenaphthylene	660 mg/m3
53-70-3	dibenz[a,h]anthracene	2.9 mg/m3
193-39-5	indeno[1,2,3-cd]pyrene	79 mg/m3
218-01-9	chrysene	69 mg/m3
205-99-2	benz[e]acephenanthrylene	7.9 mg/m3
50-32-8	benzo[a]pyrene	700 mg/m3
56-55-3	benz[a]anthracene	700 mg/m3
191-24-2	benzo[ghi]perylene	2,000 mg/m3
124-18-5	decane	440 ppm
112-40-3	dodecane	110 ppm
544-76-3	Cetane	2,800 mg/m3
111-65-9	octane	5000** ppm

7 Handling and storage

- **Handling:**
- **Precautions for safe handling** No special precautions are necessary if used correctly.
- **Information about protection against explosions and fires:**
Keep ignition sources away - Do not smoke.
Protect against electrostatic charges.
- **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.

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· **Control parameters**

· **Components with limit values that require monitoring at the workplace:**

110-54-3 n-hexane

PEL	Long-term value: 1800 mg/m ³ , 500 ppm
REL	Long-term value: 180 mg/m ³ , 50 ppm
TLV	Long-term value: 176 mg/m ³ , 50 ppm Skin; BEI

· **Ingredients with biological limit values:**

110-54-3 n-hexane

BEI	0.4 mg/L Medium: urine Time: end of shift at end of workweek Parameter: 2.5-Hexanedione without hydrolysis
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· **Additional information:** The lists that were valid during the creation were used as basis.

· **Exposure controls**

· **Personal protective equipment:**

· **General protective and hygienic measures:**

- Keep away from foodstuffs, beverages and feed.
- Immediately remove all soiled and contaminated clothing.
- Wash hands before breaks and at the end of work.
- Store protective clothing separately.
- Avoid contact with the skin.
- 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.

· **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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· **Eye protection:**



Tightly sealed goggles

9 Physical and chemical properties

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

· **General Information**

· **Appearance:**

· Form:	Fluid
· Color:	Colorless
· Odor:	Characteristic
· Odor threshold:	Not determined.

· **pH-value:** Not determined.

· **Change in condition**

· Melting point/Melting range:	-95 °C (-139 °F)
· Boiling point/Boiling range:	69 °C (156 °F)

· **Flash point:** -22 °C (-8 °F)

· **Flammability (solid, gaseous):** Not applicable.

· **Ignition temperature:** 240 °C (464 °F)

· **Decomposition temperature:** Not determined.

· **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:	7.4 Vol %

· **Vapor pressure at 20 °C (68 °F):** 110 hPa (83 mm Hg)

· **Density at 20 °C (68 °F):** 0.7 g/cm³ (5.842 lbs/gal)

· **Relative density** Not determined.

· **Vapor density** Not determined.

· **Evaporation rate** Not determined.

· **Solubility in / Miscibility with**

· **Water at 20 °C (68 °F):** 0.1 g/l

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

· **Viscosity:**

· Dynamic:	Not determined.
· Kinematic:	Not determined.

· **Solvent content:**

· **Organic solvents:** 99.9 %

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VOC content:	99.9 % 999.2 g/l / 8.34 lb/gl
Solids content:	0.1 %
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:		
110-54-3 n-hexane		
Oral	LD50	5000 mg/kg (rat)
Dermal	LD50	3000 mg/kg (rabbit)

- **Primary irritant effect:**
- **on the skin:** Irritant to skin and mucous membranes.
- **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:
Irritant

- **Carcinogenic categories**

IARC (International Agency for Research on Cancer)		
91-20-3	naphthalene	2B
129-00-0	pyrene	3
86-73-7	fluorene	3
120-12-7	anthracene	3
85-01-8	phenanthrene	3
206-44-0	fluoranthene	3
83-32-9	acenaphthene	3
53-70-3	dibenz[a,h]anthracene	2A
193-39-5	indeno[1,2,3-cd]pyrene	2B
218-01-9	chrysene	2B
207-08-9	benzo[k]fluoranthene	2B
205-99-2	benz[e]acephenanthrylene	2B
50-32-8	benzo[a]pyrene	1

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56-55-3	benz[a]anthracene	2B
191-24-2	benzo[ghi]perylene	3
· NTP (National Toxicology Program)		
91-20-3	naphthalene	R
129-00-0	pyrene	R
86-73-7	fluorene	R
120-12-7	anthracene	R
85-01-8	phenanthrene	R
206-44-0	fluoranthene	R
53-70-3	dibenz[a,h]anthracene	R
193-39-5	indeno[1,2,3-cd]pyrene	R
218-01-9	chrysene	R
207-08-9	benzo[k]fluoranthene	R
205-99-2	benz[e]acephenanthrylene	R
50-32-8	benzo[a]pyrene	R
56-55-3	benz[a]anthracene	R

· OSHA-Ca (Occupational Safety & Health Administration)

None of the ingredients is listed.

12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Behavior in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:**
Water hazard class 2 (Self-assessment): hazardous for water
Do not allow product to reach ground water, water course or sewage system.
Danger to drinking water if even small quantities leak into the ground.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:**
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.





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- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.

14 Transport information

· UN-Number · DOT, IMDG, IATA	UN1993
· UN proper shipping name · DOT · IMDG · IATA	Flammable liquids, n.o.s. (Hexanes) FLAMMABLE LIQUID, N.O.S. (HEXANES, dibenz[a,h]anthracene), MARINE POLLUTANT FLAMMABLE LIQUID, N.O.S. (HEXANES)
· Transport hazard class(es) · DOT	
	
· Class · Label	3 Flammable liquids 3
· IMDG	
 	
· Class · Label	3 Flammable liquids 3
· IATA	
	
· Class · Label	3 Flammable liquids 3
· Packing group · DOT, IMDG, IATA	II
· Environmental hazards: · Marine pollutant:	Product contains environmentally hazardous substances: naphthalene, n-hexane Symbol (fish and tree)
· Special precautions for user · Danger code (Kemler): · EMS Number: · Stowage Category	Warning: Flammable liquids 33 F-E, <u>S</u> -E B
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.

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· Transport/Additional information:

· DOT

· Quantity limitations

On passenger aircraft/rail: 5 L
On cargo aircraft only: 60 L

· 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 1993 FLAMMABLE LIQUIDS, N.O.S. (HEXANES), 3, II,
ENVIRONMENTALLY HAZARDOUS

15 Regulatory information

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

· Sara

· Section 355 (extremely hazardous substances):

129-00-0	pyrene
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· Section 313 (Specific toxic chemical listings):

110-54-3	n-hexane
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91-20-3	naphthalene
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120-12-7	anthracene
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85-01-8	phenanthrene
---------	--------------

206-44-0	fluoranthene
----------	--------------

53-70-3	dibenz[a,h]anthracene
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193-39-5	indeno[1,2,3-cd]pyrene
----------	------------------------

218-01-9	chrysene
----------	----------

207-08-9	benzo[k]fluoranthene
----------	----------------------

205-99-2	benz[e]acephenanthrylene
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50-32-8	benzo[a]pyrene
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56-55-3	benz[a]anthracene
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191-24-2	benzo[ghi]perylene
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· TSCA (Toxic Substances Control Act):

110-54-3	n-hexane
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629-94-7	heneicosane
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91-20-3	naphthalene
---------	-------------

129-00-0	pyrene
----------	--------

86-73-7	fluorene
---------	----------

120-12-7	anthracene
----------	------------

85-01-8	phenanthrene
---------	--------------

206-44-0	fluoranthene
----------	--------------

83-32-9	acenaphthene
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208-96-8	acenaphthylene
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53-70-3	dibenz[a,h]anthracene
193-39-5	indeno[1,2,3-cd]pyrene
218-01-9	chrysene
50-32-8	benzo[a]pyrene
56-55-3	benz[a]anthracene
124-18-5	decane
112-40-3	dodecane
544-76-3	Cetane
111-65-9	octane

· **Proposition 65**

· **Chemicals known to cause cancer:**

91-20-3	naphthalene
53-70-3	dibenz[a,h]anthracene
193-39-5	indeno[1,2,3-cd]pyrene
218-01-9	chrysene
207-08-9	benzo[k]fluoranthene
205-99-2	benz[e]acephenanthrylene
50-32-8	benzo[a]pyrene
56-55-3	benz[a]anthracene

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

None of the ingredients is listed.

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

None of the ingredients is listed.

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

None of the ingredients is listed.

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**

110-54-3	n-hexane	II
91-20-3	naphthalene	C, CBD
129-00-0	pyrene	D
86-73-7	fluorene	D
120-12-7	anthracene	D
85-01-8	phenanthrene	D
206-44-0	fluoranthene	D
83-32-9	acenaphthene	A (oral)
208-96-8	acenaphthylene	D
53-70-3	dibenz[a,h]anthracene	B2
193-39-5	indeno[1,2,3-cd]pyrene	B2
218-01-9	chrysene	B2
207-08-9	benzo[k]fluoranthene	B2
205-99-2	benz[e]acephenanthrylene	B2
50-32-8	benzo[a]pyrene	B2

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56-55-3	benz[a]anthracene	B2
191-24-2	benzo[ghi]perylene	D

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

91-20-3	naphthalene	A4
218-01-9	chrysene	A3
205-99-2	benz[e]acephenanthrylene	A2
50-32-8	benzo[a]pyrene	A2
56-55-3	benz[a]anthracene	A2

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

218-01-9	chrysene
50-32-8	benzo[a]pyrene

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

· **Hazard pictograms**



GHS02 GHS07 GHS08

· **Signal word** Danger

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

n-hexane

· **Hazard statements**

- Highly flammable liquid and vapor.
- Causes skin irritation.
- Suspected of damaging fertility or the unborn child.
- May cause drowsiness or dizziness.
- May cause damage to organs through prolonged or repeated exposure.
- May be fatal if swallowed and enters airways.

· **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.
- Wear protective gloves/protective clothing/eye protection/face protection.
- Ground/bond container and receiving equipment.
- Use only non-sparking tools.
- Take precautionary measures against static discharge.
- Wash thoroughly after handling.
- Use only outdoors or in a well-ventilated area.
- Obtain special instructions before use.
- Do not handle until all safety precautions have been read and understood.
- IF SWALLOWED: Immediately call a POISON CENTER/ doctor.
- If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
- Specific treatment (see on this label).
- IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- Call a POISON CENTER/doctor if you feel unwell.
- IF exposed or concerned: Get medical advice/attention.
- If skin irritation occurs: Get medical advice/attention.
- Get medical advice/attention if you feel unwell.
- Do NOT induce vomiting.
- In case of fire: Use for extinction: CO2, powder or water spray.

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- Take off contaminated clothing and wash it before reuse.
- Store locked up.
- Store in a well-ventilated place. Keep container tightly closed.
- Store in a well-ventilated place. Keep cool.
- Dispose of contents/container in accordance with local/regional/national/international regulations.
- **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Department issuing SDS:** Document Control / Regulatory
- **Contact:** regulatory@ultrasci.com
- **Date of preparation / last revision** 03/11/2017 / -
- **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)
 - 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
 - Skin Irrit. 2: Skin corrosion/irritation – Category 2
 - Repr. 2: Reproductive toxicity – Category 2
 - STOT SE 3: Specific target organ toxicity (single exposure) – Category 3
 - STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2
 - Asp. Tox. 1: Aspiration hazard – Category 1