Safety Data Sheet
acc. to OSHA HCS

Printing date 11/23/2023 Reviewed on 11/23/2023

*
1 Identification

· **Product identifier**

· **Trade name: Monophase S**

· **Article number:** 6013109
· **Application of the substance / the mixture** Laboratory chemicals

· **Details of the supplier of the safety data sheet**
· **Manufacturer/Supplier:**
Revvity Health Sciences B.V.
Rigaweg 22
9723 TH Groningen
The Netherlands
Phone: 0031 50 5445900
www.revvity.com

· **Information department:**
Quality Assurance, Environment, Safety & Health (QA/ESH)
SDS.Groningen@revvity.com
· **Emergency telephone number:**
+31 50 5445971
CHEMTREC (within U.S.A. and Canada) 1-800-424-9300
CHEMTREC (from outside U.S.A. and Canada) +1703-527-3887

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2 Hazard(s) identification

· **Classification of the substance or mixture**

GHS02 Flame

Flammable Liquids 3 — H226 Flammable liquid and vapor.

GHS05 Corrosion

Eye Damage 1 — H318 Causes serious eye damage.

GHS09 Environment

Aquatic Chronic 2 — H411 Toxic to aquatic life with long lasting effects.

GHS07

Skin Irritation 2 — H315 Causes skin irritation.
Specific Target Organ Toxicity - Single Exposure 3 — H335 May cause respiratory irritation.

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

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· **Hazard pictograms**

GHS02 GHS05 GHS07 GHS09

· **Signal word** Danger

· **Hazard-determining components of labeling:**
Alkylphenol Polyglycolether
1,2,4-trimethylbenzene
Sodium dioctyl sulphosuccinate
2,2'-iminodiethanol

· **Hazard statements**
H226 Flammable liquid and vapor.
H315 Causes skin irritation.
H318 Causes serious eye damage.
H335 May cause respiratory irritation.
H411 Toxic to aquatic life with long lasting effects.

· **Precautionary statements**
P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P233 Keep container tightly closed.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P303+P361+P353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

· **Other hazards**
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.

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3 Composition/information on ingredients

· **Chemical characterization: Mixtures**
· **Description:** Mixture: consisting of the following components.

· **Dangerous components:**		
95-63-6	1,2,4-trimethylbenzene Flammable Liquids 3, H226 Aquatic Chronic 2, H411 Acute Toxicity - Inhalation 4, H332; Skin Irritation 2, H315; Eye Irritation 2A, H319; Specific Target Organ Toxicity - Single Exposure 3, H335	60-80%
9016-45-9	Alkylphenol Polyglycolether Eye Damage 1, H318 Acute Toxicity - Oral 4, H302; Skin Irritation 2, H315	2.5-10%
9016-45-9	Alkylphenol Polyglycolether Skin Irritation 2, H315; Eye Irritation 2A, H319	2.5-10%
577-11-7	Sodium dioctyl sulphosuccinate Eye Damage 1, H318 Skin Irritation 2, H315	2.5-10%

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78-40-0	Triethyl phosphate Acute Toxicity - Oral 4, H302; Eye Irritation 2A, H319	2.5-10%
12645-31-7	Phosphoric acid, 2-ethylhexyl ester Skin Corrosion 1B, H314	0-2.5%
298-07-7	bis(2-ethylhexyl) hydrogen phosphate Skin Corrosion 1B, H314 Acute Toxicity - Oral 4, H302	0-2.5%
111-42-2	2,2'-iminodiethanol Carcinogenicity 2, H351; Toxic to Reproduction 2, H361; Specific Target Organ Toxicity - Repeated Exposure 2, H373 Eye Damage 1, H318 Acute Toxicity - Oral 4, H302; Skin Irritation 2, H315 Aquatic Chronic 3, H412	0-2.5%

· **Non-Dangerous components**		
7732-18-5	water, distilled, conductivity or of similar purity	0-2.5%
92-71-7	2,5-Diphenyloxazole (PPO)	0-2.5%
13280-61-0	1,4-Bis-(2-methylstyryl)-benzene (bis-MSB)	0-2.5%
	Polydimethylsiloxane (PDMS)	0-2.5%

· **Additional information:** For the wording of the listed hazard phrases refer to section 16.

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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:**
Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.
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:** If symptoms persist consult doctor.
· **Information for doctor:**
· **Most important symptoms and effects, both acute and delayed** Headache
· **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

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5 Fire-fighting measures

· **Extinguishing media**
· **Suitable extinguishing agents:**
Foam
Fire-extinguishing powder
Carbon dioxide
· **For safety reasons unsuitable extinguishing agents:** Water with full jet
· **Special hazards arising from the substance or mixture** No further relevant information available.

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· ***Advice for firefighters***
· ***Protective equipment:*** *Mouth respiratory protective device.*

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6 Accidental release measures

· ***Personal precautions, protective equipment and emergency procedures***
Wear protective equipment. Keep unprotected persons away.
· ***Environmental precautions:***
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 section 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:***		
95-63-6	*1,2,4-trimethylbenzene*	*140 ppm*
577-11-7	*Sodium dioctyl sulphosuccinate*	*5.7 mg/m³*
78-40-0	*Triethyl phosphate*	*23 mg/m³*
298-07-7	*bis(2-ethylhexyl) hydrogen phosphate*	*15 mg/m³*
111-42-2	*2,2'-iminodiethanol*	*3 mg/m³*
92-71-7	*2,5-Diphenyloxazole (PPO)*	*2.5 mg/m³*
13280-61-0	*1,4-Bis-(2-methylstyryl)-benzene (bis-MSB)*	*12 mg/m³*

· ***PAC-2:***		
95-63-6	*1,2,4-trimethylbenzene*	*360 ppm*
577-11-7	*Sodium dioctyl sulphosuccinate*	*63 mg/m³*
78-40-0	*Triethyl phosphate*	*250 mg/m³*
298-07-7	*bis(2-ethylhexyl) hydrogen phosphate*	*160 mg/m³*
111-42-2	*2,2'-iminodiethanol*	*28 mg/m³*
92-71-7	*2,5-Diphenyloxazole (PPO)*	*27 mg/m³*
13280-61-0	*1,4-Bis-(2-methylstyryl)-benzene (bis-MSB)*	*130 mg/m³*

· ***PAC-3:***		
95-63-6	*1,2,4-trimethylbenzene*	*480 ppm*
577-11-7	*Sodium dioctyl sulphosuccinate*	*380 mg/m³*
78-40-0	*Triethyl phosphate*	*320 mg/m³*
298-07-7	*bis(2-ethylhexyl) hydrogen phosphate*	*980 mg/m³*
111-42-2	*2,2'-iminodiethanol*	*130 mg/m³*
92-71-7	*2,5-Diphenyloxazole (PPO)*	*160 mg/m³*
13280-61-0	*1,4-Bis-(2-methylstyryl)-benzene (bis-MSB)*	*790 mg/m³*

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7 Handling and storage

· **Handling:**
· **Precautions for safe handling** Ensure good ventilation/exhaustion at the workplace.
· **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:** No special requirements.
· **Information about storage in one common storage facility:** Not required.
· **Further information about storage conditions:** Keep receptacle tightly sealed.
· **Specific end use(s)** No further relevant information available.

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8 Exposure controls/personal protection

· **Additional information about design of technical systems:** No further data; see section 7.

· **Control parameters**
· **Components with limit values that require monitoring at the workplace:**
The following constituent is the only constituent of the product which has a PEL, TLV or other recommended exposure limit.
At this time, the other constituents have no known exposure limits.

95-63-6 1,2,4-trimethylbenzene	
REL	125 mg/m³, 25 ppm
TLV	123 mg/m³, 25 ppm

· **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.
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

EN ISO 374-1/Type B
· **Material of gloves**
Nitrile rubber, NBR
Recommended thickness of the material: ≥ 0.2 mm
Breakthrough time: > 120 minutes
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.

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· **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

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9 Physical and chemical properties

· **Information on basic physical and chemical properties**	
· **General Information**	
· **Appearance:**	
Form:	Fluid
Color:	Colorless
· **Odor:**	Characteristic
· **Change in condition**	
Melting point/Melting range:	-44 °C (-47.2 °F)
Boiling point/Boiling range:	170 °C (338 °F)
· **Flash point:**	48 °C (118.4 °F)
· **Auto igniting:**	520 °C (968 °F)
· **Ignition temperature:**	Product is not selfigniting.
· **Danger of explosion:**	Product is not explosive. However, formation of explosive air/vapor mixtures are possible.
· **Explosion limits:**	
Lower:	1.1 Vol %
Upper:	7.0 Vol %
· **Density at 20 °C (68 °F):**	0.93 g/cm³ (7.76085 lbs/gal)
· **Solubility in / Miscibility with**	
Water:	Not miscible or difficult to mix.
· **Solvent content:**	
VOC content:	60-80 %
· **Other information**	No further relevant information available.

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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.

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· **Hazardous decomposition products:** Carbon monoxide and carbon dioxide

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11 Toxicological information

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

· LD/LC50 values that are relevant for classification:		
ATE (Acute Toxicity Estimate)		
Oral	LD50	4,491 mg/kg
Inhalative	LC50/4 h	24.8 mg/l (Rat)

95-63-6 1,2,4-trimethylbenzene		
Oral	LD50	3,400 mg/kg (Rat)
Dermal	LD50	3,160 mg/kg (Rabbit)
Inhalative	LC50/4 h	18 mg/l (Rat)

· **Primary irritant effect:**
· **on the skin:** Irritant to skin and mucous membranes.
· **on the eye:** Irritating effect.
· **Sensitization:** No sensitizing effects known.
· **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:
Harmful
Irritant

· **Carcinogenic categories**

· IARC (International Agency for Research on Cancer)		
111-42-2	2,2'-iminodiethanol	2B

· NTP (National Toxicology Program)
None of the ingredients is listed.

· OSHA-Ca (Occupational Safety & Health Administration)
None of the ingredients is listed.

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12 Ecological information

· **Toxicity**

· Aquatic toxicity:		
95-63-6 1,2,4-trimethylbenzene		
Inhalative	LC50	7.19-8.28 mg/l (Other fish)
	EC50/48h	6.14 mg/l (Daphnia magna)
9016-45-9 Alkylphenol Polyglycolether		
	chronic NOEC/ECx	>1 mg/l (Alge)
9016-45-9 Alkylphenol Polyglycolether		
	chronic NOEC/ECx	>1 mg/l (Alge)

· **Persistence and degradability** No further relevant information available.
· **Behavior in environmental systems:**
· **Bioaccumulative potential** No further relevant information available.

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· **Mobility in soil** No further relevant information available.
· **Ecotoxical effects:**
· **Remark:** Toxic for fish
· **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.
Also poisonous for fish and plankton in water bodies.
Toxic for aquatic organisms
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.
· **Other adverse effects** No further relevant information available.

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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.

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14 Transport information

· **UN-Number**	
· **ADR, IMDG, IATA**	1993
· **UN proper shipping name**	
· **IMDG, IATA**	FLAMMABLE LIQUID, N.O.S. (1,2,4-trimethylbenzene)
· **Transport hazard class(es)**	
· **ADR**	
· **Class**	3 (F1) Flammable liquids
· **Label**	3
· **IMDG, IATA**	
· **Class**	3 Flammable liquids
· **Label**	3
· **Packing group**	
· **ADR, IMDG, IATA**	III

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· ***Environmental hazards:***	
· ***Marine pollutant:***	*No*
· ***Special marking (ADR):***	*Symbol (fish and tree)*
· ***Special precautions for user***	*Warning: Flammable liquids*
· ***Hazard identification number (Kemler code):***	*30*
· ***EMS Number:***	*F-E,S-E*
· ***Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code***	*Not applicable.*
· ***UN "Model Regulation":***	*UN1993, FLAMMABLE LIQUID, N.O.S., 3, III*

*
15 Regulatory information

· ***Safety, health and environmental regulations/legislation specific for the substance or mixture***
No further relevant information available.

· ***Sara***

· ***Section 355 (extremely hazardous substances):***

None of the ingredient is listed.

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

95-63-6	*1,2,4-trimethylbenzene*
111-42-2	*2,2'-iminodiethanol*

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

95-63-6	*1,2,4-trimethylbenzene*	*ACTIVE*
577-11-7	*Sodium dioctyl sulphosuccinate*	*ACTIVE*
78-40-0	*Triethyl phosphate*	*ACTIVE*
12645-31-7	*Phosphoric acid, 2-ethylhexyl ester*	*ACTIVE*
298-07-7	*bis(2-ethylhexyl) hydrogen phosphate*	*ACTIVE*
111-42-2	*2,2'-iminodiethanol*	*ACTIVE*
7732-18-5	*water, distilled, conductivity or of similar purity*	*ACTIVE*
92-71-7	*2,5-Diphenyloxazole (PPO)*	*ACTIVE*

· ***Hazardous Air Pollutants***

111-42-2	*2,2'-iminodiethanol*

· ***Proposition 65***

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

111-42-2	*2,2'-iminodiethanol*

· ***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.

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· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**		
95-63-6	1,2,4-trimethylbenzene	II

· **TLV (Threshold Limit Value)**		
111-42-2	2,2'-iminodiethanol	A3

· **MAK (German Maximum Workplace Concentration)**		
111-42-2	2,2'-iminodiethanol	0.46 ppm; 2 mg/m³

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**
None of the ingredients is listed.

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

GHS02 GHS05 GHS07 GHS09

· **Signal word** Danger

· **Hazard-determining components of labeling:**
Alkylphenol Polyglycolether
1,2,4-trimethylbenzene
Sodium dioctyl sulphosuccinate
2,2'-iminodiethanol
· **Hazard statements**
H226 Flammable liquid and vapor.
H315 Causes skin irritation.
H318 Causes serious eye damage.
H335 May cause respiratory irritation.
H411 Toxic to aquatic life with long lasting effects.
· **Precautionary statements**
P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P233 Keep container tightly closed.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P303+P361+P353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

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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.

· **Relevant phrases**
H226 Flammable liquid and vapor.
H302 Harmful if swallowed.
H314 Causes severe skin burns and eye damage.

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H315 Causes skin irritation.
H318 Causes serious eye damage.
H319 Causes serious eye irritation.
H332 Harmful if inhaled.
H335 May cause respiratory irritation.
H351 Suspected of causing cancer.
H361 Suspected of damaging fertility or the unborn child.
H373 May cause damage to organs through prolonged or repeated exposure.
H411 Toxic to aquatic life with long lasting effects.
H412 Harmful to aquatic life with long lasting effects.

· **Department issuing SDS:** Quality Assurance, Environment, Safety & Health (QA/ESH)
· **Contact:** SDS.Groningen@revvity.com
· **Date of preparation / last revision** 11/23/2023
· **Abbreviations and acronyms:**
ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
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)
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
Flammable Liquids 3: Flammable liquids – Category 3
Acute Toxicity - Inhalation 4: Acute toxicity – Category 4
Skin Corrosion 1B: Skin corrosion/irritation – Category 1B
Skin Irritation 2: Skin corrosion/irritation – Category 2
Eye Damage 1: Serious eye damage/eye irritation – Category 1
Eye Irritation 2A: Serious eye damage/eye irritation – Category 2A
Carcinogenicity 2: Carcinogenicity – Category 2
Toxic to Reproduction 2: Reproductive toxicity – Category 2
Specific Target Organ Toxicity - Single Exposure 3: Specific target organ toxicity (single exposure) – Category 3
Specific Target Organ Toxicity - Repeated Exposure 2: Specific target organ toxicity (repeated exposure) – Category 2
Aquatic Chronic 2: Hazardous to the aquatic environment - long-term aquatic hazard – Category 2
Aquatic Chronic 3: Hazardous to the aquatic environment - long-term aquatic hazard – Category 3
· ***** Data compared to the previous version altered.**