

1 Identification

- **Product identifier**
- **Trade name:** Soluene-350
- **Article number:** 6003038
- **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

2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS02 Flame

Flammable Liquids 2

H225 Highly flammable liquid and vapor.



GHS08 Health hazard

Toxic to Reproduction 2

H361 Suspected of damaging fertility or the unborn child.

Specific Target Organ Toxicity - Single Exposure 2

H371 May cause damage to the central nervous system and the visual organs.

Specific Target Organ Toxicity - Repeated Exposure 2

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



GHS05 Corrosion

Skin Corrosion 1B

H314 Causes severe skin burns and eye damage.

Eye Damage 1

H318 Causes serious eye damage.



GHS09 Environment

Aquatic Chronic 1

H410 Very toxic to aquatic life with long lasting effects.

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GHS07

Acute Toxicity - Oral 4

H302 Harmful if swallowed.

Specific Target Organ Toxicity - Single Exposure 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

GHS05

GHS07

GHS08

GHS09

· **Signal word** Danger· **Hazard-determining components of labeling:**

Toluene

dodecyl(dimethyl)(tetradecyl)ammonium hydroxide

Methyltrioctylammonium chloride (Aliquat-336)

methanol

· **Hazard statements**

H225 Highly flammable liquid and vapor.

H302 Harmful if swallowed.

H314 Causes severe skin burns and eye damage.

H361 Suspected of damaging fertility or the unborn child.

H371 May cause damage to the central nervous system and the visual organs.

H336 May cause drowsiness or dizziness.

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

H410 Very toxic to aquatic life with long lasting effects.

· **Precautionary statements**

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

P260 Do not breathe dust/fume/gas/mist/vapors/spray.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P301+P312 If swallowed: Call a poison center/doctor if you feel unwell.

P303+P361+P353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

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.* **3 Composition/information on ingredients**· **Chemical characterization:** Mixtures· **Description:** Mixture: consisting of the following components.

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· Dangerous components:		
108-88-3	Toluene ⚠ Flammable Liquids 2, H225 ⚠ Toxic to Reproduction 2, H361; Specific Target Organ Toxicity - Repeated Exposure 2, H373; Aspiration Hazard 1, H304 ⚠ Skin Irritation 2, H315; Specific Target Organ Toxicity - Single Exposure 3, H336	40-60%
94199-93-6	dodecyl(dimethyl)(tetradecyl)ammonium hydroxide ⚠ Skin Corrosion 1B, H314; Eye Damage 1, H318 ⚠ Aquatic Acute 1, H400; Aquatic Chronic 1, H410 ⚠ Acute Toxicity - Oral 4, H302	20-40%
5137-55-3	Methyltrioctylammonium chloride (Aliquat-336) ⚠ Skin Corrosion 1B, H314; Eye Damage 1, H318 ⚠ Aquatic Acute 1, H400; Aquatic Chronic 1, H410 ⚠ Acute Toxicity - Oral 4, H302	2.5-10%
67-56-1	methanol ⚠ Flammable Liquids 2, H225 ⚠ Acute Toxicity - Oral 3, H301; Acute Toxicity - Dermal 3, H311; Acute Toxicity - Inhalation 3, H331 ⚠ Specific Target Organ Toxicity - Single Exposure 1, H370	2.5-10%
· Non-Dangerous components		
7732-18-5	water, distilled, conductivity or of similar purity	2.5-10%

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

4 First-aid measures

· **Description of first aid measures**

· **General information:**

Immediately remove any clothing soiled by the product.
 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.
 Drink copious amounts of water and provide fresh air. Immediately call a 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.

· **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.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:**
Prevent seepage into sewage system, workpits and cellars.
Dilute with plenty of water.
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).
Use neutralizing agent.
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:**

108-88-3	Toluene	67 ppm
5137-55-3	Methyltrioctylammonium chloride (Aliquat-336)	0.67 mg/m ³
67-56-1	methanol	530 ppm

· **PAC-2:**

108-88-3	Toluene	560 ppm
5137-55-3	Methyltrioctylammonium chloride (Aliquat-336)	7.4 mg/m ³
67-56-1	methanol	2,100 ppm

· **PAC-3:**

108-88-3	Toluene	3700* ppm
5137-55-3	Methyltrioctylammonium chloride (Aliquat-336)	44 mg/m ³
67-56-1	methanol	7200* ppm

7 Handling and storage

- **Handling:**
- **Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace.
Open and handle receptacle with care.
- **Information about protection against explosions and fires:** Keep ignition sources away - Do not smoke.
- **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.

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· *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:*

67-56-1 methanol

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

· *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.

· *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.

· *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

· Change in condition

Melting point/Melting range:	-30 °C (-22 °F)
Boiling point/Boiling range:	110 °C (230 °F)

· Flash point: 6 °C (42.8 °F)

· Auto igniting: 550 °C (1,022 °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:	1.2 Vol %
Upper:	8 Vol %

· Vapor pressure at 20 °C (68 °F): 8 mmHg

· Density at 20 °C (68 °F): 0.870 g/cm³ (7.26015 lbs/gal)

· Solubility in / Miscibility with

Water: Fully miscible.

· Solvent content:

VOC content: 40-60 %

· 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:

Nitrogen oxides

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Carbon monoxide

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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	829 mg/kg
Dermal	LD50	6,000 mg/kg
Inhalative	LC50/4 h	60 mg/l

108-88-3 Toluene

Oral	LD50	5,000 mg/kg (rat)
Dermal	LD50	12,124 mg/kg (rab)
Inhalative	LC50/4 h	5,320 mg/l (mouse)

- Primary irritant effect:
 - on the skin: Strong caustic effect on skin and mucous membranes.
 - on the eye: Strong caustic effect.
- Sensitization: No sensitizing effects known.
- Additional toxicological information:

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

Toxic
Corrosive

Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

· Carcinogenic categories

· IARC (International Agency for Research on Cancer)

108-88-3	Toluene	3
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· NTP (National Toxicology Program)

None of the ingredients is listed.

· 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 1 (Self-assessment): slightly hazardous for water

Must not reach bodies of water or drainage ditch undiluted or unneutralized.

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- **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 be specially treated adhering to official regulations.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleansing agent:** Water, if necessary with cleansing agents.

14 Transport information

- **UN-Number**
- **ADR, IMDG, IATA** UN2924
- **UN proper shipping name**
- **ADR** 2924 FLAMMABLE LIQUID, CORROSIVE, N.O.S. (QUATERNARY AMMONIUM HYDROXIDE IN TOLUENE)
- **IMDG** FLAMMABLE LIQUID, CORROSIVE, N.O.S. (QUATERNARY AMMONIUM HYDROXIDE IN TOLUENE)
- **IATA** FLAMMABLE LIQUID, CORROSIVE, N.O.S. (QUATERNARY AMMONIUM HYDROXIDE IN TOLUENE)

· **Transport hazard class(es)**

· **ADR**



- **Class** 3 (FC) Flammable liquids
- **Label** 3+8

· **IMDG**



- **Class** 3 Flammable liquids
- **Label** 3/8

· **IATA**



- **Class** 3 Flammable liquids

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· Label	3 (8)
· Packing group · ADR, IMDG, IATA	II
· Environmental hazards: · Marine pollutant: · Special marking (ADR):	No Symbol (fish and tree)
· Special precautions for user · Hazard identification number (Kemler code): · EMS Number:	Warning: Flammable liquids 336 F-E,S-C
· 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) · Excepted quantities (EQ)	IL Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· UN "Model Regulation":	UN2924, FLAMMABLE LIQUID, CORROSIVE, N.O.S. (METHANOL, Quaternary Ammonium Hydroxide), ENVIRONMENTALLY HAZARDOUS, 3 (8), II

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):**

108-88-3 Toluene

67-56-1 methanol

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

108-88-3 Toluene

ACTIVE

5137-55-3 Methyltrioctylammonium chloride (Aliquat-336)

ACTIVE

7732-18-5 water, distilled, conductivity or of similar purity

ACTIVE

67-56-1 methanol

ACTIVE

· **Hazardous Air Pollutants**

108-88-3 Toluene

67-56-1 methanol

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· **Proposition 65**

· **Chemicals known to cause cancer:**

None of the ingredients is listed.

· **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:**

108-88-3 Toluene

67-56-1 methanol

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**

108-88-3 Toluene

II

· **TLV (Threshold Limit Value)**

108-88-3 Toluene

A4

· **MAK (German Maximum Workplace Concentration)**

None of the ingredients is listed.

· **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

GHS08

GHS09

· **Signal word Danger**

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

Toluene

dodecyl(dimethyl)(tetradecyl)ammonium hydroxide

Methyltrioctylammonium chloride (Aliquat-336)

methanol

· **Hazard statements**

H225 Highly flammable liquid and vapor.

H302 Harmful if swallowed.

H314 Causes severe skin burns and eye damage.

H361 Suspected of damaging fertility or the unborn child.

H371 May cause damage to the central nervous system and the visual organs.

H336 May cause drowsiness or dizziness.

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

H410 Very toxic to aquatic life with long lasting effects.

· **Precautionary statements**

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

P260 Do not breathe dust/fume/gas/mist/vapors/spray.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

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- P301+P312 *If swallowed: Call a poison center/doctor if you feel unwell.*
 P303+P361+P353 *If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.*
 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.

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**

- H225 *Highly flammable liquid and vapor.*
 H301 *Toxic if swallowed.*
 H302 *Harmful if swallowed.*
 H304 *May be fatal if swallowed and enters airways.*
 H311 *Toxic in contact with skin.*
 H314 *Causes severe skin burns and eye damage.*
 H315 *Causes skin irritation.*
 H318 *Causes serious eye damage.*
 H331 *Toxic if inhaled.*
 H336 *May cause drowsiness or dizziness.*
 H361 *Suspected of damaging fertility or the unborn child.*
 H370 *Causes damage to organs.*
 H373 *May cause damage to organs through prolonged or repeated exposure.*
 H400 *Very toxic to aquatic life.*
 H410 *Very toxic 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** 11/29/2023· **Abbreviations and acronyms:**

- RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
 IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
 ICAO: International Civil Aviation Organisation
 ICAO-TI: Technical Instructions by the "International Civil Aviation Organisation" (ICAO)
 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 2: Flammable liquids – Category 2
 Acute Toxicity - Oral 3: Acute toxicity – Category 3
 Acute Toxicity - Oral 4: Acute toxicity – Category 4
 Skin Corrosion 1B: Skin corrosion/irritation – Category 1B
 Skin Irritation 2: Skin corrosion/irritation – Category 2

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Eye Damage 1: Serious eye damage/eye irritation – Category 1
Toxic to Reproduction 2: Reproductive toxicity – Category 2
Specific Target Organ Toxicity - Single Exposure 1: Specific target organ toxicity (single exposure) – Category 1
Specific Target Organ Toxicity - Single Exposure 2: Specific target organ toxicity (single exposure) – 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
Aspiration Hazard 1: Aspiration hazard – Category 1
Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1
Aquatic Chronic 1: Hazardous to the aquatic environment - long-term aquatic hazard – Category 1

· * **Data compared to the previous version altered.**

US