

# SAFETY DATA SHEET



ASTM D5580 Valve Timing Calibration Blend, Part Number G3440-85004

## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** : ASTM D5580 Valve Timing Calibration Blend, Part Number G3440-85004  
**Part No.** : G3440-85004

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses
Analytical chemistry. 1 ml

### 1.3 Details of the supplier of the safety data sheet

Agilent Technologies Manufacturing GmbH & Co. KG  
Hewlett-Packard-Str. 8  
76337 Waldbronn  
Germany  
0800 603 1000

**e-mail address of person responsible for this SDS** : pdl-msds\_author@agilent.com

### 1.4 Emergency telephone number

**Emergency telephone number (with hours of operation)** : CHEMTREC®: +(44)-870-8200418

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

**Product definition** : Mixture

#### Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

H225	FLAMMABLE LIQUIDS - Category 2
H315	SKIN CORROSION/IRRITATION - Category 2
H319	SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2
H340	GERM CELL MUTAGENICITY - Category 1B
H350	CARCINOGENICITY - Category 1A
H361fd	TOXIC TO REPRODUCTION (Fertility and Unborn child) - Category 2
H336	SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3
H372	SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 1
H400	ACUTE AQUATIC HAZARD - Category 1
H410	LONG-TERM AQUATIC HAZARD - Category 1

#### Classification according to Directive 1999/45/EC [DPD]

The product is classified as dangerous according to Directive 1999/45/EC and its amendments.

**Classification** : F; R11  
Carc. Cat. 1; R45  
Muta. Cat. 2; R46  
Repr. Cat. 3; R62  
T; R48/23  
Xn; R20, R48/21/22  
Xi; R38  
N; R50/53

**Physical/chemical hazards** : Highly flammable.

**Date of issue/Date of revision** : 26/02/2014

**SECTION 2: Hazards identification**

- Human health hazards** : May cause cancer. May cause heritable genetic damage. Possible risk of impaired fertility. Also toxic: danger of serious damage to health by prolonged exposure through inhalation. Also harmful by inhalation. Also harmful: danger of serious damage to health by prolonged exposure in contact with skin and if swallowed. Irritating to skin.
- Environmental hazards** : Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

See Section 16 for the full text of the R phrases or H statements declared above.

See Section 11 for more detailed information on health effects and symptoms.

**2.2 Label elements****Hazard pictograms****Signal word**

: Danger

**Hazard statements**

- : H225 - Highly flammable liquid and vapour.  
 H319 - Causes serious eye irritation.  
 H315 - Causes skin irritation.  
 H340 - May cause genetic defects.  
 H350 - May cause cancer.  
 H361fd - Suspected of damaging fertility. Suspected of damaging the unborn child.  
 H336 - May cause drowsiness or dizziness.  
 H372 - Causes damage to organs through prolonged or repeated exposure.  
 H410 - Very toxic to aquatic life with long lasting effects.

**Precautionary statements****Prevention**

- : P201 - Obtain special instructions before use.  
 P280 - Wear protective gloves. Wear eye or face protection.  
 P210 - Keep away from heat, sparks, open flames and hot surfaces. - No smoking.  
 P241 - Use explosion-proof electrical, ventilating, lighting and all material-handling equipment.  
 P273 - Avoid release to the environment.  
 P260 - Do not breathe vapour.

**Response**

- : P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.  
 P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.

**Storage**

- : P235 - Keep cool.

**Disposal**

- : P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.

**Hazardous ingredients**

- : 2,2,4-trimethylpentane  
 Hexan-2-one  
 o-Xylene  
 Benzene  
 Toluene

**Supplemental label elements**

- : Not applicable.

**Special packaging requirements****Tactile warning of danger**

- : Not applicable.

**2.3 Other hazards****Other hazards which do not result in classification**

- : Prolonged or repeated contact may dry skin and cause irritation.

**SECTION 3: Composition/information on ingredients**

Substance/mixture : Mixture

Product/ingredient name	Identifiers	%	Classification		Type
			67/548/EEC	Regulation (EC) No. 1272/2008 [CLP]	
2,2,4-trimethylpentane	EC: 208-759-1 CAS: 540-84-1 Index: 601-009-00-8	>=50 - <75	F; R11 Xn; R65 Xi; R38 R67 N; R50/53	Flam. Liq. 2, H225 Skin Irrit. 2, H315 STOT SE 3, H336 (Narcotic effects) Asp. Tox. 1, H304 Aquatic Acute 1, H400 Aquatic Chronic 1, H410	[1]
Hexan-2-one	EC: 209-731-1 CAS: 591-78-6 Index: 606-030-00-6	>=10 - <15	R10 Repr. Cat. 3; R62 T; R48/23 R67	Flam. Liq. 3, H226 Repr. 2, H361f (Fertility) STOT SE 3, H336 (Narcotic effects) STOT RE 1, H372	[1]
o-Xylene	EC: 202-422-2 CAS: 95-47-6 Index: 601-022-00-9	>=5 - <10	R10 Xn; R20/21 Xi; R38	Flam. Liq. 3, H226 Acute Tox. 4, H312 Acute Tox. 4, H332 Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H335 and H336 (Respiratory tract irritation and Narcotic effects) Aquatic Chronic 2, H411	[1] [2]
Ethylbenzene	EC: 202-849-4 CAS: 100-41-4 Index: 601-023-00-4	>=7 - <25	F; R11 Xn; R20	Flam. Liq. 2, H225 Acute Tox. 4, H332	[1] [2]
Benzene	EC: 200-753-7 CAS: 71-43-2 Index: 601-020-00-8	>=1 - <5	F; R11 Carc. Cat. 1; R45 Muta. Cat. 2; R46 T; R48/23/24/25 Xn; R65 Xi; R36/38	Flam. Liq. 2, H225 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Muta. 1B, H340 Carc. 1A, H350 STOT RE 1, H372 Asp. Tox. 1, H304	[1] [2]
Toluene	EC: 203-625-9 CAS: 108-88-3 Index: 601-021-00-3	>=1 - <5	F; R11 Repr. Cat. 3; R63 Xn; R48/20, R65 Xi; R38 R67	Flam. Liq. 2, H225 Skin Irrit. 2, H315 Repr. 2, H361d (Unborn child) STOT SE 3, H336 (Narcotic effects) STOT RE 2, H373 Asp. Tox. 1, H304	[1] [2]
			<b>See Section 16 for the full text of the R- phrases declared above.</b>	<b>See Section 16 for the full text of the H statements declared above.</b>	

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Type

- [1] Substance classified with a health or environmental hazard
- [2] Substance with a workplace exposure limit
- [3] Substance meets the criteria for PBT according to Regulation (EC) No. 1907/2006, Annex XIII
- [4] Substance meets the criteria for vPvB according to Regulation (EC) No. 1907/2006, Annex XIII
- [5] Substance of equivalent concern

Occupational exposure limits, if available, are listed in Section 8.

**SECTION 4: First aid measures****4.1 Description of first aid measures**

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Skin contact** : Wash skin thoroughly with soap and water or use recognised skin cleanser. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. If necessary, call a poison center or physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

**4.2 Most important symptoms and effects, both acute and delayed****Potential acute health effects**

- Eye contact** : Causes serious eye irritation.
- Inhalation** : Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness.
- Skin contact** : Causes skin irritation. Defatting to the skin.
- Ingestion** : Can cause central nervous system (CNS) depression. Irritating to mouth, throat and stomach.

**Over-exposure signs/symptoms**

- Eye contact** : Adverse symptoms may include the following:  
pain or irritation  
watering  
redness
- Inhalation** : Adverse symptoms may include the following:  
nausea or vomiting  
headache  
drowsiness/fatigue  
dizziness/vertigo  
unconsciousness  
reduced foetal weight  
increase in foetal deaths  
skeletal malformations

## SECTION 4: First aid measures

- Skin contact** : Adverse symptoms may include the following:  
 irritation  
 redness  
 dryness  
 cracking  
 reduced foetal weight  
 increase in foetal deaths  
 skeletal malformations
- Ingestion** : Adverse symptoms may include the following:  
 reduced foetal weight  
 increase in foetal deaths  
 skeletal malformations

### 4.3 Indication of any immediate medical attention and special treatment needed

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Specific treatments** : No specific treatment.

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

- Suitable extinguishing media** : Use dry chemical, CO<sub>2</sub>, water spray (fog) or foam.
- Unsuitable extinguishing media** : Do not use water jet.

### 5.2 Special hazards arising from the substance or mixture

- Hazards from the substance or mixture** : Highly flammable liquid and vapour. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Runoff to sewer may create fire or explosion hazard. This material is very toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
- Hazardous combustion products** : Decomposition products may include the following materials:  
 carbon dioxide  
 carbon monoxide

### 5.3 Advice for firefighters

- Special precautions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

## SECTION 6: Accidental release measures

**6.2 Environmental precautions** : Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.

### 6.3 Methods and materials for containment and cleaning up

**Methods for cleaning up** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

### 6.4 Reference to other sections

: See Section 1 for emergency contact information.  
See Section 8 for information on appropriate personal protective equipment.  
See Section 13 for additional waste treatment information.

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

**Protective measures** : Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapour or mist. Do not ingest. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.

### Advice on general occupational hygiene

: Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

### 7.2 Conditions for safe storage, including any incompatibilities

: Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.

### 7.3 Specific end use(s)

**Recommendations** : Industrial applications, Professional applications.

**Industrial sector specific solutions** : Not applicable.

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

#### Occupational exposure limits

## SECTION 8: Exposure controls/personal protection

Product/ingredient name	Exposure limit values
o-Xylene	<b>EU OEL (Europe, 12/2009). Absorbed through skin. Notes: list of indicative occupational exposure limit values</b> STEL: 442 mg/m <sup>3</sup> 15 minutes. STEL: 100 ppm 15 minutes. TWA: 221 mg/m <sup>3</sup> 8 hours. TWA: 50 ppm 8 hours.
Ethylbenzene	<b>EU OEL (Europe, 12/2009). Absorbed through skin. Notes: list of indicative occupational exposure limit values</b> STEL: 884 mg/m <sup>3</sup> 15 minutes. STEL: 200 ppm 15 minutes. TWA: 442 mg/m <sup>3</sup> 8 hours. TWA: 100 ppm 8 hours.
Benzene	<b>EU OEL (Europe, 12/2009). Absorbed through skin.</b> TWA: 3.25 mg/m <sup>3</sup> 8 hours. TWA: 1 ppm 8 hours.
Toluene	<b>EU OEL (Europe, 12/2009). Absorbed through skin. Notes: list of indicative occupational exposure limit values</b> STEL: 384 mg/m <sup>3</sup> 15 minutes. STEL: 100 ppm 15 minutes. TWA: 192 mg/m <sup>3</sup> 8 hours. TWA: 50 ppm 8 hours.

**Recommended monitoring procedures** : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

### Derived effect levels

No DNELs available.

### Predicted effect concentrations

No PNECs available.

## 8.2 Exposure controls

**Appropriate engineering controls** : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapour or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

### Individual protection measures

**Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

**Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

### Skin protection

**SECTION 8: Exposure controls/personal protection**

- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves. Refer to European Standard EN 1149 for further information on material and design requirements and test methods.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

**SECTION 9: Physical and chemical properties****9.1 Information on basic physical and chemical properties**Appearance

- Physical state** : Liquid. [Clear.]
- Colour** : Colourless.
- Odour** : Not available.
- Odour threshold** : Not available.
- pH** : Not available.
- Melting point/freezing point** : -116°C
- Initial boiling point and boiling range** : 99°C
- Flash point** : Closed cup: -12°C
- Evaporation rate** : >1 (butyl acetate = 1)
- Flammability (solid, gas)** : Not available.
- Upper/lower flammability or explosive limits** : Lower: 1.1%  
Upper: 6%
- Vapour pressure** : <5.5 kPa [room temperature]
- Vapour density** : Not available.
- Relative density** : 0.69
- Solubility(ies)** : Easily soluble in the following materials: acetone.  
Insoluble in the following materials: cold water and hot water.
- Partition coefficient: n-octanol/water** : Not available.
- Auto-ignition temperature** : Not available.
- Decomposition temperature** : Not available.
- Viscosity** : Not available.
- Explosive properties** : Slightly explosive in the presence of the following materials or conditions: oxidizing materials.

**9.2 Other information**

No additional information.



## SECTION 10: Stability and reactivity

- 10.1 Reactivity** : No specific test data related to reactivity available for this product or its ingredients.
- 10.2 Chemical stability** : The product is stable.
- 10.3 Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.
- 10.4 Conditions to avoid** : Avoid all possible sources of ignition (spark or flame). Do not pressurise, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.
- 10.5 Incompatible materials** : Reactive or incompatible with the following materials:  
oxidizing materials, alkalis  
Other: alkalis.
- 10.6 Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

#### Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
2,2,4-trimethylpentane	LC50 Inhalation Vapour	Rat	47.4 mg/l	1 hours
	LD50 Oral	Rat	>2500 mg/kg	-
Hexan-2-one	LC50 Inhalation Gas.	Rat	8000 ppm	4 hours
	LD50 Dermal	Rabbit	4800 mg/kg	-
o-Xylene	LD50 Oral	Rat	2590 mg/kg	-
	LC50 Inhalation Gas.	Rat	5300 ppm	4 hours
Ethylbenzene	LD50 Dermal	Rabbit	>20000 mg/kg	-
	LD50 Oral	Rat	3000 mg/kg	-
Benzene	LC50 Inhalation Gas.	Rat	4000 ppm	4 hours
	LD50 Dermal	Rabbit	>5000 mg/kg	-
Toluene	LD50 Oral	Rat	3500 mg/kg	-
	LC50 Inhalation Vapour	Rat	930 mg/kg	-
	LD50 Oral	Rat	49 g/m <sup>3</sup>	4 hours
	LD50 Oral	Rat	636 mg/kg	-

#### Acute toxicity estimates

Route	ATE value
Dermal	12222.2 mg/kg
Inhalation (gases)	25328.6 ppm

#### Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Hexan-2-one	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
Ethylbenzene	Skin - Mild irritant	Rabbit	-	24 hours 15 milligrams	-
Benzene	Eyes - Moderate irritant	Rabbit	-	88 milligrams	-
	Skin - Mild irritant	Rat	-	8 hours 60 microliters	-
Toluene	Skin - Mild irritant	Rabbit	-	24 hours 15 milligrams	-
	Skin - Moderate irritant	Rabbit	-	24 hours 20 milligrams	-
	Eyes - Mild irritant	Rabbit	-	0.5 minutes 100 milligrams	-

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	Eyes - Mild irritant	Rabbit	-	870 Micrograms	-
	Skin - Mild irritant	Rabbit	-	435 milligrams	-
	Skin - Moderate irritant	Rabbit	-	24 hours 20 milligrams	-
	Skin - Moderate irritant	Rabbit	-	500 milligrams	-

### Sensitiser

**Conclusion/Summary** : Not available.

### Chronic toxicity / Carcinogenicity / Mutagenicity / Teratogenicity / Reproductive toxicity

Not available.

### Specific target organ toxicity (single exposure)

Product/ingredient name	Category	Route of exposure	Target organs
2,2,4-trimethylpentane	Category 3	Not applicable.	Narcotic effects
Hexan-2-one	Category 3	Not applicable.	Narcotic effects
o-Xylene	Category 3	Not applicable.	Respiratory tract irritation and Narcotic effects
Toluene	Category 3	Not applicable.	Narcotic effects

### Specific target organ toxicity (repeated exposure)

Product/ingredient name	Category	Route of exposure	Target organs
Hexan-2-one	Category 1	Not determined	Not determined
Benzene	Category 1	Not determined	Not determined
Toluene	Category 2	Not determined	Not determined

### Aspiration hazard

Product/ingredient name	Result
2,2,4-trimethylpentane	ASPIRATION HAZARD - Category 1
Benzene	ASPIRATION HAZARD - Category 1
Toluene	ASPIRATION HAZARD - Category 1

**Information on the likely routes of exposure** : Not available.

### Potential acute health effects

- Inhalation** : Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness.
- Ingestion** : Can cause central nervous system (CNS) depression. Irritating to mouth, throat and stomach.
- Skin contact** : Causes skin irritation. Defatting to the skin.
- Eye contact** : Causes serious eye irritation.

### Symptoms related to the physical, chemical and toxicological characteristics

- Inhalation** : Adverse symptoms may include the following:  
nausea or vomiting  
headache  
drowsiness/fatigue  
dizziness/vertigo  
unconsciousness  
reduced foetal weight  
increase in foetal deaths  
skeletal malformations
- Ingestion** : Adverse symptoms may include the following:  
reduced foetal weight  
increase in foetal deaths  
skeletal malformations

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- Skin contact** : Adverse symptoms may include the following:  
 irritation  
 redness  
 dryness  
 cracking  
 reduced foetal weight  
 increase in foetal deaths  
 skeletal malformations
- Eye contact** : Adverse symptoms may include the following:  
 pain or irritation  
 watering  
 redness

### Delayed and immediate effects and also chronic effects from short and long term exposure

#### Short term exposure

- Potential immediate effects** : Not available.
- Potential delayed effects** : Not available.

#### Long term exposure

- Potential immediate effects** : Not available.
- Potential delayed effects** : Not available.

### Potential chronic health effects

- General** : Causes damage to organs through prolonged or repeated exposure. Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis.
- Carcinogenicity** : May cause cancer. Risk of cancer depends on duration and level of exposure.
- Mutagenicity** : May cause genetic defects.
- Teratogenicity** : Suspected of damaging the unborn child.
- Developmental effects** : No known significant effects or critical hazards.
- Fertility effects** : Suspected of damaging fertility.
- Other information** : Not available.

## SECTION 12: Ecological information

### 12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
Hexan-2-one o-Xylene	Acute LC50 428000 µg/l Fresh water	Fish - Pimephales promelas	96 hours
	Acute EC50 4700 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	72 hours
	Acute EC50 12700 µg/l Fresh water	Crustaceans - Artemia sp. - Nauplii	48 hours
	Acute EC50 1390 µg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
Ethylbenzene	Acute LC50 7600 µg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours
	Acute EC50 4600 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	72 hours
	Acute EC50 3600 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	96 hours
	Acute EC50 2970 µg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
Benzene	Acute LC50 5200 µg/l Marine water	Crustaceans - Americamysis bahia	48 hours
	Acute LC50 4200 µg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours
	Chronic NOEC 1000 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	96 hours
	Acute EC50 29000 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	72 hours
	Acute EC50 1360000 µg/l Fresh water	Algae - Scenedesmus abundans	96 hours

## SECTION 12: Ecological information

Toluene	Acute EC50 9230 µg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
	Acute LC50 21000 µg/l Marine water	Crustaceans - Artemia salina - Nauplii	48 hours
	Acute LC50 5.28 ul/L Fresh water	Fish - Oncorhynchus gorbuscha - Fry	96 hours
	Chronic NOEC 1.5 to 5.4 ul/L Marine water	Fish - Morone saxatilis - Juvenile (Fledgling, Hatchling, Weanling)	4 weeks
	Acute EC50 433 ppm Marine water	Algae - Skeletonema costatum	96 hours
	Acute EC50 12500 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	72 hours
	Acute EC50 11600 µg/l Fresh water	Crustaceans - Gammarus pseudolimnaeus - Adult	48 hours
	Acute EC50 6000 µg/l Fresh water	Daphnia - Daphnia magna - Juvenile (Fledgling, Hatchling, Weanling)	48 hours
	Acute LC50 5500 µg/l Fresh water	Fish - Oncorhynchus kisutch - Fry	96 hours
Chronic NOEC 500000 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	96 hours	
Chronic NOEC 1000 µg/l Fresh water	Daphnia - Daphnia magna	21 days	

### 12.2 Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
2,2,4-trimethylpentane	-	0 to 84 % - 8 days	-	-

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
2,2,4-trimethylpentane	-	-	Inherent
Ethylbenzene	-	-	Readily

### 12.3 Bioaccumulative potential

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
2,2,4-trimethylpentane	4.08	231	low
Hexan-2-one	1.38	-	low
o-Xylene	3.12	8.1 to 25.9	low
Ethylbenzene	3.6	-	low
Benzene	2.13	11	low
Toluene	2.73	90	low

### 12.4 Mobility in soil

**Soil/water partition coefficient (K<sub>oc</sub>)** : Not available.

**Mobility** : Not available.

### 12.5 Results of PBT and vPvB assessment

**PBT** : Not applicable.

**vPvB** : Not applicable.

**12.6 Other adverse effects** : No known significant effects or critical hazards.

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

#### Product

**Methods of disposal** : The generation of waste should be avoided or minimised wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction.

**Hazardous waste** : The classification of the product may meet the criteria for a hazardous waste.

#### Packaging

**Methods of disposal** : The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

**Special precautions** : This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

## SECTION 14: Transport information

### Regulatory information

**ADR/RID / IMDG / IATA** : Not regulated.

**Additional information** : **Remarks**  
De minimis quantities

**14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** : Not available.

## SECTION 15: Regulatory information

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

#### EU Regulation (EC) No. 1907/2006 (REACH)

#### Annex XIV - List of substances subject to authorisation

##### Substances of very high concern

None of the components are listed.

**Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles** : Restricted to professional users.

#### Other EU regulations

**Europe inventory** : All components are listed or exempted.

**Black List Chemicals** : Not listed

**Priority List Chemicals** : Not listed

**Integrated pollution prevention and control list (IPPC) - Air** : Not listed

**Integrated pollution prevention and control list (IPPC) - Water** : Not listed

## SECTION 15: Regulatory information

Product/ingredient name	Carcinogenic effects	Mutagenic effects	Developmental effects	Fertility effects
Hexan-2-one	-	-	-	Repr. 2, H361f (Fertility)
Benzene	Carc. 1A, H350	Muta. 1B, H340	-	-
Toluene	-	-	Repr. 2, H361d (Unborn child)	-

**15.2 Chemical Safety Assessment** : This product contains substances for which Chemical Safety Assessments might still be required.

## SECTION 16: Other information

✔ Indicates information that has changed from previously issued version.

**Abbreviations and acronyms** : ATE = Acute Toxicity Estimate  
 CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]  
 DNEL = Derived No Effect Level  
 EUH statement = CLP-specific Hazard statement  
 PNEC = Predicted No Effect Concentration  
 RRN = REACH Registration Number

### Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Classification	Justification
Flam. Liq. 2, H225 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Muta. 1B, H340 Carc. 1A, H350 Repr. 2, H361fd (Fertility and Unborn child) STOT SE 3, H336 (Narcotic effects) STOT RE 1, H372 Aquatic Acute 1, H400 Aquatic Chronic 1, H410	On basis of test data Calculation method Calculation method Calculation method Calculation method Calculation method Calculation method Calculation method Calculation method Calculation method

**Full text of abbreviated H statements** : H225 Highly flammable liquid and vapour.  
 H226 Flammable liquid and vapour.  
 H304 May be fatal if swallowed and enters airways.  
 H312 (dermal) Harmful in contact with skin.  
 H315 Causes skin irritation.  
 H319 Causes serious eye irritation.  
 H332 (inhalation) Harmful if inhaled.  
 H335 and H336 (Respiratory tract irritation and Narcotic effects) May cause respiratory irritation. May cause drowsiness or dizziness. (Respiratory tract irritation and Narcotic effects)  
 H336 (Narcotic effects) May cause drowsiness or dizziness. (Narcotic effects)  
 H340 May cause genetic defects.  
 H350 May cause cancer.  
 H361d (Unborn child) Suspected of damaging the unborn child.  
 H361f (Fertility) Suspected of damaging fertility.  
 H361fd (Fertility and Unborn child) Suspected of damaging fertility. Suspected of damaging the unborn child.  
 H372 Causes damage to organs through prolonged or repeated exposure.  
 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.  
 H411 Toxic to aquatic life with long lasting effects.

## SECTION 16: Other information

<b>Full text of classifications [CLP/GHS]</b>	: Acute Tox. 4, H312 Acute Tox. 4, H332 Aquatic Acute 1, H400 Aquatic Chronic 1, H410 Aquatic Chronic 2, H411 Asp. Tox. 1, H304 Carc. 1A, H350 Eye Irrit. 2, H319 Flam. Liq. 2, H225 Flam. Liq. 3, H226 Muta. 1B, H340 Repr. 2, H361d (Unborn child) Repr. 2, H361f (Fertility) Repr. 2, H361fd (Fertility and Unborn child) Skin Irrit. 2, H315 STOT RE 1, H372  STOT RE 2, H373  STOT SE 3, H335 and H336 (Respiratory tract irritation and Narcotic effects) STOT SE 3, H336 (Narcotic effects)	ACUTE TOXICITY (dermal) - Category 4 ACUTE TOXICITY (inhalation) - Category 4 ACUTE AQUATIC HAZARD - Category 1 LONG-TERM AQUATIC HAZARD - Category 1 LONG-TERM AQUATIC HAZARD - Category 2 ASPIRATION HAZARD - Category 1 CARCINOGENICITY - Category 1A SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2 FLAMMABLE LIQUIDS - Category 2 FLAMMABLE LIQUIDS - Category 3 GERM CELL MUTAGENICITY - Category 1B TOXIC TO REPRODUCTION (Unborn child) - Category 2  TOXIC TO REPRODUCTION (Fertility) - Category 2 TOXIC TO REPRODUCTION (Fertility and Unborn child) - Category 2 SKIN CORROSION/IRRITATION - Category 2 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 1 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation and Narcotic effects) - Category 3  SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3
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<b>Full text of abbreviated R phrases</b>	: R11- Highly flammable. R10- Flammable. R45- May cause cancer. R46- May cause heritable genetic damage. R62- Possible risk of impaired fertility. R63- Possible risk of harm to the unborn child. R48/23- Also toxic: danger of serious damage to health by prolonged exposure through inhalation. R48/23/24/25- Also toxic: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed. R20- Also harmful by inhalation. R20/21- Also harmful by inhalation and in contact with skin. R48/20- Also harmful: danger of serious damage to health by prolonged exposure through inhalation. R48/21/22- Also harmful: danger of serious damage to health by prolonged exposure in contact with skin and if swallowed. R65- Also harmful: may cause lung damage if swallowed. R38- Irritating to skin. R36/38- Irritating to eyes and skin. R67- Vapours may cause drowsiness and dizziness. R50/53- Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
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<b>Full text of classifications [DSD/DPD]</b>	: F - Highly flammable Carc. Cat. 1 - Carcinogen category 1 Muta. Cat. 2 - Mutagen category 2 Repr. Cat. 3 - Toxic to reproduction category 3 T - Toxic Xn - Harmful Xi - Irritant N - Dangerous for the environment
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**Notice to reader**

## SECTION 16: Other information

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