

SAFETY DATA SHEET



Atomic Emission Detector Sample Kit, Part Number 8500-5067

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

1.1 Product identifier

Product name : Atomic Emission Detector Sample Kit, Part Number 8500-5067
Part no. (chemical kit) : 8500-5067
Part no. : AED Test Mixture #1 8500-5068-1
 : AED Test Mixture #2 8500-5069-1

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

Identified uses : Reagents and Standards for Analytical Chemistry Laboratory Use
 : AED Test Mixture #1 3 x 0.5 ml
 : AED Test Mixture #2 3 x 0.5 ml
Uses advised against : None known.

1.3 Details of the supplier of the safety data sheet

Agilent Technologies LDA UK Ltd.
 5500 Lakeside Cheadle Royal Business Park,
 Cheadle, Cheshire, SK8 3GR
 United Kingdom
 Tel: +44 (0) 345 712 5292
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 : AED Test Mixture #1 Mixture
 : AED Test Mixture #2 Mixture

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

AED Test Mixture #1

H225	FLAMMABLE LIQUIDS	Category 2
H336	SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE (Narcotic effects)	Category 3
H304	ASPIRATION HAZARD	Category 1
H400	SHORT-TERM (ACUTE) AQUATIC HAZARD	Category 1
H410	LONG-TERM (CHRONIC) AQUATIC HAZARD	Category 1

AED Test Mixture #2

H225	FLAMMABLE LIQUIDS	Category 2
H336	SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE (Narcotic effects)	Category 3
H304	ASPIRATION HAZARD	Category 1
H400	SHORT-TERM (ACUTE) AQUATIC HAZARD	Category 1
H410	LONG-TERM (CHRONIC) AQUATIC HAZARD	Category 1

AED Test Mixture #1 The product is classified as hazardous according to UK CLP Regulation SI 2019/720 as amended.
 AED Test Mixture #2 The product is classified as hazardous according to UK CLP Regulation SI 2019/720 as amended.



SECTION 2: Hazards identification

Ingredients of unknown toxicity	: AED Test Mixture #1	Percentage of the mixture consisting of ingredient(s) of unknown acute inhalation toxicity: 1 - 10%
	AED Test Mixture #2	Percentage of the mixture consisting of ingredient(s) of unknown acute inhalation toxicity: 1 - 10%
Ingredients of unknown ecotoxicity	: AED Test Mixture #1	Contains 4.3% of components with unknown hazards to the aquatic environment
	AED Test Mixture #2	Contains 4.3% of components with unknown hazards to the aquatic environment

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

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

2.2 Label elements

Hazard pictograms	: AED Test Mixture #1	
	AED Test Mixture #2	
Signal word	: AED Test Mixture #1 AED Test Mixture #2	Danger Danger
Hazard statements	: AED Test Mixture #1	H225 - Highly flammable liquid and vapour. H304 - May be fatal if swallowed and enters airways. H336 - May cause drowsiness or dizziness. H410 - Very toxic to aquatic life with long lasting effects.
	AED Test Mixture #2	H225 - Highly flammable liquid and vapour. H304 - May be fatal if swallowed and enters airways. H336 - May cause drowsiness or dizziness. H410 - Very toxic to aquatic life with long lasting effects.
<u>Precautionary statements</u>		
Prevention	: AED Test Mixture #1	P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P273 - Avoid release to the environment.
	AED Test Mixture #2	P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P273 - Avoid release to the environment.
Response	: AED Test Mixture #1	P391 - Collect spillage. P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor.
	AED Test Mixture #2	P391 - Collect spillage. P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor.
Storage	: AED Test Mixture #1	P403 + P233 - Store in a well-ventilated place. Keep container tightly closed.
	AED Test Mixture #2	P403 + P233 - Store in a well-ventilated place. Keep container tightly closed.
Disposal	: AED Test Mixture #1	P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
	AED Test Mixture #2	P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
Hazardous ingredients	: AED Test Mixture #1 AED Test Mixture #2	2,2,4-trimethylpentane 2,2,4-trimethylpentane
Supplemental label elements	: AED Test Mixture #1 AED Test Mixture #2	Repeated exposure may cause skin dryness or cracking. Repeated exposure may cause skin dryness or cracking.

SECTION 2: Hazards identification

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles : AED Test Mixture #1 Not applicable.
 AED Test Mixture #2 Not applicable.

Special packaging requirements

Containers to be fitted with child-resistant fastenings : AED Test Mixture #1 Not applicable.
 AED Test Mixture #2 Not applicable.

Tactile warning of danger : AED Test Mixture #1 Not applicable.
 AED Test Mixture #2 Not applicable.

2.3 Other hazards

Product meets the criteria for PBT or vPvB according to Regulation (EC) No. 1907/2006, Annex XIII : AED Test Mixture #1 This mixture does not contain any substances that are assessed to be a PBT or a vPvB.
 AED Test Mixture #2 This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

Other hazards which do not result in classification : AED Test Mixture #1 None known.
 AED Test Mixture #2 None known.

SECTION 3: Composition/information on ingredients

3.1 Substances : AED Test Mixture #1 Mixture
 AED Test Mixture #2 Mixture

Product/ingredient name	Identifiers	%	Classification	Type
AED Test Mixture #1 2,2,4-trimethylpentane	EC: 208-759-1 CAS: 540-84-1	≥90	Flam. Liq. 2, H225 Skin Irrit. 2, H315 STOT SE 3, H336 Asp. Tox. 1, H304 Aquatic Acute 1, H400 (M=1) Aquatic Chronic 1, H410 (M=1)	[1]
dodecane	EC: 203-967-9 CAS: 112-40-3	≤5	Eye Irrit. 2, H319 Asp. Tox. 1, H304 EUH066	[1]
octane	EC: 203-892-1 CAS: 111-65-9 Index: 601-009-00-8	≤5	Flam. Liq. 2, H225 Skin Irrit. 2, H315 STOT SE 3, H336 Asp. Tox. 1, H304 Aquatic Acute 1, H400 (M=1) Aquatic Chronic 1, H410 (M=1)	[1]
AED Test Mixture #2 2,2,4-trimethylpentane	EC: 208-759-1 CAS: 540-84-1	≥90	Flam. Liq. 2, H225 Skin Irrit. 2, H315 STOT SE 3, H336 Asp. Tox. 1, H304 Aquatic Acute 1, H400 (M=1) Aquatic Chronic 1, H410 (M=1)	[1]
dodecane	EC: 203-967-9 CAS: 112-40-3	≤5	Eye Irrit. 2, H319 Asp. Tox. 1, H304 EUH066	[1]

SECTION 3: Composition/information on ingredients

octane	EC: 203-892-1 CAS: 111-65-9 Index: 601-009-00-8	≤5	Flam. Liq. 2, H225 Skin Irrit. 2, H315 STOT SE 3, H336 Asp. Tox. 1, H304 Aquatic Acute 1, H400 (M=1) Aquatic Chronic 1, H410 (M=1) See Section 16 for the full text of the H statements declared above.	[1]
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There are no additional ingredients present which, within the current knowledge of the supplier, are classified and contribute to the classification of the substance and hence require reporting in this section.

Type
 AED Test Mixture #1 [1] Substance classified with a health or environmental hazard
 AED Test Mixture #2 [1] Substance classified with a health or environmental hazard
 Occupational exposure limits, if available, are listed in Section 8.

SECTION 4: First aid measures

4.1 Description of first aid measures

Eye contact : AED Test Mixture #1 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.
 AED Test Mixture #2 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 : AED Test Mixture #1 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.
 AED Test Mixture #2 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 : AED Test Mixture #1 Wash skin thoroughly with soap and water or use recognised skin cleanser. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.
 AED Test Mixture #2 Wash skin thoroughly with soap and water or use recognised skin cleanser. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.

SECTION 4: First aid measures

Ingestion	: AED Test Mixture #1	Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. 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. Aspiration hazard if swallowed. Can enter lungs and cause damage. Do not induce vomiting. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. 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.
	AED Test Mixture #2	Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. 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. Aspiration hazard if swallowed. Can enter lungs and cause damage. Do not induce vomiting. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. 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	: AED Test Mixture #1	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.
	AED Test Mixture #2	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.

4.2 Most important symptoms and effects, both acute and delayed

Over-exposure signs/symptoms

Eye contact	: AED Test Mixture #1 AED Test Mixture #2	No specific data. No specific data.
Inhalation	: AED Test Mixture #1 AED Test Mixture #2	Adverse symptoms may include the following: nausea or vomiting headache drowsiness/fatigue dizziness/vertigo unconsciousness Adverse symptoms may include the following: nausea or vomiting headache drowsiness/fatigue dizziness/vertigo unconsciousness
Skin contact	: AED Test Mixture #1 AED Test Mixture #2	Adverse symptoms may include the following: irritation dryness cracking Adverse symptoms may include the following: irritation dryness cracking

SECTION 4: First aid measures

Ingestion	: AED Test Mixture #1	Adverse symptoms may include the following: nausea or vomiting
	AED Test Mixture #2	Adverse symptoms may include the following: nausea or vomiting

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician	: AED Test Mixture #1	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	AED Test Mixture #2	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Specific treatments	: AED Test Mixture #1	No specific treatment.
	AED Test Mixture #2	No specific treatment.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media	: AED Test Mixture #1	Use dry chemical, CO ₂ , water spray (fog) or foam.
	AED Test Mixture #2	Use dry chemical, CO ₂ , water spray (fog) or foam.
Unsuitable extinguishing media	: AED Test Mixture #1	Do not use water jet.
	AED Test Mixture #2	Do not use water jet.

5.2 Special hazards arising from the substance or mixture

Hazards from the substance or mixture	: AED Test Mixture #1	Highly flammable liquid and vapour. Runoff to sewer may create fire or explosion hazard. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. The vapour/gas is heavier than air and will spread along the ground. Vapours may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. 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.
	AED Test Mixture #2	Highly flammable liquid and vapour. Runoff to sewer may create fire or explosion hazard. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. The vapour/gas is heavier than air and will spread along the ground. Vapours may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. 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	: AED Test Mixture #1	Decomposition products may include the following materials: carbon dioxide carbon monoxide
	AED Test Mixture #2	Decomposition products may include the following materials: carbon dioxide carbon monoxide

5.3 Advice for firefighters

Special protective actions for fire-fighters	: AED Test Mixture #1	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.
	AED Test Mixture #2	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.

SECTION 5: Firefighting measures

Special protective equipment for fire-fighters

: AED Test Mixture #1
AED Test Mixture #2

Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

: AED Test Mixture #1
AED Test Mixture #2

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.
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

: AED Test Mixture #1
AED Test Mixture #2

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".
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".

6.2 Environmental precautions

: AED Test Mixture #1
AED Test Mixture #2

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.
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 material for containment and cleaning up

Methods for cleaning up

: AED Test Mixture #1
AED Test Mixture #2

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.
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

SECTION 6: Accidental release measures

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	: AED Test Mixture #1	Put on appropriate personal protective equipment (see Section 8). Do not swallow. Avoid contact with eyes, skin and clothing. Avoid breathing vapour or mist. 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.
	AED Test Mixture #2	Put on appropriate personal protective equipment (see Section 8). Do not swallow. Avoid contact with eyes, skin and clothing. Avoid breathing vapour or mist. 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	: AED Test Mixture #1	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.
	AED Test Mixture #2	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

Storage	: AED Test Mixture #1	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 oxidising 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
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SECTION 7: Handling and storage

AED Test Mixture #2

unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use. 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 oxidising 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. See Section 10 for incompatible materials before handling or use.

Seveso Directive - Reporting thresholds

Danger criteria

Category	Notification and MAPP threshold	Safety report threshold
AED Test Mixture #1 P5c E1	5000 tonne 100 tonne	50000 tonne 200 tonne
AED Test Mixture #2 P5c E1	5000 tonne 100 tonne	50000 tonne 200 tonne

7.3 Specific end use(s)

Recommendations	: AED Test Mixture #1 AED Test Mixture #2	Industrial applications, Professional applications. Industrial applications, Professional applications.
Industrial sector specific solutions	: AED Test Mixture #1 AED Test Mixture #2	Not available. Not available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

No exposure limit value known.

Biological exposure indices

No exposure indices known.

Recommended monitoring procedures : Reference should be made to appropriate monitoring standards. Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

DNELs/DMELs

Product/ingredient name	Type	Exposure	Value	Population	Effects
AED Test Mixture #1 2,2,4-trimethylpentane	DNEL	Long term Inhalation	608 mg/m ³	General population	Systemic
	DNEL	Long term Oral	699 mg/kg bw/day	General population	Systemic
	DNEL	Long term Dermal	699 mg/kg bw/day	General population	Systemic
	DNEL	Long term Dermal	773 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Inhalation	2035 mg/m ³	Workers	Systemic

SECTION 8: Exposure controls/personal protection

octane	DNEL	Long term Inhalation	608 mg/m ³	General population	Systemic	
	DNEL	Long term Oral	699 mg/kg bw/day	General population	Systemic	
	DNEL	Long term Dermal	699 mg/kg bw/day	General population	Systemic	
	DNEL	Long term Dermal	773 mg/kg bw/day	Workers	Systemic	
	DNEL	Long term Inhalation	2035 mg/m ³	Workers	Systemic	
	AED Test Mixture #2 2,2,4-trimethylpentane	DNEL	Long term Inhalation	608 mg/m ³	General population	Systemic
		DNEL	Long term Oral	699 mg/kg bw/day	General population	Systemic
		DNEL	Long term Dermal	699 mg/kg bw/day	General population	Systemic
		DNEL	Long term Dermal	773 mg/kg bw/day	Workers	Systemic
		DNEL	Long term Inhalation	2035 mg/m ³	Workers	Systemic
octane	DNEL	Long term Inhalation	608 mg/m ³	General population	Systemic	
	DNEL	Long term Oral	699 mg/kg bw/day	General population	Systemic	
	DNEL	Long term Dermal	699 mg/kg bw/day	General population	Systemic	
	DNEL	Long term Dermal	773 mg/kg bw/day	Workers	Systemic	
	DNEL	Long term Inhalation	2035 mg/m ³	Workers	Systemic	

PNECs

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

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.

SECTION 8: Exposure controls/personal protection

- 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.
- 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** : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.
- 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

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

9.1 Information on basic physical and chemical properties

Appearance

- Physical state** : AED Test Mixture #1 Liquid.
AED Test Mixture #2 Liquid.
- Colour** : AED Test Mixture #1 Clear. Colourless.
AED Test Mixture #2 Clear. Colourless.
- Odour** : AED Test Mixture #1 Gasoline-like
AED Test Mixture #2 Gasoline-like
- Odour threshold** : AED Test Mixture #1 Not available.
AED Test Mixture #2 Not available.
- Melting point/freezing point** : AED Test Mixture #1 -107°C
AED Test Mixture #2 -107°C
- Initial boiling point and boiling range** : AED Test Mixture #1 99.2°C
AED Test Mixture #2 99.2°C
- Flammability** : AED Test Mixture #1 Not applicable.
AED Test Mixture #2 Not applicable.
- Upper/lower flammability or explosive limits** : AED Test Mixture #1 Lower: 1.1%
Upper: 6%
AED Test Mixture #2 Lower: 1.1%
Upper: 6%
- Flash point** : AED Test Mixture #1 Open cup: 4.5°C
AED Test Mixture #2 Open cup: 4.5°C

Auto-ignition temperature

Ingredient name	°C	Method
AED Test Mixture #1		
dodecane	200	-
octane	206	-
AED Test Mixture #2		
dodecane	200	-
octane	206	-

- Decomposition temperature** : AED Test Mixture #1 Not available.
AED Test Mixture #2 Not available.
- pH** : AED Test Mixture #1 Not available.
AED Test Mixture #2 Not available.

SECTION 9: Physical and chemical properties

Viscosity : AED Test Mixture #1 Not available.
AED Test Mixture #2 Not available.

Solubility(ies)	Media	Result
	AED Test Mixture #1 water	Insoluble
	AED Test Mixture #2 water	Insoluble

Partition coefficient: n-octanol/water : AED Test Mixture #1 Not applicable.
AED Test Mixture #2 Not applicable.

Vapour pressure : AED Test Mixture #1 5.5 kPa (41 mm Hg)
AED Test Mixture #2 5.5 kPa (41 mm Hg)

Evaporation rate : AED Test Mixture #1 Not available.
AED Test Mixture #2 Not available.

Relative density : AED Test Mixture #1 Not available.
AED Test Mixture #2 Not available.

Vapour density : AED Test Mixture #1 3.93 [Air = 1]
AED Test Mixture #2 3.93 [Air = 1]

Explosive properties : AED Test Mixture #1 Not available.
AED Test Mixture #2 Not available.

Oxidising properties : AED Test Mixture #1 Not available.
AED Test Mixture #2 Not available.

Particle characteristics

Median particle size : AED Test Mixture #1 Not applicable.
AED Test Mixture #2 Not applicable.

9.2 Other information

No additional information.

SECTION 10: Stability and reactivity

10.1 Reactivity : AED Test Mixture #1 No specific test data related to reactivity available for this product or its ingredients.
AED Test Mixture #2 No specific test data related to reactivity available for this product or its ingredients.

10.2 Chemical stability : AED Test Mixture #1 The product is stable.
AED Test Mixture #2 The product is stable.

10.3 Possibility of hazardous reactions : AED Test Mixture #1 Under normal conditions of storage and use, hazardous reactions will not occur.
AED Test Mixture #2 Under normal conditions of storage and use, hazardous reactions will not occur.

10.4 Conditions to avoid : AED Test Mixture #1 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. Do not allow vapour to accumulate in low or confined areas.
AED Test Mixture #2 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. Do not allow vapour to accumulate in low or confined areas.

10.5 Incompatible materials : AED Test Mixture #1 Reactive or incompatible with the following materials:
oxidising materials
AED Test Mixture #2 Reactive or incompatible with the following materials:
oxidising materials

SECTION 10: Stability and reactivity

10.6 Hazardous decomposition products	: AED Test Mixture #1	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	AED Test Mixture #2	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
AED Test Mixture #1 2,2,4-trimethylpentane	LC50 Inhalation Vapour	Rat - Male, Female	>33.52 mg/l	4 hours
	LD50 Oral	Rat - Male, Female	>5000 mg/kg	-
	dodecane	LD50 Dermal	Rabbit - Male, Female	>5000 mg/kg
octane	LD50 Oral	Rat - Male, Female	>5000 mg/kg	-
	LC50 Inhalation Vapour	Rat	118 g/m ³	4 hours
	LC50 Inhalation Vapour	Rat	25260 ppm	4 hours
	LD50 Oral	Rat	>5000 mg/kg	-
AED Test Mixture #2 2,2,4-trimethylpentane	LC50 Inhalation Vapour	Rat - Male, Female	>33.52 mg/l	4 hours
	LD50 Oral	Rat - Male, Female	>5000 mg/kg	-
	dodecane	LD50 Dermal	Rabbit - Male, Female	>5000 mg/kg
octane	LD50 Oral	Rat - Male, Female	>5000 mg/kg	-
	LC50 Inhalation Vapour	Rat	118 g/m ³	4 hours
	LC50 Inhalation Vapour	Rat	25260 ppm	4 hours
	LD50 Oral	Rat	>5000 mg/kg	-

Acute toxicity estimates

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapours) (mg/l)	Inhalation (dusts and mists) (mg/l)
AED Test Mixture #1 octane	N/A	N/A	N/A	118	N/A
AED Test Mixture #2 octane	N/A	N/A	N/A	118	N/A

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
AED Test Mixture #1 dodecane	Skin - Moderate irritant	Rabbit	-	24 hours 0.05 MI	-
	Skin - Moderate irritant	Rat	-	96 hours 300 uL	-
AED Test Mixture #2 dodecane	Skin - Moderate irritant	Rabbit	-	24 hours 0.05 MI	-
	Skin - Moderate irritant	Rat	-	96 hours 300 uL	-

Sensitiser

SECTION 11: Toxicological information

Conclusion/Summary : Not available.

Mutagenicity

Conclusion/Summary : Not available.

Carcinogenicity

Conclusion/Summary : Not available.

Reproductive toxicity

Conclusion/Summary : Not available.

Teratogenicity

Conclusion/Summary : Not available.

Specific target organ toxicity (single exposure)

Product/ingredient name	Category	Route of exposure	Target organs
AED Test Mixture #1 2,2,4-trimethylpentane octane	Category 3 Category 3	- -	Narcotic effects Narcotic effects
AED Test Mixture #2 2,2,4-trimethylpentane octane	Category 3 Category 3	- -	Narcotic effects Narcotic effects

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Product/ingredient name	Result
AED Test Mixture #1 AED Test Mixture #1 2,2,4-trimethylpentane dodecane octane	ASPIRATION HAZARD - Category 1 ASPIRATION HAZARD - Category 1 ASPIRATION HAZARD - Category 1 ASPIRATION HAZARD - Category 1
AED Test Mixture #2 AED Test Mixture #2 2,2,4-trimethylpentane dodecane octane	ASPIRATION HAZARD - Category 1 ASPIRATION HAZARD - Category 1 ASPIRATION HAZARD - Category 1 ASPIRATION HAZARD - Category 1

Information on likely routes of exposure : AED Test Mixture #1
AED Test Mixture #2

Routes of entry anticipated: Oral, Dermal, Inhalation, Eyes.
Routes of entry anticipated: Oral, Dermal, Inhalation, Eyes.

Potential acute health effects

Inhalation	: AED Test Mixture #1 AED Test Mixture #2	Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness. Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness.
Ingestion	: AED Test Mixture #1 AED Test Mixture #2	Can cause central nervous system (CNS) depression. May be fatal if swallowed and enters airways. Can cause central nervous system (CNS) depression. May be fatal if swallowed and enters airways.
Skin contact	: AED Test Mixture #1 AED Test Mixture #2	Defatting to the skin. May cause skin dryness and irritation. Defatting to the skin. May cause skin dryness and irritation.
Eye contact	: AED Test Mixture #1 AED Test Mixture #2	No known significant effects or critical hazards. No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

SECTION 11: Toxicological information

Inhalation	: AED Test Mixture #1	Adverse symptoms may include the following: nausea or vomiting headache drowsiness/fatigue dizziness/vertigo unconsciousness
	AED Test Mixture #2	Adverse symptoms may include the following: nausea or vomiting headache drowsiness/fatigue dizziness/vertigo unconsciousness
Ingestion	: AED Test Mixture #1	Adverse symptoms may include the following: nausea or vomiting
	AED Test Mixture #2	Adverse symptoms may include the following: nausea or vomiting
Skin contact	: AED Test Mixture #1	Adverse symptoms may include the following: irritation dryness cracking
	AED Test Mixture #2	Adverse symptoms may include the following: irritation dryness cracking
Eye contact	: AED Test Mixture #1	No specific data.
	AED Test Mixture #2	No specific data.

Delayed and immediate effects as well as 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

Conclusion/Summary : Not available.

General : AED Test Mixture #1 Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis.
AED Test Mixture #2 Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis.

Carcinogenicity : AED Test Mixture #1 No known significant effects or critical hazards.
AED Test Mixture #2 No known significant effects or critical hazards.

Mutagenicity : AED Test Mixture #1 No known significant effects or critical hazards.
AED Test Mixture #2 No known significant effects or critical hazards.

Reproductive toxicity : AED Test Mixture #1 No known significant effects or critical hazards.
AED Test Mixture #2 No known significant effects or critical hazards.

Other information : AED Test Mixture #1 Adverse symptoms may include the following: Repeated exposure may cause skin dryness or cracking.
AED Test Mixture #2 Adverse symptoms may include the following: Repeated exposure may cause skin dryness or cracking.

SECTION 12: Ecological information

12.1 Toxicity

Conclusion/Summary : Not available.

12.2 Persistence and degradability

Conclusion/Summary : Not available.

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
AED Test Mixture #1			
2,2,4-trimethylpentane	-	-	Inherent
dodecane	-	-	Readily
octane	-	-	Readily
AED Test Mixture #2			
2,2,4-trimethylpentane	-	-	Inherent
dodecane	-	-	Readily
octane	-	-	Readily

12.3 Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
AED Test Mixture #1			
2,2,4-trimethylpentane	4.08	231	Low
dodecane	6.98	239.88	Low
octane	5.18	198.7	Low
AED Test Mixture #2			
2,2,4-trimethylpentane	4.08	231	Low
dodecane	6.98	239.88	Low
octane	5.18	198.7	Low

12.4 Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

Mobility : Not available.

12.5 Results of PBT and vPvB assessment

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

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.

SECTION 13: Disposal considerations

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. Vapour 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

	ADR/RID	IMDG	IATA
14.1 UN number	UN1262	UN1262	UN1262
14.2 UN proper shipping name	OCTANES solution	OCTANES solution	Octanes solution
14.3 Transport hazard class(es)	3  	3  	3 
14.4 Packing group	II	II	II
14.5 Environmental hazards	Yes.	Yes.	Yes. The environmentally hazardous substance mark is not required.

Additional information

Remarks: De minimis quantities

ADR/RID : The environmentally hazardous substance mark is not required when transported in sizes of ≤5 L or ≤5 kg.

Hazard identification number 33

Limited quantity 1 L

Tunnel code (D/E)

IMDG : The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg.

Emergency schedules F-E, S-E

IATA : The environmentally hazardous substance mark may appear if required by other transportation regulations.

Quantity limitation Passenger and Cargo Aircraft: 5 L. Packaging instructions: 353. Cargo Aircraft Only: 60 L. Packaging instructions: 364. Limited Quantities - Passenger Aircraft: 1 L. Packaging instructions: Y341.

14.6 Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

14.7 Transport in bulk according to IMO instruments : Not available.

SECTION 15: Regulatory information

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

UK (GB)/REACH

Annex XIV - List of substances subject to authorisation

Annex XIV

None of the components are listed.

Substances of very high concern

SECTION 15: Regulatory information

None of the components are listed.

Ozone depleting substances

Not listed.

Prior Informed Consent (PIC)

Not listed.

Persistent Organic Pollutants

Not listed.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles

Product / Ingredient name	Identifiers	Status
AED Test Mixture #1 AED Test Mixture #1 1,2,4-trichlorobenzene	- EC: 204-428-0 CAS: 120-82-1 Index: 602-087-00-6	3 49
AED Test Mixture #2 AED Test Mixture #2 1,2,4-trichlorobenzene	- EC: 204-428-0 CAS: 120-82-1 Index: 602-087-00-6	3 49

Label : AED Test Mixture #1 Not applicable.
AED Test Mixture #2 Not applicable.

Seveso Directive

This product is controlled under the Seveso Directive.

Danger criteria

Category
AED Test Mixture #1 P5c E1
AED Test Mixture #2 P5c E1

EU regulations

Industrial emissions (integrated pollution prevention and control) - Air : Not listed

Industrial emissions (integrated pollution prevention and control) - Water : Not listed

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

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

SECTION 15: Regulatory information

Not listed.

[Rotterdam Convention on Prior Informed Consent \(PIC\)](#)

Not listed.

[UNECE Aarhus Protocol on POPs and Heavy Metals](#)

Not listed.

[Inventory list](#)

United States : Not determined.

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]
 DMEL = Derived Minimal Effect Level
 DNEL = Derived No Effect Level
 EUH statement = CLP-specific Hazard statement
 N/A = Not available
 PBT = Persistent, Bioaccumulative and Toxic
 PNEC = Predicted No Effect Concentration
 RRN = REACH Registration Number
 vPvB = Very Persistent and Very Bioaccumulative

[Procedure used to derive the classification](#)

Classification	Justification
AED Test Mixture #1 Flam. Liq. 2, H225 STOT SE 3, H336 Asp. Tox. 1, H304 Aquatic Acute 1, H400 Aquatic Chronic 1, H410	On basis of test data Calculation method Expert judgment Calculation method Calculation method
AED Test Mixture #2 Flam. Liq. 2, H225 STOT SE 3, H336 Asp. Tox. 1, H304 Aquatic Acute 1, H400 Aquatic Chronic 1, H410	On basis of test data Calculation method Expert judgment Calculation method Calculation method

[Full text of abbreviated H statements](#)

AED Test Mixture #1	
H225	Highly flammable liquid and vapour.
H304	May be fatal if swallowed and enters airways.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H336	May cause drowsiness or dizziness.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
EUH066	Repeated exposure may cause skin dryness or cracking.
AED Test Mixture #2	
H225	Highly flammable liquid and vapour.
H304	May be fatal if swallowed and enters airways.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H336	May cause drowsiness or dizziness.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

SECTION 16: Other information

EUH066 Repeated exposure may cause skin dryness or cracking.

Full text of classifications

AED Test Mixture #1

Aquatic Acute 1	SHORT-TERM (ACUTE) AQUATIC HAZARD - Category 1
Aquatic Chronic 1	LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 1
Asp. Tox. 1	ASPIRATION HAZARD - Category 1
Eye Irrit. 2	SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2
Flam. Liq. 2	FLAMMABLE LIQUIDS - Category 2
Skin Irrit. 2	SKIN CORROSION/IRRITATION - Category 2
STOT SE 3	SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE - Category 3

AED Test Mixture #2

Aquatic Acute 1	SHORT-TERM (ACUTE) AQUATIC HAZARD - Category 1
Aquatic Chronic 1	LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 1
Asp. Tox. 1	ASPIRATION HAZARD - Category 1
Eye Irrit. 2	SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2
Flam. Liq. 2	FLAMMABLE LIQUIDS - Category 2
Skin Irrit. 2	SKIN CORROSION/IRRITATION - Category 2
STOT SE 3	SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE - Category 3

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