

# SAFETY DATA SHEET

## Fuel Ethanol Analyzer Checkout Mix - G3440-85010

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

#### 1.1 Product identifier

**Product name** : Fuel Ethanol Analyzer Checkout Mix - G3440-85010  
**Part No. (Kit)** : G3440-85010  
**Part No.** : Sample 1 (Calibration Mix) Not available.  
 Sample 2 (Fuel Ethanol) Not available.

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

Identified uses	
Analytical chemistry. 4 x 2 ml	
Sample 1 (Calibration Mix)	2 ml
Sample 2 (Fuel Ethanol)	2 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** : Sample 1 (Calibration Mix) Mixture  
 Sample 2 (Fuel Ethanol) Mixture

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

##### Sample 1 (Calibration Mix)

H225 FLAMMABLE LIQUIDS - Category 2  
 H319 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2  
 H360FD TOXIC TO REPRODUCTION [Fertility and Unborn child] - Category 1B  
 H335 and H336 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) [Respiratory tract irritation and Narcotic effects] - Category 3  
 H373 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) [liver] - Category 2  
 H411 AQUATIC TOXICITY (CHRONIC) - Category 2

##### Sample 2 (Fuel Ethanol)

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 1B  
 H335 and H336 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) [Respiratory tract irritation and Narcotic effects] - Category 3  
 H373 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) [liver] -

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**SECTION 2: Hazards identification**

H412 Category 2  
AQUATIC TOXICITY (CHRONIC) - Category 3

**Ingredients of unknown toxicity** : Sample 1 (Calibration Mix) Not applicable.  
Sample 2 (Fuel Ethanol) Percentage of the mixture consisting of ingredient(s) of unknown toxicity: 5%

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

Sample 1 (Calibration Mix) The product is classified as dangerous according to Directive 1999/45/EC and its amendments.

Sample 2 (Fuel Ethanol) The product is classified as dangerous according to Directive 1999/45/EC and its amendments.

**Classification** : Sample 1 (Calibration Mix) F; R11  
N; R51/53  
Sample 2 (Fuel Ethanol) F; R11  
Carc. Cat. 2; R45  
Muta. Cat. 2; R46

**Physical/chemical hazards** : Sample 1 (Calibration Mix) Highly flammable.  
Sample 2 (Fuel Ethanol) Highly flammable.

**Human health hazards** : Sample 1 (Calibration Mix) Not applicable.  
Sample 2 (Fuel Ethanol) May cause cancer. May cause heritable genetic damage.

**Environmental hazards** : Sample 1 (Calibration Mix) Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.  
Sample 2 (Fuel Ethanol) Not applicable.

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** : Sample 1 (Calibration Mix) Danger  
Sample 2 (Fuel Ethanol) Danger

**Hazard statements** : Sample 1 (Calibration Mix) **GHS02** - Highly flammable liquid and vapour.  
**GHS07** - May cause respiratory irritation.  
Causes serious eye irritation.  
May cause drowsiness or dizziness.  
**GHS08** - May damage fertility or the unborn child.  
May cause damage to organs through prolonged or repeated exposure. (liver)  
**GHS09** - Toxic to aquatic life with long lasting effects.  
Sample 2 (Fuel Ethanol) **GHS02** - Highly flammable liquid and vapour.  
**GHS07** - Causes skin irritation.  
May cause respiratory irritation.  
Causes serious eye irritation.  
May cause drowsiness or dizziness.  
**GHS08** - May cause genetic defects.  
May cause cancer.  
May cause damage to organs through prolonged or repeated exposure. (liver)

**SECTION 2: Hazards identification**

Harmful to aquatic life with long lasting effects.

**Precautionary statements**

<b>Prevention</b>	: Sample 1 (Calibration Mix)	Obtain special instructions before use. Wear protective gloves. Wear eye or face protection. Keep away from heat, sparks, open flames and hot surfaces. - No smoking. Use explosion-proof electrical, ventilating, lighting and all material-handling equipment. Avoid release to the environment. Do not breathe vapour.
	Sample 2 (Fuel Ethanol)	Obtain special instructions before use. Wear protective gloves. Wear eye or face protection. Keep away from heat, sparks, open flames and hot surfaces. - No smoking. Use explosion-proof electrical, ventilating, lighting and all material-handling equipment. Avoid release to the environment. Do not breathe vapour.
<b>Response</b>	: Sample 1 (Calibration Mix)	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
	Sample 2 (Fuel Ethanol)	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
<b>Storage</b>	: Sample 1 (Calibration Mix)	Keep cool.
	Sample 2 (Fuel Ethanol)	Keep cool.
<b>Disposal</b>	: Sample 1 (Calibration Mix)	Dispose of contents and container in accordance with all local, regional, national and international regulations.
	Sample 2 (Fuel Ethanol)	Dispose of contents and container in accordance with all local, regional, national and international regulations.
<b>Hazardous ingredients</b>	: <b>Sample 1 (Calibration Mix)</b> Ethanol Methanol	
	<b>Sample 2 (Fuel Ethanol)</b> Ethanol Gasoline Gasoline, natural	
<b>Supplemental label elements</b>	: Sample 1 (Calibration Mix)	Repeated exposure may cause skin dryness or cracking.
	Sample 2 (Fuel Ethanol)	Repeated exposure may cause skin dryness or cracking.
<b><u>Special packaging requirements</u></b>		
<b>Tactile warning of danger</b>	: Sample 1 (Calibration Mix)	Not applicable.
	Sample 2 (Fuel Ethanol)	Not applicable.
<b>2.3 Other hazards</b>		
<b>Other hazards which do not result in classification</b>	: Sample 1 (Calibration Mix)	Defatting to the skin.
	Sample 2 (Fuel Ethanol)	None known.

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

<b>Substance/mixture</b>	: Sample 1 (Calibration Mix)	Mixture
	Sample 2 (Fuel Ethanol)	Mixture

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

Product/ingredient name	Identifiers	%	Classification		Type
			67/548/EEC	Regulation (EC) No. 1272/2008 [CLP]	
<b>Sample 1 (Calibration Mix)</b> Ethanol	EC: 200-578-6 CAS: 64-17-5 Index: 603-002-00-5	>=90	F; R11	Flam. Liq. 2, H225 Eye Irrit. 2, H319 STOT SE 3, H335 and H336 STOT RE 2, H373 Aquatic Chronic 3, H412	[1] [2]
n-Heptane	EC: 205-563-8 CAS: 142-82-5 Index: 601-008-00-2	2.5 - <5	F; R11 Xn; R65 Xi; R38 R67 N; R50/53	Flam. Liq. 2, H225 Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H335 and H336 Asp. Tox. 1, H304 Aquatic Acute 1, H400 Aquatic Chronic 1, H410	[1] [2]
Methanol	EC: 200-659-6 CAS: 67-56-1 Index: 603-001-00-X	<3	F; R11 T; R23/24/25, R39/23/24/25	Flam. Liq. 2, H225 Acute Tox. 3, H301 Acute Tox. 3, H311 Acute Tox. 3, H331 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Repr. 1B, H360FD STOT SE 1, H370 STOT SE 3, H335 Aquatic Chronic 3, H412	[1] [2]
<b>Sample 2 (Fuel Ethanol)</b> Ethanol	EC: 200-578-6 CAS: 64-17-5 Index: 603-002-00-5	>=90	F; R11	Flam. Liq. 2, H225 Eye Irrit. 2, H319 STOT SE 3, H335 and H336 STOT RE 2, H373 Aquatic Chronic 3, H412	[1] [2]
Gasoline	EC: 289-220-8 CAS: 86290-81-5 Index: 649-378-00-4	1 - <10	Carc. Cat. 2; R45 Muta. Cat. 2; R46 Xn; R65	Flam. Liq. 1, H224 Acute Tox. 3, H331 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Muta. 1B, H340 Carc. 1B, H350 STOT SE 3, H335 and H336 STOT RE 2, H373 Asp. Tox. 1, H304 Aquatic Chronic 3, H412	[1] [2]
Gasoline, natural	EC: 232-349-1 CAS: 8006-61-9 Index: 649-261-00-8	1 - <10	Carc. Cat. 2; R45 Muta. Cat. 2; R46 Xn; R65  <b>See Section 16 for the full text of the R-phrases declared above.</b>	Flam. Liq. 2, H225 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Muta. 1B, H340 Carc. 1B, H350 STOT SE 3, H335 Asp. Tox. 1, H304 Aquatic Chronic 2, H411  <b>See Section 16 for the full text of the H statements declared above.</b>	[1]

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

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

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

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

<b>Eye contact</b>	: Sample 1 (Calibration Mix)	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.
	Sample 2 (Fuel Ethanol)	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.
<b>Inhalation</b>	: Sample 1 (Calibration Mix)	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.
	Sample 2 (Fuel Ethanol)	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.
<b>Skin contact</b>	: Sample 1 (Calibration Mix)	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.
	Sample 2 (Fuel Ethanol)	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.

## SECTION 4: First aid measures

<b>Ingestion</b>	: Sample 1 (Calibration Mix)	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.
	Sample 2 (Fuel Ethanol)	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.
<b>Protection of first-aiders</b>	: Sample 1 (Calibration Mix)	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.
	Sample 2 (Fuel Ethanol)	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

<b>Eye contact</b>	: Sample 1 (Calibration Mix)	Causes serious eye irritation.
	Sample 2 (Fuel Ethanol)	Causes serious eye irritation.
<b>Inhalation</b>	: Sample 1 (Calibration Mix)	Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness. May cause respiratory irritation.
	Sample 2 (Fuel Ethanol)	Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness. May cause respiratory irritation.
<b>Skin contact</b>	: Sample 1 (Calibration Mix)	Defatting to the skin. May cause skin dryness and irritation.
	Sample 2 (Fuel Ethanol)	Causes skin irritation. Defatting to the skin.
<b>Ingestion</b>	: Sample 1 (Calibration Mix)	Can cause central nervous system (CNS) depression. Irritating to mouth, throat and stomach.
	Sample 2 (Fuel Ethanol)	Can cause central nervous system (CNS) depression. Irritating to mouth, throat and stomach.

#### Over-exposure signs/symptoms

## SECTION 4: First aid measures

<b>Eye contact</b>	: Sample 1 (Calibration Mix)	Adverse symptoms may include the following: pain or irritation watering redness
	Sample 2 (Fuel Ethanol)	Adverse symptoms may include the following: pain or irritation watering redness
<b>Inhalation</b>	: Sample 1 (Calibration Mix)	Adverse symptoms may include the following: respiratory tract irritation coughing nausea or vomiting headache drowsiness/fatigue dizziness/vertigo unconsciousness reduced foetal weight increase in foetal deaths skeletal malformations
	Sample 2 (Fuel Ethanol)	Adverse symptoms may include the following: respiratory tract irritation coughing nausea or vomiting headache drowsiness/fatigue dizziness/vertigo unconsciousness
<b>Skin contact</b>	: Sample 1 (Calibration Mix)	Adverse symptoms may include the following: irritation dryness cracking reduced foetal weight increase in foetal deaths skeletal malformations
	Sample 2 (Fuel Ethanol)	Adverse symptoms may include the following: irritation redness dryness cracking
<b>Ingestion</b>	: Sample 1 (Calibration Mix)	Adverse symptoms may include the following: reduced foetal weight increase in foetal deaths skeletal malformations
	Sample 2 (Fuel Ethanol)	No specific data.

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

<b>Notes to physician</b>	: Sample 1 (Calibration Mix)	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	Sample 2 (Fuel Ethanol)	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
<b>Specific treatments</b>	: Sample 1 (Calibration Mix)	No specific treatment.
	Sample 2 (Fuel Ethanol)	No specific treatment.

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

<b>Suitable extinguishing media</b>	: Sample 1 (Calibration Mix)	Use dry chemical, CO <sub>2</sub> , water spray (fog) or foam.
	Sample 2 (Fuel Ethanol)	Use dry chemical, CO <sub>2</sub> , water spray (fog) or foam.
<b>Unsuitable extinguishing media</b>	: Sample 1 (Calibration Mix)	Do not use water jet.
	Sample 2 (Fuel Ethanol)	Do not use water jet.

**SECTION 5: Firefighting measures****5.2 Special hazards arising from the substance or mixture**

<b>Hazards from the substance or mixture</b>	: Sample 1 (Calibration Mix)	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. 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. Runoff to sewer may create fire or explosion hazard. This material is 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.
	Sample 2 (Fuel Ethanol)	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. 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. Runoff to sewer may create fire or explosion hazard. This material is harmful 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.
<b>Hazardous combustion products</b>	: Sample 1 (Calibration Mix)	Decomposition products may include the following materials: carbon dioxide carbon monoxide
	Sample 2 (Fuel Ethanol)	Decomposition products may include the following materials: carbon dioxide carbon monoxide

**5.3 Advice for firefighters**

<b>Special precautions for fire-fighters</b>	: Sample 1 (Calibration Mix)	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.
	Sample 2 (Fuel Ethanol)	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.
<b>Special protective equipment for fire-fighters</b>	: Sample 1 (Calibration Mix)	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.
	Sample 2 (Fuel Ethanol)	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**

<b>For non-emergency personnel</b>	: Sample 1 (Calibration Mix)	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.
	Sample 2 (Fuel Ethanol)	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.
<b>For emergency responders</b>	: Sample 1 (Calibration Mix)	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".
	Sample 2 (Fuel Ethanol)	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**

	: Sample 1 (Calibration Mix)	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.
	Sample 2 (Fuel Ethanol)	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.

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

<b>Methods for cleaning up</b>	: Sample 1 (Calibration Mix)	Stop leak if without risk. Move containers from spill area. 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. Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor.
	Sample 2 (Fuel Ethanol)	Stop leak if without risk. Move containers from spill area. 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. Use spark-proof tools and explosion-proof equipment. 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.
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**SECTION 7: Handling and storage****7.1 Precautions for safe handling**

<b>Protective measures</b>	: Sample 1 (Calibration Mix)	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.
	Sample 2 (Fuel Ethanol)	Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. 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.
<b>Advice on general occupational hygiene</b>	: Sample 1 (Calibration Mix)	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.
	Sample 2 (Fuel Ethanol)	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.
<b>7.2 Conditions for safe storage, including any incompatibilities</b>	: Sample 1 (Calibration Mix)	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.
	Sample 2 (Fuel Ethanol)	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-

## SECTION 7: Handling and storage

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** : Sample 1 (Calibration Mix) Industrial applications, Professional applications.  
 Sample 2 (Fuel Ethanol) Industrial applications, Professional applications.

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

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

#### Occupational exposure limits

Product/ingredient name	Exposure limit values
<b>Sample 1 (Calibration Mix)</b> Ethanol	<b>ACGIH TLV (United States, 3/2012).</b> STEL: 1000 ppm 15 minutes.
n-Heptane	<b>EU OEL (Europe, 12/2009). Notes: list of indicative occupational exposure limit values</b> TWA: 2085 mg/m <sup>3</sup> 8 hours. TWA: 500 ppm 8 hours.
Methanol	<b>EU OEL (Europe, 12/2009). Absorbed through skin. Notes: list of indicative occupational exposure limit values</b> TWA: 260 mg/m <sup>3</sup> 8 hours. TWA: 200 ppm 8 hours.
<b>Sample 2 (Fuel Ethanol)</b> Ethanol	<b>ACGIH TLV (United States, 3/2012).</b> STEL: 1000 ppm 15 minutes.
Gasoline	<b>ACGIH TLV (United States, 3/2012).</b> STEL: 1480 mg/m <sup>3</sup> 15 minutes. STEL: 500 ppm 15 minutes. TWA: 890 mg/m <sup>3</sup> 8 hours. TWA: 300 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

**Date of issue/Date of revision** : 19/03/2013

## SECTION 8: Exposure controls/personal protection

**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.

### 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.

**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.

**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

<b>Physical state</b>	:	Sample 1 (Calibration Mix)	Liquid. [Clear.]
		Sample 2 (Fuel Ethanol)	Liquid.
<b>Colour</b>	:	Sample 1 (Calibration Mix)	Colourless.
		Sample 2 (Fuel Ethanol)	Colourless.
<b>Odour</b>	:	Sample 1 (Calibration Mix)	Sweet.
		Sample 2 (Fuel Ethanol)	Alcohol-like. / Characteristic. / Gasoline-like [Strong]
<b>Odour threshold</b>	:	Sample 1 (Calibration Mix)	Not available.
		Sample 2 (Fuel Ethanol)	Not available.
<b>pH</b>	:	Sample 1 (Calibration Mix)	Not available.
		Sample 2 (Fuel Ethanol)	Not available.
<b>Melting point/freezing point</b>	:	Sample 1 (Calibration Mix)	-107°C
		Sample 2 (Fuel Ethanol)	<-113.89°C
<b>Initial boiling point and boiling range</b>	:	Sample 1 (Calibration Mix)	98 to 99°C
		Sample 2 (Fuel Ethanol)	73.89 to 79.45°C

**SECTION 9: Physical and chemical properties**

<b>Flash point</b>	: Sample 1 (Calibration Mix)	Closed cup: -8°C [ASTM D56]
	: Sample 2 (Fuel Ethanol)	Closed cup: 10 to 13°C
<b>Evaporation rate</b>	: Sample 1 (Calibration Mix)	>1 (butyl acetate = 1)
	: Sample 2 (Fuel Ethanol)	1.7 (butyl acetate = 1)
<b>Flammability (solid, gas)</b>	: Sample 1 (Calibration Mix)	Not available.
	: Sample 2 (Fuel Ethanol)	Not available.
<b>Upper/lower flammability or explosive limits</b>	: Sample 1 (Calibration Mix)	Lower: 1%
	: Sample 2 (Fuel Ethanol)	Not available.
<b>Vapour pressure</b>	: Sample 1 (Calibration Mix)	11.7 kPa [room temperature]
	: Sample 2 (Fuel Ethanol)	Not available.
<b>Vapour density</b>	: Sample 1 (Calibration Mix)	3.9 [Air = 1]
	: Sample 2 (Fuel Ethanol)	1.6 [Air = 1]
<b>Relative density</b>	: Sample 1 (Calibration Mix)	0.6963
	: Sample 2 (Fuel Ethanol)	0.79
<b>Solubility(ies)</b>	: Sample 1 (Calibration Mix)	Insoluble in the following materials: cold water and hot water.
	: Sample 2 (Fuel Ethanol)	Soluble in the following materials: cold water and hot water.
<b>Partition coefficient: n-octanol/water</b>	: Sample 1 (Calibration Mix)	Not available.
	: Sample 2 (Fuel Ethanol)	Not available.
<b>Auto-ignition temperature</b>	: Sample 1 (Calibration Mix)	Not available.
	: Sample 2 (Fuel Ethanol)	>365°C
<b>Decomposition temperature</b>	: Sample 1 (Calibration Mix)	Not available.
	: Sample 2 (Fuel Ethanol)	Not available.
<b>Viscosity</b>	: Sample 1 (Calibration Mix)	Not available.
	: Sample 2 (Fuel Ethanol)	Not available.
<b>Explosive properties</b>	: Sample 1 (Calibration Mix)	Explosive in the presence of the following materials or conditions: oxidizing materials.
	: Sample 2 (Fuel Ethanol)	Keep away from: open flames, sparks and static discharge

**9.2 Other information**

No additional information.

**SECTION 10: Stability and reactivity**

<b>10.1 Reactivity</b>	: Sample 1 (Calibration Mix)	No specific test data related to reactivity available for this product or its ingredients.
	: Sample 2 (Fuel Ethanol)	No specific test data related to reactivity available for this product or its ingredients.
<b>10.2 Chemical stability</b>	: Sample 1 (Calibration Mix)	The product is stable.
	: Sample 2 (Fuel Ethanol)	The product is stable.
<b>10.3 Possibility of hazardous reactions</b>	: Sample 1 (Calibration Mix)	Under normal conditions of storage and use, hazardous reactions will not occur.
	: Sample 2 (Fuel Ethanol)	Under normal conditions of storage and use, hazardous reactions will not occur.

## SECTION 10: Stability and reactivity

<b>10.4 Conditions to avoid</b>	: Sample 1 (Calibration Mix)  Sample 2 (Fuel Ethanol)	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 vapor to accumulate in low or confined areas.  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 vapor to accumulate in low or confined areas.
<b>10.5 Incompatible materials</b>	: Sample 1 (Calibration Mix) Sample 2 (Fuel Ethanol)	Reactive or incompatible with the following materials: oxidizing materials  Reactive or incompatible with the following materials: oxidizing materials
<b>10.6 Hazardous decomposition products</b>	: Sample 1 (Calibration Mix) Sample 2 (Fuel Ethanol)	Under normal conditions of storage and use, hazardous decomposition products should not be produced.  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
<b>Sample 1 (Calibration Mix)</b> Ethanol	LC50 Inhalation Vapour	Rat	124700 mg/m <sup>3</sup>	4 hours
	LD50 Oral	Rat	7 g/kg	-
n-Heptane	LC50 Inhalation Gas.	Rat	48000 ppm	4 hours
	LC50 Inhalation Vapour	Rat	103 g/m <sup>3</sup>	4 hours
Methanol	LC50 Inhalation Gas.	Rat	145000 ppm	1 hours
	LC50 Inhalation Gas.	Rat	64000 ppm	4 hours
	LD50 Dermal	Rabbit	15800 mg/kg	-
	LD50 Oral	Rat	5600 mg/kg	-
<b>Sample 2 (Fuel Ethanol)</b> Ethanol	LC50 Inhalation Vapour	Rat	124700 mg/m <sup>3</sup>	4 hours
	LD50 Oral	Rat	7 g/kg	-
Gasoline	LC50 Inhalation Vapour	Rat	>5.2 mg/l	4 hours
	LD50 Oral	Rat	13.6 g/kg	-

#### Acute toxicity estimates

Route	ATE value
<b>Sample 1 (Calibration Mix)</b> Oral Dermal Inhalation (vapours)	33333.3 mg/kg 100000 mg/kg 1000 mg/l
<b>Sample 2 (Fuel Ethanol)</b> Inhalation (vapours)	60 mg/l

#### Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
<b>Sample 1 (Calibration Mix)</b> Ethanol	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Eyes - Moderate irritant	Rabbit	-	0.066666667 minutes 100 milligrams	-
	Eyes - Moderate irritant	Rabbit	-	100 microliters	-
	Skin - Mild irritant	Rabbit	-	400	-

**SECTION 11: Toxicological information**

Methanol	Skin - Moderate irritant	Rabbit	-	milligrams 24 hours 20	-
	Eyes - Moderate irritant	Rabbit	-	milligrams 24 hours 100	-
<b>Sample 2 (Fuel Ethanol)</b> Ethanol	Eyes - Moderate irritant	Rabbit	-	40 milligrams	-
	Skin - Moderate irritant	Rabbit	-	24 hours 20 milligrams	-
	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Eyes - Moderate irritant	Rabbit	-	0.066666667 minutes 100 milligrams	-
	Eyes - Moderate irritant	Rabbit	-	100 microliters	-
	Skin - Mild irritant	Rabbit	-	400 milligrams	-
	Skin - Moderate irritant	Rabbit	-	24 hours 20 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
<b>Sample 1 (Calibration Mix)</b> Ethanol	Category 3	Not applicable.	Respiratory tract irritation and Narcotic effects
n-Heptane	Category 3	Not applicable.	Respiratory tract irritation and Narcotic effects
Methanol	Category 1	Not determined	central nervous system (CNS)
	Category 3	Not applicable.	Respiratory tract irritation
<b>Sample 2 (Fuel Ethanol)</b> Ethanol	Category 3	Not applicable.	Respiratory tract irritation and Narcotic effects
Gasoline	Category 3	Not applicable.	Respiratory tract irritation and Narcotic effects
Gasoline, natural	Category 3	Not applicable.	Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

Product/ingredient name	Category	Route of exposure	Target organs
<b>Sample 1 (Calibration Mix)</b> Ethanol	Category 2	Not determined	liver
<b>Sample 2 (Fuel Ethanol)</b> Ethanol Gasoline	Category 2	Not determined	liver
	Category 2	Not determined	kidneys

Aspiration hazard

**SECTION 11: Toxicological information**

Product/ingredient name	Result
<b>Sample 1 (Calibration Mix)</b> n-Heptane	ASPIRATION HAZARD - Category 1
<b>Sample 2 (Fuel Ethanol)</b> Gasoline Gasoline, natural	ASPIRATION HAZARD - Category 1 ASPIRATION HAZARD - Category 1

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

Potential acute health effects

<b>Inhalation</b>	: Sample 1 (Calibration Mix)	Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness. May cause respiratory irritation.
	Sample 2 (Fuel Ethanol)	Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness. May cause respiratory irritation.
<b>Ingestion</b>	: Sample 1 (Calibration Mix)	Can cause central nervous system (CNS) depression. Irritating to mouth, throat and stomach.
	Sample 2 (Fuel Ethanol)	Can cause central nervous system (CNS) depression. Irritating to mouth, throat and stomach.
<b>Skin contact</b>	: Sample 1 (Calibration Mix)	Defatting to the skin. May cause skin dryness and irritation.
	Sample 2 (Fuel Ethanol)	Causes skin irritation. Defatting to the skin.
<b>Eye contact</b>	: Sample 1 (Calibration Mix)	Causes serious eye irritation.
	Sample 2 (Fuel Ethanol)	Causes serious eye irritation.

Symptoms related to the physical, chemical and toxicological characteristics

<b>Inhalation</b>	: Sample 1 (Calibration Mix)	Adverse symptoms may include the following: respiratory tract irritation coughing nausea or vomiting headache drowsiness/fatigue dizziness/vertigo unconsciousness reduced foetal weight increase in foetal deaths skeletal malformations
	Sample 2 (Fuel Ethanol)	Adverse symptoms may include the following: respiratory tract irritation coughing nausea or vomiting headache drowsiness/fatigue dizziness/vertigo unconsciousness
<b>Ingestion</b>	: Sample 1 (Calibration Mix)	Adverse symptoms may include the following: reduced foetal weight increase in foetal deaths skeletal malformations
	Sample 2 (Fuel Ethanol)	No specific data.
<b>Skin contact</b>	: Sample 1 (Calibration Mix)	Adverse symptoms may include the following: irritation dryness cracking reduced foetal weight increase in foetal deaths skeletal malformations
	Sample 2 (Fuel Ethanol)	Adverse symptoms may include the following: irritation redness



**SECTION 11: Toxicological information**

		dryness cracking
<b>Eye contact</b>	: Sample 1 (Calibration Mix)	Adverse symptoms may include the following: pain or irritation watering redness
	Sample 2 (Fuel Ethanol)	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**

<b>General</b>	: Sample 1 (Calibration Mix)	May cause damage to organs through prolonged or repeated exposure. Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis.
	Sample 2 (Fuel Ethanol)	May cause damage to organs through prolonged or repeated exposure. Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis.
<b>Carcinogenicity</b>	: Sample 1 (Calibration Mix)	No known significant effects or critical hazards.
	Sample 2 (Fuel Ethanol)	May cause cancer. Risk of cancer depends on duration and level of exposure.
<b>Mutagenicity</b>	: Sample 1 (Calibration Mix)	No known significant effects or critical hazards.
	Sample 2 (Fuel Ethanol)	May cause genetic defects.
<b>Teratogenicity</b>	: Sample 1 (Calibration Mix)	May damage the unborn child.
	Sample 2 (Fuel Ethanol)	No known significant effects or critical hazards.
<b>Developmental effects</b>	: Sample 1 (Calibration Mix)	No known significant effects or critical hazards.
	Sample 2 (Fuel Ethanol)	No known significant effects or critical hazards.
<b>Fertility effects</b>	: Sample 1 (Calibration Mix)	May damage fertility.
	Sample 2 (Fuel Ethanol)	No known significant effects or critical hazards.

**Toxicokinetics**

<b>Absorption</b>	: Sample 1 (Calibration Mix)	Not available.
	Sample 2 (Fuel Ethanol)	Not available.
<b>Distribution</b>	: Sample 1 (Calibration Mix)	Not available.
	Sample 2 (Fuel Ethanol)	Not available.
<b>Metabolism</b>	: Sample 1 (Calibration Mix)	Not available.
	Sample 2 (Fuel Ethanol)	Not available.
<b>Elimination</b>	: Sample 1 (Calibration Mix)	Not available.
	Sample 2 (Fuel Ethanol)	Not available.

## SECTION 11: Toxicological information

Other information : Not available.

## SECTION 12: Ecological information

### 12.1 Toxicity

Product/ingredient name	Result	Species	Exposure	
<b>Sample 1 (Calibration Mix)</b> Ethanol	Acute EC50 17.921 mg/l Marine water	Algae - Ulva pertusa	96 hours	
	Acute EC50 2000 µg/l Fresh water	Daphnia - Daphnia magna	48 hours	
	Acute LC50 25500 µg/l Marine water	Crustaceans - Artemia franciscana - Larvae	48 hours	
	Acute LC50 42000 µg/l Fresh water	Fish - Oncorhynchus mykiss	4 days	
	Chronic NOEC 4.995 mg/l Marine water	Algae - Ulva pertusa	96 hours	
	Chronic NOEC 0.375 ul/L Fresh water	Fish - Gambusia holbrooki - Larvae	12 weeks	
	n-Heptane	Acute LC50 375000 µg/l Fresh water	Fish - Oreochromis mossambicus	96 hours
		Methanol	Acute EC50 16.912 mg/l Marine water	Algae - Ulva pertusa
	Acute EC50 10000000 µg/l Fresh water		Daphnia - Daphnia magna	48 hours
	Acute LC50 2500000 µg/l Marine water		Crustaceans - Crangon crangon - Adult	48 hours
Acute LC50 100000 µg/l Fresh water	Fish - Pimephales promelas - Juvenile (Fledgling, Hatchling, Weanling)		96 hours	
<b>Sample 2 (Fuel Ethanol)</b> Ethanol	Chronic NOEC 9.96 mg/l Marine water	Algae - Ulva pertusa	96 hours	
	Acute EC50 17.921 mg/l Marine water	Algae - Ulva pertusa	96 hours	
	Acute EC50 2000 µg/l Fresh water	Daphnia - Daphnia magna	48 hours	
	Acute LC50 25500 µg/l Marine water	Crustaceans - Artemia franciscana - Larvae	48 hours	
	Acute LC50 42000 µg/l Fresh water	Fish - Oncorhynchus mykiss	4 days	
	Chronic NOEC 4.995 mg/l Marine water	Algae - Ulva pertusa	96 hours	
	Chronic NOEC 0.375 ul/L Fresh water	Fish - Gambusia holbrooki - Larvae	12 weeks	
	Gasoline	Acute EC50 56 mg/l	Algae	72 hours
		Acute LC50 119 mg/l	Fish	96 hours
	Gasoline, natural	Acute EC50 17.5 mg/l Marine water	Crustaceans - Artemia sp. - Nauplii	48 hours
Acute EC50 1.5 mg/l Marine water		Daphnia - Daphnia magna - Neonate	48 hours	

### 12.2 Persistence and degradability

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
<b>Sample 1 (Calibration Mix)</b> Ethanol	-	-	Readily
<b>Sample 2 (Fuel Ethanol)</b> Ethanol	-	-	Readily

### 12.3 Bioaccumulative potential

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
<b>Sample 1 (Calibration Mix)</b> Ethanol	-0.31	-	low
n-Heptane	4.66	-	high
Methanol	-0.77	-	low
<b>Sample 2 (Fuel Ethanol)</b> Ethanol	-0.31	-	low
Gasoline	2 to 7	-	high
Gasoline, natural	2.1 to 6	-	high

## SECTION 12: Ecological information

### 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. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

## SECTION 14: Transport information

	ADR/RID	IMDG	IATA
<b>14.1 UN number</b>	UN3316	UN3316	UN3316
<b>14.2 UN proper shipping name</b>	CHEMICAL KIT	CHEMICAL KIT	Chemical kit
<b>14.3 Transport hazard class(es)</b>	9 	9 	9 
<b>14.4 Packing group</b>	II	II	II
<b>14.5 Environmental hazards</b>	No.	No.	No.
<b>14.6 Special precautions for user</b>	<b>Transport within user's premises:</b> 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.	<b>Transport within user's premises:</b> 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.	<b>Transport within user's premises:</b> 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.

**SECTION 14: Transport information**

<p><b>Additional information</b></p>	<p><b>Hazard identification number</b> 90</p> <p><b>Limited quantity</b> 0</p> <p><b>Special provisions</b> 251 340</p> <p><b>Tunnel code</b> (E)</p>	<p><b>Emergency schedules (EmS)</b> F-A, _S-P_</p>	<p><b>Passenger and Cargo Aircraft</b> Quantity limitation: 10 kg Packaging instructions: 960</p> <p><b>Cargo Aircraft Only</b> Quantity limitation: 10 kg Packaging instructions: 960</p> <p><b>Limited Quantities - Passenger Aircraft</b> Quantity limitation: 1 kg Packaging instructions: Y960</p> <p><b>Remarks</b> Excepted Quantity</p>
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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

Product/ingredient name	Carcinogenic effects	Mutagenic effects	Developmental effects	Fertility effects
<p><b>Sample 1 (Calibration Mix)</b> Methanol</p>	-	-	Repr. 1B, H360D	Repr. 1B, H360F
<p><b>Sample 2 (Fuel Ethanol)</b> Gasoline Gasoline, natural</p>	<p>Carc. 1B, H350 Carc. 1B, H350</p>	<p>Muta. 1B, H340 Muta. 1B, H340</p>	<p>- -</p>	<p>- -</p>

**SECTION 15: Regulatory information**

**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
<b>Sample 1 (Calibration Mix)</b> Flam. Liq. 2, H225 Eye Irrit. 2, H319 Repr. 1B, H360FD STOT SE 3, H335 and H336 STOT RE 2, H373 Aquatic Chronic 2, H411	On basis of test data Calculation method Calculation method Calculation method Calculation method Calculation method
<b>Sample 2 (Fuel Ethanol)</b> Flam. Liq. 2, H225 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Muta. 1B, H340 Carc. 1B, H350 STOT SE 3, H335 and H336 STOT RE 2, H373 Aquatic Chronic 3, H412	On basis of test data Calculation method Calculation method Calculation method Calculation method Calculation method Calculation method Calculation method

**Full text of abbreviated H statements** :

<b>Sample 1 (Calibration Mix)</b>	
H225	Highly flammable liquid and vapour.
H301	Toxic if swallowed.
H304	May be fatal if swallowed and enters airways.
H311	Toxic in contact with skin.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H331	Toxic if inhaled.
H335	May cause respiratory irritation.
H335 and H336	May cause respiratory irritation. May cause drowsiness or dizziness.
H360FD	May damage fertility. May damage 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.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.
<b>Sample 2 (Fuel Ethanol)</b>	
H224	Extremely flammable liquid and vapour.
H225	Highly flammable liquid and vapour.
H304	May be fatal if swallowed and enters airways.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H331	Toxic if inhaled.
H335	May cause respiratory irritation.
H335 and H336	May cause respiratory irritation. May cause drowsiness or dizziness.

**SECTION 16: Other information**

H340 May cause genetic defects.  
 H350 May cause cancer.  
 H373 May cause cancer in contact with skin.  
 H411 May cause damage to organs through prolonged or repeated exposure.  
 H412 Toxic to aquatic life with long lasting effects.  
 H412 Harmful to aquatic life with long lasting effects.

**Full text of classifications [CLP/GHS] : Sample 1 (Calibration Mix)**

Acute Tox. 3, H301 ACUTE TOXICITY: ORAL - Category 3  
 Acute Tox. 3, H311 ACUTE TOXICITY: SKIN - Category 3  
 Acute Tox. 3, H331 ACUTE TOXICITY: INHALATION - Category 3  
 Aquatic Acute 1, H400 AQUATIC TOXICITY (ACUTE) - Category 1  
 Aquatic Chronic 1, H410 AQUATIC TOXICITY (CHRONIC) - Category 1  
 Aquatic Chronic 2, H411 AQUATIC TOXICITY (CHRONIC) - Category 2  
 Aquatic Chronic 3, H412 AQUATIC TOXICITY (CHRONIC) - Category 3  
 Asp. Tox. 1, H304 ASPIRATION HAZARD - Category 1  
 Eye Irrit. 2, H319 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2  
 Flam. Liq. 2, H225 FLAMMABLE LIQUIDS - Category 2  
 Repr. 1B, H360FD TOXIC TO REPRODUCTION [Fertility and Unborn child] - Category 1B  
 Skin Irrit. 2, H315 SKIN CORROSION/IRRITATION - Category 2  
 STOT RE 2, H373 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) [liver] - Category 2  
 STOT SE 1, H370 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) [central nervous system (CNS)] - Category 1  
 STOT SE 3, H335 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) [Respiratory tract irritation] - Category 3  
 STOT SE 3, H335 and H336 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) [Respiratory tract irritation and Narcotic effects] - Category 3

**Sample 2 (Fuel Ethanol)**

Acute Tox. 3, H331 ACUTE TOXICITY: INHALATION - Category 3  
 Aquatic Chronic 2, H411 AQUATIC TOXICITY (CHRONIC) - Category 2  
 Aquatic Chronic 3, H412 AQUATIC TOXICITY (CHRONIC) - Category 3  
 Asp. Tox. 1, H304 ASPIRATION HAZARD - Category 1  
 Carc. 1B, H350 CARCINOGENICITY - Category 1B  
 CARCINOGENICITY: SKIN - Category 1B  
 Eye Irrit. 2, H319 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2  
 Flam. Liq. 1, H224 FLAMMABLE LIQUIDS - Category 1  
 Flam. Liq. 2, H225 FLAMMABLE LIQUIDS - Category 2  
 Muta. 1B, H340 GERM CELL MUTAGENICITY - Category 1B  
 Skin Irrit. 2, H315 SKIN CORROSION/IRRITATION - Category 2  
 STOT RE 2, H373 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) [liver] - Category 2  
 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) [kidneys] - Category 2  
 STOT SE 3, H335 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) [Respiratory tract irritation] - Category 3  
 STOT SE 3, H335 and H336 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) [Respiratory tract irritation and Narcotic effects] - Category 3

**Full text of abbreviated R phrases : Sample 1 (Calibration Mix)**

R11- Highly flammable.  
 R23/24/25- Toxic by inhalation, in contact with skin and if swallowed.  
 R39/23/24/25- Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed.  
 R65- Harmful: may cause lung damage if swallowed.  
 R38- Irritating to 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.

**SECTION 16: Other information**

	Sample 2 (Fuel Ethanol)	R51/53- Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. R11- Highly flammable. R45- May cause cancer. R46- May cause heritable genetic damage. R65- Also harmful: may cause lung damage if swallowed.
<b>Full text of classifications [DSD/DPD]</b>	: Sample 1 (Calibration Mix)	F - Highly flammable T - Toxic Xn - Harmful Xi - Irritant
	Sample 2 (Fuel Ethanol)	N - Dangerous for the environment F - Highly flammable Carc. Cat. 2 - Carcinogen category 2 Muta. Cat. 2 - Mutagen category 2 Xn - Harmful
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