

# SAFETY DATA SHEET

## Reformate



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

#### 1.1 Product identifier

**Product name** : Reformate  
**Material uses** : Intermediate refinery stream  
**Index number** : 649-307-00-7  
**EC number** : 272-895-8  
**REACH Registration number**

Registration number	Legal entity
01-2119485808-20	-

**CAS number** : 68919-37-9

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

Not applicable.

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

**Manufacturer / Distributor** : Kuwait Petroleum Corporation  
P.O. Box 26565 Safat  
13126 Safat  
Kuwait  
Tel. +965 1858585, Fax 2423371/2467159/246

**e-mail address of person responsible for this SDS** : SDSinfo@Q8.com, communication preferably in English only.

#### 1.4 Emergency telephone number

**Middle East** : +44 (0) 1235 239 671  
**Global (English only)** : +44 (0) 1865 407 333



### SECTION 2: Hazards identification

#### 2.1 Classification of the substance or mixture

**Product definition** : UVCB

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

Flam. Liq. 1, H224  
Skin Irrit. 2, H315  
Muta. 1B, H340  
Carc. 1B, H350  
STOT SE 3, H336  
Asp. Tox. 1, H304  
Aquatic Chronic 2, H411

**Ingredients of unknown toxicity** : None.

**Ingredients of unknown ecotoxicity** : None.

#### Classification according to Directive 67/548/EEC [DSD]

F+; R12  
Carc. Cat. 2; R45  
Muta. Cat. 2; R46  
Xn; R65  
Xi; R38  
R67  
N; R51/53

Reformate

## SECTION 2: Hazards identification

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

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

### 2.2 Label elements

**Hazard pictograms** :



**Signal word** :

Danger

**Hazard statements** :

H224 Extremely flammable liquid and vapor.  
 H315 Causes skin irritation.  
 H340 May cause genetic defects.  
 H350 May cause cancer.  
 H336 May cause drowsiness and dizziness.  
 H304 May be fatal if swallowed and enters airways.  
 H411 Toxic to aquatic life with long lasting effects.

### Precautionary statements

**Prevention** :

P201 - Obtain special instructions before use.  
 P210 - Keep away from heat, sparks, open flames and hot surfaces. - No smoking.  
 P280 - Wear protective gloves or clothing and eye or face protection.

**Response** :

P301 - IF SWALLOWED:  
 P310 - Immediately call a POISON CENTER or physician.

**Storage** :

P403 - Store in a well-ventilated place.  
 P233 - Keep container tightly closed.

**Disposal** :

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

**Supplemental label elements** :

Not applicable.

### Special packaging requirements

**Containers to be fitted with child-resistant fastenings** :

Not applicable.

**Tactile warning of danger** :

Not applicable.

### 2.3 Other hazards

**Substance meets the criteria for PBT according to Regulation (EC) No. 1907/2006, Annex XIII** :

No.  
 PBT: Specified

**Substance meets the criteria for vPvB according to Regulation (EC) No. 1907/2006, Annex XIII** :

No.  
 vPvB: Specified

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

Hazardous concentrations of hydrogen sulphide (H<sub>2</sub>S) gas may accumulate in the vapour space of storage vessels. Standard procedures for opening or entering tanks, vessels or other containers must strictly be followed to avoid inhalation of this acutely toxic gas.

## SECTION 3: Composition/information on ingredients

**Substance/mixture** :

UVCB

Reformate

### SECTION 3: Composition/information on ingredients

Product/ingredient name	Identifiers	%	Classification		Type
			67/548/EEC	Regulation (EC) No. 1272/2008 [CLP]	
Naphtha (petroleum), full-range reformed	REACH #: 01-2119485808-20 EC: 272-895-8 CAS: 68919-37-9 Index: 649-307-00-7	100	F+; R12  Carc. Cat. 2; R45 Muta. Cat. 2; R46 Xn; R65 Xi; R38 R67 N; R51/53	Flam. Liq. 1, H224  Skin Irrit. 2, H315 Muta. 1B, H340 Carc. 1B, H350 STOT SE 3, H336 Asp. Tox. 1, H304 Aquatic Chronic 2, H411	[*]
toluene	EC: 203-625-9 CAS: 108-88-3 Index: 601-021-00-3	23.84	F; R11 Repr. Cat. 3; R63 Xn; R48/20, R65 Xi; R38 R67	Flam. Liq. 2, H225 Acute Tox. 4, H302 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Repr. 2, H361d STOT SE 3, H336 STOT RE 2, H373 Asp. Tox. 1, H304	[A]
benzene	EC: 200-753-7 CAS: 71-43-2 Index: 601-020-00-8	1.4	F; R11 Carc. Cat. 1; R45 Muta. Cat. 2; R46 T; R48/23/24/25 Xn; R65 Xi; R36/38	Flam. Liq. 2, H225 Acute Tox. 4, H302 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Muta. 1B, H340 Carc. 1A, H350 STOT RE 1, H372 Asp. Tox. 1, H304	[A]
n-hexane	EC: 203-777-6 CAS: 110-54-3 Index: 601-037-00-0	0.81	F; R11 Repr. Cat. 3; R62 Xn; R48/20, R65 Xi; R38 R67 N; R51/53	Flam. Liq. 2, H225 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Repr. 2, H361f STOT SE 3, H336 STOT RE 2, H373 Asp. Tox. 1, H304 Aquatic Chronic 2, H411	[A]
			<b>See Section 16 for the full text of the R-phrases declared above.</b>	<b>See Section 16 for the full text of the H statements declared above.</b>	

There are no additional ingredients present which, within the current knowledge of the supplier, are classified and contribute to the classification of the substance and hence require reporting in this section.

Type

- [\*] Substance
- [A] Constituent
- [B] Impurity
- [C] Stabilizing additive

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

### SECTION 4: First aid measures

#### 4.1 Description of first aid measures

**Eye contact**

- : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.

**SECTION 4: First aid measures**

- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If exposure to hydrogen sulphide is suspected or cannot be excluded, obtain medical attention IMMEDIATELY. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Skin contact** : Wash contaminated skin with soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Get medical attention immediately. Call a poison center or physician. 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. 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** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

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

- Eye contact** : Causes serious eye irritation.
- Inhalation** : Can cause central nervous system (CNS) depression. May cause drowsiness and dizziness.
- Skin contact** : Causes skin irritation.
- Ingestion** : Can cause central nervous system (CNS) depression. May be fatal if swallowed and enters airways. Irritating to mouth, throat and stomach.

**Over-exposure signs/symptoms**

- Eye contact** : Adverse symptoms may include the following:  
pain or irritation  
watering  
redness
- Inhalation** : Adverse symptoms may include the following:  
nausea or vomiting  
headache  
drowsiness/fatigue  
dizziness/vertigo  
unconsciousness
- Skin contact** : Adverse symptoms may include the following:  
irritation  
redness
- Ingestion** : Adverse symptoms may include the following:  
nausea or vomiting

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

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

Reformate

**SECTION 4: First aid measures****SECTION 5: Firefighting measures****5.1 Extinguishing media**

**Suitable extinguishing media** : Use dry chemical, CO<sub>2</sub>, water spray (fog) or foam.

**Unsuitable extinguishing media** : Do not use water jet.

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

**Hazards from the substance or mixture** : Extremely flammable liquid and vapor. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. The vapor/gas is heavier than air and will spread along the ground. Vapors 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.

**Hazardous thermal decomposition products** : Decomposition products may include the following materials:  
carbon dioxide  
carbon monoxide  
sulfur oxides  
Hydrogen sulphide

**5.3 Advice for firefighters**

**Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

**Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

**SECTION 6: Accidental release measures****6.1 Personal precautions, protective equipment and emergency procedures**

**For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

**For emergency responders** : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

**6.2 Environmental precautions**

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

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

**Small spill** : 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.

Reformate

**SECTION 6: Accidental release measures**

**Large spill** : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see section 1 for emergency contact information and section 13 for waste disposal.

**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**

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

**7.1 Precautions for safe handling**

**Protective measures** : Put on appropriate personal protective equipment (see Section 8). Hazardous concentrations of hydrogen sulphide (H<sub>2</sub>S) gas may accumulate in the vapour space of storage vessels. Standard procedures for opening or entering tanks, vessels or other containers must strictly be followed to avoid inhalation of this acutely toxic gas. 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 swallow. Avoid breathing vapor 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** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

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

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

**7.3 Specific end use(s)**

**Recommendations** : Not available.

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

## SECTION 8: Exposure controls/personal protection

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

### 8.1 Control parameters

#### Occupational exposure limits

Product/ingredient name	Exposure limit values
toluene	<b>EU OEL (Europe, 12/2009). Absorbed through skin. Notes: list of indicative occupational exposure limit values</b> TWA: 192 MG/M3 8 hour(s). TWA: 50 PPM 8 hour(s). STEL: 384 MG/M3 15 minute(s). STEL: 100 PPM 15 minute(s).
benzene	<b>EU OEL (Europe, 12/2009). Absorbed through skin.</b> TWA: 1 PPM 8 hour(s). TWA: 3.25 MG/M3 8 hour(s).
n-hexane	<b>EU OEL (Europe, 12/2009). Notes: list of indicative occupational exposure limit values</b> TWA: 72 MG/M3 8 hour(s). TWA: 20 PPM 8 hour(s).

**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 European Standard EN 689 for methods for the assessment of exposure by inhalation to chemical agents and national guidance documents for methods for the determination of hazardous substances.

#### Derived effect levels

No DELs available.

#### Predicted effect concentrations

No PECs available.

### 8.2 Exposure controls

**Appropriate engineering controls** : Product may release hydrogen sulphide: a specific assessment of inhalation risks from the presence of hydrogen sulphide in tank headspaces, confined spaces, product residue, tank waste and waste water and unintentional releases should be made to help determine controls appropriate to local circumstances. 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, vapor 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.

#### 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. Wear suitable gloves tested to EN374.

**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.

Reformate

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

- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

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

- Physical state** : Liquid.
- Appearance** : Clear.
- Color** : Colorless to light yellow.
- Odor** : Characteristic.
- Odor threshold** : Not applicable.
- pH** : 7
- Melting point/freezing point** : <-50°C
- Initial boiling point and boiling range** : 27 to 187°C
- Flash point** : Closed cup: <-40°C [ASTM D56]
- Evaporation rate** : Not available.
- Flammability (solid, gas)** : Extremely flammable in the presence of the following materials or conditions: open flames, sparks and static discharge.
- Upper/lower flammability or explosive limits** : Lower: 1.4%  
Upper: 7.6%
- Vapor pressure** : 35.1 to 100.2 kPa [20°C]
- Vapor density** : >3 [Air = 1]
- Relative density** : 0.7
- Solubility(ies)** : Insoluble in the following materials: cold water and hot water.
- Dispersibility properties** : Not dispersible in the following materials: cold water and hot water.
- Partition coefficient: n-octanol/water** : Not available.
- Auto-ignition temperature** : >400°C
- Decomposition temperature** : Not available.
- Viscosity (40°C)** : <1 cSt
- Explosive properties** : Not applicable.
- Oxidizing properties** : Not applicable.

**9.2 Other information**

No additional information.

**SECTION 10: Stability and reactivity**

- 10.1 Reactivity** : No specific test data related to reactivity available for this product or its ingredients.
- 10.2 Chemical stability** : The product is stable.
- 10.3 Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.

Reformate

## SECTION 10: Stability and reactivity

**10.4 Conditions to avoid** : Avoid all possible sources of ignition (spark or flame). Do not pressurize, 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.

**10.5 Incompatible materials** : Reactive or incompatible with the following materials:  
oxidizing materials

**10.6 Hazardous decomposition products** : Decomposition products may include the following materials:  
sulfur oxides  
Hydrogen sulphide

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

#### Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Naphtha (petroleum), full-range reformed	LC50 Inhalation Vapor	Rat - Male, Female	>5610 mg/m <sup>3</sup>	4 hours
	LC50 Inhalation Vapor	Rat	49 g/m <sup>3</sup>	4 hours
toluene	LD50 Oral	Rat	636 mg/kg	-
	LD50 Oral	Rat	930 mg/kg	-
benzene	LC50 Inhalation Gas.	Rat	48000 ppm	4 hours
n-hexane	LD50 Oral	Rat	15840 mg/kg	-

**Conclusion/Summary** : Not available.

#### Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Naphtha (petroleum), full-range reformed	Skin - Edema	Rabbit	3	4 hours	72 hours
	Eyes - Edema of the conjunctivae	Rabbit	0.33	4 hours	72 hours
toluene	Eyes - Mild irritant	Rabbit	-	0.5 minutes	-
	Eyes - Mild irritant	Rabbit	-	100 milligrams	-
	Eyes - Mild irritant	Rabbit	-	870 Micrograms	-
	Eyes - Severe irritant	Rabbit	-	24 hours 2 milligrams	-
benzene	Skin - Mild irritant	Pig	-	24 hours 250 microliters	-
	Skin - Mild irritant	Rabbit	-	435 milligrams	-
	Skin - Moderate irritant	Rabbit	-	24 hours 20 milligrams	-
	Skin - Moderate irritant	Rabbit	-	500 milligrams	-
	Eyes - Moderate irritant	Rabbit	-	88 milligrams	-
	Eyes - Severe irritant	Rabbit	-	24 hours 2 milligrams	-
n-hexane	Skin - Mild irritant	Rat	-	8 hours 60 microliters	-
	Skin - Mild irritant	Rabbit	-	24 hours 15 milligrams	-
	Skin - Moderate irritant	Rabbit	-	24 hours 20 milligrams	-
	Eyes - Mild irritant	Rabbit	-	10 milligrams	-

**Conclusion/Summary** : Not available.

#### Sensitization

**Conclusion/Summary** : Not available.

#### Mutagenicity

Reformate

**SECTION 11: Toxicological information**

Product/ingredient name	Test	Experiment	Result
Naphtha (petroleum), full-range reformed	471 Bacterial Reverse Mutation Test	Experiment: In vitro Subject: Bacteria	Negative
	475 Mammalian Bone Marrow Chromosomal Aberration Test	Experiment: In vivo Subject: Mammalian-Animal	Negative

**Conclusion/Summary** : Not available.

**Carcinogenicity**

Product/ingredient name	Result	Species	Dose	Exposure
Naphtha (petroleum), full-range reformed	Positive - Dermal - TC	Mouse - Male	5 mg/kg	102 weeks; 3 days per week

**Conclusion/Summary** : Not available.

**Reproductive toxicity**

Product/ingredient name	Maternal toxicity	Fertility	Development toxin	Species	Dose	Exposure
Naphtha (petroleum), full-range reformed	Negative	Negative	Negative	Rat - Male, Female	Inhalation: >=20000 mg/m <sup>3</sup>	7 weeks; 6 hours per day

**Conclusion/Summary** : Not available.

**Teratogenicity**

Product/ingredient name	Result	Species	Dose	Exposure
Naphtha (petroleum), full-range reformed	Negative - Inhalation	Rat	23900 mg/m <sup>3</sup>	20 days; 6 hours per day

**Conclusion/Summary** : Not available.

**Specific target organ toxicity (single exposure)**

Product/ingredient name	Category	Route of exposure	Target organs
Naphtha (petroleum), full-range reformed toluene n-hexane	Category 3	Not determined	Narcotic effects
	Category 3	Not determined	Narcotic effects
	Category 3	Not determined	Narcotic effects

**Specific target organ toxicity (repeated exposure)**

Product/ingredient name	Category	Route of exposure	Target organs
toluene benzene n-hexane	Category 2	Not determined	Not determined
	Category 1	Not determined	Not determined
	Category 2	Not determined	Not determined

**Aspiration hazard**

Product/ingredient name	Result
Naphtha (petroleum), full-range reformed toluene benzene n-hexane	ASPIRATION HAZARD - Category 1 ASPIRATION HAZARD - Category 1 ASPIRATION HAZARD - Category 1 ASPIRATION HAZARD - Category 1

**Information on the likely routes of exposure** : Routes of entry anticipated:Inhalation.  
Routes of entry not anticipated:Oral, Dermal.

**Potential acute health effects**

- Eye contact** : Causes serious eye irritation.
- Inhalation** : Can cause central nervous system (CNS) depression. May cause drowsiness and dizziness.
- Skin contact** : Causes skin irritation.
- Ingestion** : Can cause central nervous system (CNS) depression. May be fatal if swallowed and enters airways. Irritating to mouth, throat and stomach.

Reformate

## SECTION 11: Toxicological information

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

- Eye contact** : Adverse symptoms may include the following:  
 pain or irritation  
 watering  
 redness
- Inhalation** : Adverse symptoms may include the following:  
 nausea or vomiting  
 headache  
 drowsiness/fatigue  
 dizziness/vertigo  
 unconsciousness
- Skin contact** : Adverse symptoms may include the following:  
 irritation  
 redness
- Ingestion** : Adverse symptoms may include the following:  
 nausea or vomiting

### 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

Product/ingredient name	Result	Species	Dose	Exposure
Naphtha (petroleum), full-range reformed	Sub-acute NOEL Oral	Rat - Male	<500 mg/kg	28 days; 5 days per week
	Sub-acute NOAEL Dermal	Rat - Male, Female	375 mg/kg	28 days; 5 days per week
	Sub-chronic NOAEL Inhalation Vapor	Rat - Male, Female	10000 mg/m <sup>3</sup>	90 days; 5 days per week

- Conclusion/Summary** : Not available.
- General** : No known significant effects or critical hazards.
- Carcinogenicity** : May cause cancer. Risk of cancer depends on duration and level of exposure.
- Mutagenicity** : May cause genetic defects.
- Teratogenicity** : No known significant effects or critical hazards.
- Developmental effects** : No known significant effects or critical hazards.
- Fertility effects** : No known significant effects or critical hazards.

- Metabolism** : Rapidly metabolized.
- Elimination** : Excreted via the urine.

- Other information** : Not available.

Reformate

## SECTION 12: Ecological information

### 12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
Naphtha (petroleum), full-range reformed	Acute EC50 3.7 mg/l Fresh water	Algae	96 hours
	Acute EC50 4.5 mg/l Fresh water	Daphnia	48 hours
toluene	Acute LC50 10 mg/l Fresh water	Fish	96 hours
	Chronic NOEC 2.6 mg/l Fresh water	Fish	14 days
	Acute EC50 12500 ug/L Fresh water	Algae - Pseudokirchneriella subcapitata	72 hours
	Acute EC50 11600 ug/L Fresh water	Crustaceans - Gammarus pseudolimnaeus - Adult - 9 mm - 0.017 g	48 hours
	Acute EC50 6000 ug/L Fresh water	Daphnia - Daphnia magna - Juvenile (Fledgling, Hatchling, Weanling)	48 hours
	Acute LC50 5500 ug/L Fresh water	Fish - Oncorhynchus kisutch - Fry - 1 g	96 hours
benzene	Chronic NOEC 1000 ug/L Fresh water	Daphnia - Daphnia magna - <=24 hours	21 days
	Acute EC50 29000 ug/L Fresh water	Algae - Pseudokirchneriella subcapitata	72 hours
	Acute EC50 >1360000 ug/L Fresh water	Algae - Scenedesmus abundans	96 hours
	Acute EC50 9230 ug/L Fresh water	Daphnia - Daphnia magna - Neonate - <=24 hours	48 hours
	Acute LC50 21000 ug/L Marine water	Crustaceans - Artemia salina - Nauplii	48 hours
	Acute LC50 5.28 ul/L Fresh water	Fish - Oncorhynchus gorbuscha - Fry	96 hours
	Chronic NOEC 1.5 to 5.4 ul/L Marine water	Fish - Morone saxatilis - Juvenile (Fledgling, Hatchling, Weanling) - 18.1 cm - 3.39 g	4 weeks
	Acute LC50 2500 ug/L Fresh water	Fish - Pimephales promelas - 31 days - 20.4 mm - 0.123 g	96 hours

**Conclusion/Summary** : Not available.

### 12.2 Persistence and degradability

**Conclusion/Summary** : Not available.

### 12.3 Bioaccumulative potential

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
toluene	2.69	-	low
benzene	2.13	-	low
n-hexane	3.9	-	high

### 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** : No.  
PBT: Specified

**vPvB** : No.  
vPvB: Specified

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

Reformate

## SECTION 13: Disposal considerations

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

### 13.1 Waste treatment methods

#### Product

**Methods of disposal** : The generation of waste should be avoided or minimized wherever possible. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. 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.

**Hazardous waste** : Yes.

#### European waste catalogue (EWC)





Waste code	Waste designation
13 07 02*	gasoline

#### Packaging

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

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

## SECTION 14: Transport information

	ADR/RID	ADN/ADNR	IMDG	IATA
<b>14.1 UN number</b>	UN1993	UN1993	UN1993	UN1993
<b>14.2 UN proper shipping name</b>	FLAMMABLE LIQUID, N.O.S. (Toluene)	FLAMMABLE LIQUID, N.O.S. (Toluene)	FLAMMABLE LIQUID, N.O.S. (Toluene)	FLAMMABLE LIQUID, N.O.S. (Toluene)
<b>14.3 Transport hazard class(es)</b>	3 	3 	3 	3 
<b>14.4 Packing group</b>	I	I	I	I
<b>14.5 Environmental hazards</b>	No.	Yes.	No.	No.
<b>14.6 Special precautions for user</b>	Not available.	Not available.	Not available.	Not available.
<b>Additional information</b>	<b>Tunnel code</b> (D/E)	-	-	-

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

Reformate

## 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 authorization

###### 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

**National Inventory List** : **Australia inventory (AICS)**: All components are listed or exempted.  
**China inventory (IECSC)**: All components are listed or exempted.  
**Japan inventory**: All components are listed or exempted.  
**Korea inventory**: All components are listed or exempted.  
**New Zealand Inventory of Chemicals (NZIoC)**: All components are listed or exempted.  
**Philippines inventory (PICCS)**: All components are listed or exempted.  
**United States inventory (TSCA 8b)**: All components are listed or exempted.  
**Europe inventory**: All components are listed or exempted.  
**Canada inventory**: All components are listed or exempted.

**Black List Chemicals** : Not listed

**Priority List Chemicals** : 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
Naphtha (petroleum), full-range reformed	Carc. 1B, H350	Muta. 1B, H340	-	-
toluene	-	-	Repr. 2, H361d	-
benzene	Carc. 1A, H350	Muta. 1B, H340	-	-
n-hexane	-	-	-	Repr. 2, H361f

##### International regulations

**Chemical Weapons Convention List Schedule I Chemicals** : Not listed

**Chemical Weapons Convention List Schedule II Chemicals** : Not listed

**Chemical Weapons Convention List Schedule III Chemicals** : Not listed

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

Reformate

## SECTION 16: Other information

Indicates information that has changed from previously issued version.

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

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

Classification	Justification
Flam. Liq. 1, H224	Expert judgment
Skin Irrit. 2, H315	Expert judgment
Muta. 1B, H340	Expert judgment
Carc. 1B, H350	Expert judgment
STOT SE 3, H336	Expert judgment
Asp. Tox. 1, H304	Expert judgment
Aquatic Chronic 2, H411	Expert judgment

**Full text of abbreviated H statements** :

- H224 Extremely flammable liquid and vapor.
- H225 Highly flammable liquid and vapor.
- H302 Harmful if swallowed.
- H304 May be fatal if swallowed and enters airways.
- H315 Causes skin irritation.
- H319 Causes serious eye irritation.
- H336 May cause drowsiness and dizziness.
- H340 May cause genetic defects.
- H350 May cause cancer.
- H361d Suspected of damaging the unborn child.
- H361f Suspected of damaging fertility.
- H372 Causes damage to organs through prolonged or repeated exposure.
- H373 May cause damage to organs through prolonged or repeated exposure.
- H411 Toxic to aquatic life with long lasting effects.

**Full text of classifications [CLP/GHS]** :

- Acute Tox. 4, H302 ACUTE TOXICITY: ORAL - Category 4
- Aquatic Chronic 2, H411 AQUATIC TOXICITY (CHRONIC) - Category 2
- Asp. Tox. 1, H304 ASPIRATION HAZARD - Category 1
- Carc. 1A, H350 CARCINOGENICITY - Category 1A
- Carc. 1B, H350 CARCINOGENICITY - 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
- Repr. 2, H361d TOXIC TO REPRODUCTION [Unborn child] - Category 2
- Repr. 2, H361f TOXIC TO REPRODUCTION [Fertility] - Category 2
- Skin Irrit. 2, H315 SKIN CORROSION/IRRITATION - Category 2
- STOT RE 1, H372 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 1
- STOT RE 2, H373 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2
- STOT SE 3, H336 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) [Narcotic effects] - Category 3

**Full text of abbreviated R phrases** :

- R12- Extremely flammable.
- R11- Highly flammable.
- R45- May cause cancer.
- R46- May cause heritable genetic damage.
- R62- Possible risk of impaired fertility.
- R63- Possible risk of harm to the unborn child.
- R48/23/24/25- Also toxic: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed.
- R48/20- Also harmful: danger of serious damage to health by prolonged exposure through inhalation.
- R65- Also harmful: may cause lung damage if swallowed.
- R38- Irritating to skin.
- R36/38- Irritating to eyes and skin.

Reformat

## SECTION 16: Other information

R67- Vapors may cause drowsiness and dizziness.  
 R51/53- Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**Full text of classifications [DSD/DPD]** : F+ - Extremely flammable  
 F - Highly flammable  
 Carc. Cat. 1 - Carcinogen category 1  
 Carc. Cat. 2 - Carcinogen category 2  
 Muta. Cat. 2 - Mutagen category 2  
 Repr. Cat. 3 - Toxic to reproduction category 3  
 T - Toxic  
 Xn - Harmful  
 Xi - Irritant  
 N - Dangerous for the environment

**Date of printing** : 1/10/2012.

**Date of issue/ Date of revision** : 1/10/2012.

**Date of previous issue** : No previous validation.

**Version** : 1

**Prepared by** : Kuwait Petroleum Research & Technology B.V., The Netherlands

**Notice to reader**

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.