Hydrogenated Pyrolysis Gas (HPG) Hydrogenated C5-C8

Version 1.2 Revision Date 2020-03-04

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

Product information

Product Name : Hydrogenated Pyrolysis Gas (HPG) Hydrogenated C5-C8

Company : Qatar Chemical Company LTD (QChem)
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Al-Dafna (Zone 61)
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Doha, Qatar

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Technical Information: (+974) 4477-0047
Responsible Party: Product Safety Group
Email: MSDSInquiry@qchem.com.qa

Local : CHEVRON PHILLIPS CHEMICALS ASIA PTE. LTD.
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Transport:
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EUROPE: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
Mexico CHEMTREC 01-800-681-9531 (24 hours)
South America SOS-Cotec Inside Brazil: 0800.111.767 Outside Brazil: +55.19.3467.1600
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Responsible Department : Product Safety and Toxicology Group
E-mail address : SDS@CPChem.com
Website : www.CPChem.com

SECTION 2: Hazards identification

Classification of the substance or mixture
Standards for classification and labeling of chemical substances and material safety data sheet (ministry of employment and labor public notice No. 2016-19) (GHS 2011)

Classification

: Flammable liquids, Category 2
Skin corrosion/irritation, Category 2
Serious eye damage/eye irritation, Category 2
Germ cell mutagenicity, Category 1B
Carcinogenicity, Category 1A
Reproductive toxicity, Category 1B
Specific target organ toxicity - single exposure, Category 3, Respiratory system, Central nervous system
Specific target organ toxicity - repeated exposure, Category 1
Aspiration hazard, Category 1
Long-term (chronic) aquatic hazard, Category 2

Labeling

Symbol(s) :

Signal Word : Danger

Hazard Statements : H225: Highly flammable liquid and vapor.
H304: May be fatal if swallowed and enters airways.
H315: Causes skin irritation.
H319: Causes serious eye irritation.
H335: May cause respiratory irritation.
H336: May cause drowsiness or dizziness.
H340: May cause genetic defects.
H350: May cause cancer.
H360: May damage fertility or the unborn child.
H372: Causes damage to organs through prolonged or repeated exposure.
H411: Toxic to aquatic life with long lasting effects.

Precautionary Statements : **Prevention:**
P201: Obtain special instructions before use.
P202: Do not handle until all safety precautions have been read and understood.
P210: Keep away from heat/ sparks/ open flames/ hot surfaces. No smoking.
P233: Keep container tightly closed.
P240: Ground/bond container and receiving equipment.
P241: Use explosion-proof electrical/ ventilating/ lighting/ equipment.
P242: Use only non-sparking tools.
P243: Take precautionary measures against static discharge.
P260: Do not breathe dust/fume/gas/mist/vapor/spray.
P264: Wash the contact area thoroughly after handling.
P270: Do not eat, drink or smoke when using this product.
P271: Use only outdoors or in a well-ventilated area.
P273: Avoid release to the environment.

P280: Wear protective gloves/ protective clothing/ eye protection/ face protection.
Response:
P301 + P310: IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician.
P303 + P361 + P353: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P304 + P340 + P312: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/ physician if you feel unwell.
P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313: IF exposed or concerned: Get medical advice/ attention.
P321: Specific treatment (see supplemental first aid instructions on this label).
P331: Do NOT induce vomiting.
P332 + P313: If skin irritation occurs: Get medical advice/ attention.
P337 + P313: If eye irritation persists: Get medical advice/ attention.
P362 + P364: Take off contaminated clothing and wash it before reuse.
P370 + P378: In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
P391: Collect spillage.
Storage:
P403 + P233: Store in a well-ventilated place. Keep container tightly closed.
P403 + P235: Store in a well-ventilated place. Keep cool.
P405: Store locked up.
Disposal:
P501: Dispose of contents and container according to wastes control act.

SECTION 3: Composition/information on ingredients

Synonyms : Benzene Concentrate
Hexane, Light hydrotreated distillate
BTX Concentrate

Molecular formula : UVCB

Chemical name	CAS-No.	Concentration	KECI Number
Gasoline, pyrolysis, hydrogenated	94114-03-1	100%	KE-17570
Benzene	71-43-2	40 % - 50%	KE-02150
n-Pentane	109-66-0	6 % - 10%	KE-27968
Cyclopentane	287-92-3	5 % - 7%	KE-09297

Toluene	108-88-3	3 % - 5%	KE-33936
n-hexane	110-54-3	2 % - 4%	KE-18626
Cyclohexane	110-82-7	2 % - 4%	KE-18562
Methylcyclopentane	96-37-7	2 % - 3%	KE-23724
Isopentane	78-78-4	1 % - 2%	KE-23537
Ethylbenzene	100-41-4	0.5 % - 2%	KE-13532

SECTION 4: First aid measures

General advice : Move out of dangerous area. Show this material safety data sheet to the doctor in attendance. Material may produce a serious, potentially fatal pneumonia if swallowed or vomited.

If inhaled : Consult a physician after significant exposure. If unconscious, place in recovery position and seek medical advice.

In case of skin contact : If skin irritation persists, call a physician. If on skin, rinse well with water. If on clothes, remove clothes.

In case of eye contact : Immediately flush eye(s) with plenty of water. Remove contact lenses. Protect unharmed eye. Keep eye wide open while rinsing. If eye irritation persists, consult a specialist.

If swallowed : Keep respiratory tract clear. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician. Take victim immediately to hospital.

SECTION 5: Firefighting measures

Flash point : -6.7°C (19.9°F)
estimated

Autoignition temperature : 510°C (950°F)
estimated

Suitable extinguishing media : Alcohol-resistant foam. Carbon dioxide (CO2). Dry chemical.

Unsuitable extinguishing media : High volume water jet.

Specific hazards during fire fighting : Do not allow run-off from fire fighting to enter drains or water courses.

Special protective equipment for fire-fighters : Wear self-contained breathing apparatus for firefighting if necessary.

Further information : Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in

accordance with local regulations. For safety reasons in case of fire, cans should be stored separately in closed containments. Use a water spray to cool fully closed containers.

Fire and explosion protection	:	Do not spray on an open flame or any other incandescent material. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors). Use only explosion-proof equipment. Keep away from open flames, hot surfaces and sources of ignition.

SECTION 6: Accidental release measures

Personal precautions	:	Use personal protective equipment. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.
Environmental precautions	:	Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities.
Methods for cleaning up	:	Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

SECTION 7: Handling and storage

Handling

Advice on safe handling	:	Avoid formation of aerosol. Do not breathe vapors/dust. Avoid exposure - obtain special instructions before use. Avoid contact with skin and eyes. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Take precautionary measures against static discharges. Provide sufficient air exchange and/or exhaust in work rooms. Open drum carefully as content may be under pressure. Dispose of rinse water in accordance with local and national regulations.
Advice on protection against fire and explosion	:	Do not spray on an open flame or any other incandescent material. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors). Use only explosion-proof equipment. Keep away from open flames, hot surfaces and sources of ignition.

Storage

Requirements for storage areas and containers	:	No smoking. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Observe label precautions. Electrical installations / working materials must comply with the technological safety standards.

SECTION 8: Exposure controls/personal protection

Ingredients with workplace control parameters

KR

Components	Basis	Value	Control parameters	Note
Benzene	KR OEL	TWA	0.5 ppm,	carc 1A, muta 1B, Skin,
	KR OEL	STEL	2.5 ppm,	carc 1A, muta 1B, Skin,
	KR PEL	TWA	0.5 ppm,	
	KR PEL	STEL	2.5 ppm,	
n-Pentane	KR OEL	TWA	600 ppm,	
	KR OEL	STEL	750 ppm,	
Cyclopentane	KR OEL	TWA	600 ppm,	
Toluene	KR OEL	TWA	50 ppm,	repr 2,
	KR OEL	STEL	150 ppm,	repr 2,
n-hexane	KR OEL	TWA	50 ppm,	repr 2, Skin,
	KR PEL	TWA	50 ppm,	
Cyclohexane	KR OEL	TWA	200 ppm,	
Methylcyclopentane	KR OEL	TWA	500 ppm, 1,800 mg/m3	
	KR OEL	STEL	1,000 ppm, 3,600 mg/m3	
Ethylbenzene	KR OEL	TWA	100 ppm,	carc 2,
	KR OEL	STEL	125 ppm,	carc 2,

carc 1A Sufficient evidence of carcinogenicity in humans
carc 2 Limited evidence of carcinogenicity in humans or animals, which is not sufficiently convincing to place the substance in Category 1
muta 1B Substances which should be regarded as if they induce heritable mutations in the germ cells of humans
repr 2 Suspected human reproductive toxicant
Skin Substances designated by 'Skin' may be absorbed into the bloodstream through the skin, mucous membrane and eye and contribute to the overall effect. (Skin notation does not apply to the skin irritant)

KR

Substance name	CAS-No.	Control parameters	Sampling time	Update

Engineering measures

Adequate ventilation to control airborned concentrations below the exposure guidelines/limits. Consider the potential hazards of this material (see Section 2), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

Personal protective equipment

Respiratory protection : Wear a supplied-air NIOSH approved respirator unless ventilation or other engineering controls are adequate to maintain minimal oxygen content of 19.5% by volume under normal atmospheric pressure. Wear a NIOSH approved respirator that provides protection when working with this material if exposure to harmful levels of airborne material may occur, such as:. Air-Purifying Respirator for Organic Vapors. Use a positive pressure, air-supplying respirator if there is potential for uncontrolled release, exposure levels are not known, or other circumstances where air-purifying respirators may not provide adequate protection.

Hand protection : The suitability for a specific workplace should be discussed with the producers of the protective gloves. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time. Gloves should be discarded and replaced if there

		is any indication of degradation or chemical breakthrough.
Eye protection	:	Eye wash bottle with pure water. Tightly fitting safety goggles.
Skin and body protection	:	Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place. Wear as appropriate:. Flame retardant antistatic protective clothing. Workers should wear antistatic footwear.
Hygiene measures	:	When using do not eat or drink. When using do not smoke. Wash hands before breaks and at the end of workday.

SECTION 9: Physical and chemical properties

Information on basic physical and chemical properties

Appearance

Physical state	:	Liquid
Color	:	Colorless
Odor	:	Mild

Safety data

Flash point	:	-6.7°C (19.9°F) estimated
Lower explosion limit	:	1.2 %(V)
Upper explosion limit	:	7.4 %(V)
Oxidizing properties	:	No
Autoignition temperature	:	510°C (950°F) estimated
Molecular formula	:	UVCB
pH	:	Not applicable
Pour point	:	No data available
Boiling point/boiling range	:	66-232°C (151-450°F)
Vapor pressure	:	3.30 PSI at 38°C (100°F)
Relative density	:	0.84 at 15.6 °C (60.1 °F)
Water solubility	:	Negligible
Partition coefficient: n-octanol/water	:	No data available
Viscosity, kinematic	:	0.5 cSt at 38°C (100°F)

Relative vapor density : No data available

Evaporation rate : No data available

SECTION 10: Stability and reactivity

Chemical stability : This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

Possibility of hazardous reactions

Hazardous reactions : Further information: No decomposition if stored and applied as directed.

Hazardous reactions: Vapors may form explosive mixture with air.

Conditions to avoid : Heat, flames and sparks.

Other data : No decomposition if stored and applied as directed.

SECTION 11: Toxicological information

Hydrogenated Pyrolysis Gas (HPG) Hydrogenated C5-C8
Acute oral toxicity : LD50 Oral: > 2,000 mg/kg
Species: Rat
Method: Acute toxicity estimate
Information given is based on data obtained from similar substances.

Hydrogenated Pyrolysis Gas (HPG) Hydrogenated C5-C8
Acute inhalation toxicity : LC50: > 20 mg/l
Exposure time: 4 h
Species: Rat
Test atmosphere: vapor
Method: Acute toxicity estimate

Hydrogenated Pyrolysis Gas (HPG) Hydrogenated C5-C8
Acute dermal toxicity : LD50 Dermal: > 5,000 mg/kg
Species: Rabbit
Information given is based on data obtained from similar substances.

Hydrogenated Pyrolysis Gas (HPG) Hydrogenated C5-C8
Skin irritation : May cause skin irritation in susceptible persons.

Hydrogenated Pyrolysis Gas (HPG) Hydrogenated C5-C8
Eye irritation : May irritate eyes.

Hydrogenated Pyrolysis Gas (HPG) Hydrogenated C5-C8

Sensitization : No adverse effects expected. Information given is based on data obtained from similar substances.

Repeated dose toxicity

Benzene : Species: Rat, female
Sex: female
Application Route: oral gavage
Dose: 0, 25, 50, 100 mg/kg
Exposure time: 103 wk
Number of exposures: 5 d/wk
NOEL: < 25 mg/kg
Lowest observable effect level: 25 mg/kg

Species: Rat, male
Sex: male
Application Route: oral gavage
Dose: 0, 50, 100, 200 mg/kg
Exposure time: 103 wk
Number of exposures: 5 d/wk
NOEL: < 50 mg/kg
Lowest observable effect level: 50 mg/kg

Species: Mouse
Application Route: oral gavage
Dose: 0, 25, 50,100 mg/kg
Exposure time: 103 wk
NOEL: < 25 mg/kg

n-Pentane Species: Rat, Male and female
Sex: Male and female
Application Route: inhalation (gas)
Dose: 0, 5000, 10,000, 20,000 mg/m3
Exposure time: 13 wk
Number of exposures: 6 h/d, 5 d/wk
NOEL: 20,000 mg/m3
Method: OECD Test Guideline 413

Cyclopentane Species: Rat, males
Sex: males
Dose: 0, 0.22, 1.12, 5.29 mg/l
Exposure time: 28 DAYS
Number of exposures: 6 h/d
NOEL: 1.12 mg/l
Lowest observable effect level: 5.29 mg/l

Species: Rat, females
Sex: females
Dose: 0, 0.22, 1.12, 5.29 mg/l
Exposure time: 28 DAYS
Number of exposures: 6 h/d
NOEL: 5.29 mg/l
Lowest observable effect level: > 5.29 mg/l

Toluene Species: Rat
Application Route: Inhalation
Dose: 0, 100, 625, 1250, 3000 ppm
Exposure time: 15 wk
Number of exposures: 6.5 h/d, 5 d/wk

	NOEL: 625 ppm Species: Mouse Application Route: Inhalation Dose: 0, 100, 625, 1250, 3000 ppm Exposure time: 14 wk Number of exposures: 6.5 h/d, 5 d/wk NOEL: 100 ppm
n-hexane	Species: Rat, male Sex: male Application Route: Inhalation Dose: 3,000 ppm Exposure time: 16 wks Number of exposures: 12 h/d Lowest observable effect level: 3,000 ppm Target Organs: Peripheral nervous system Species: Mouse, female Sex: female Application Route: Inhalation Dose: 500, 1,000, 4,000, 10,000 ppm Exposure time: 13 wks Number of exposures: 6h or 22h (1,000 ppm)/ 5d/wk Lowest observable effect level: 500 ppm Target Organs: Nose Species: Mouse, male Sex: male Application Route: Inhalation Dose: 500, 1,000, 4000, 10,000 ppm Exposure time: 13 wks Number of exposures: 6h or 22h (1,000 ppm)/d, 5d/wk NOEL: 500 ppm Lowest observable effect level: 1,000 ppm Target Organs: Nose Species: Rat, male Sex: male Application Route: oral gavage Dose: 568, 1,135, 3,973 mg/kg bw/day Exposure time: 90 or 120 days Number of exposures: Daily or 5d/wk (120-d study) NOEL: 568 mg/kg bw/day Lowest observable effect level: 1135 mg/kg bw/day
Cyclohexane	Species: Rat Application Route: Inhalation Dose: 0, 500, 2000, 7000 ppm Exposure time: 90 day Number of exposures: 6 h/d, 5 d/wk NOEL: 2000 ppm

Species: Rat, Male and female
Sex: Male and female
Application Route: Inhalation
Dose: 0, 500, 2,000, 7000 ppm
Exposure time: 13-14 wk
Number of exposures: 6 hr/d, 5 d/wk
NOEL: 7000 ppm

Species: Mouse, Male and female
Sex: Male and female
Application Route: Inhalation
Dose: 0, 500, 2000, 7000 ppm
Exposure time: 13-14 wk
Number of exposures: 6 hr/d, 5 d/wk
NOEL: 2000 ppm
Target Organs: Blood

Isopentane

Species: Rat, male and female
Sex: male and female
Application Route: Inhalation
Dose: 668, 2220, 6646 ppm
Exposure time: 13 wk
Number of exposures: 6 h/d, 5 d/wk
NOEL: > 2220 ppm
Lowest observable effect level: > = 6646 ppm
Method: OECD Guideline 413
Target Organs: Kidney
Information given is based on data obtained from similar substances.

Ethylbenzene

Species: Rat, male
Sex: male
Application Route: Inhalation
Dose: 200, 400, 600, 800 ppm
Exposure time: 13 weeks
Number of exposures: 6 hours/day, 6 days/week
NOEL: 200 ppm
Test substance: yes
Target Organs: Ototoxicity

Hydrogenated Pyrolysis Gas (HPG) Hydrogenated C5-C8
Genotoxicity in vitro : Remarks: May cause genetic defects., Information refers to the main ingredient.

Hydrogenated Pyrolysis Gas (HPG) Hydrogenated C5-C8
Genotoxicity in vivo : Remarks: May cause genetic defects., Information refers to the main ingredient.

Carcinogenicity

Benzene : Species: Rat
Sex: female
Dose: 0, 25, 50, 250 mg/kg
Exposure time: 103 wks
Number of exposures: daily, 5 days/week
Test substance: yes
Remarks: zymbal gland carcinomas, squamous cell

	papillomas Species: Rat Sex: male Dose: 0, 50, 100, 200 mg/kg Exposure time: 103 wks Number of exposures: daily, 5 days/week Test substance: yes Remarks: zymbal gland carcinomas, squamous cell papillomas Species: Mouse Sex: male and female Dose: 25, 50, 100 mg/kg Exposure time: 103 wks Number of exposures: daily, 5 days/week Test substance: yes Remarks: Clear evidence of multiple organ carcinogenicity.
Toluene	Species: Rat Dose: 0, 600, 1200 ppm Exposure time: 2 yrs Number of exposures: 6.5 h/d, 5 d/wk Remarks: No evidence of carcinogenicity Species: Mouse Dose: 0, 600, 1200 ppm Exposure time: 2 yrs Number of exposures: 6.5 h/d, 5 d/wk Remarks: No evidence of carcinogenicity
n-hexane	Species: Rat Dose: 0.043, 900, 3,000, 9,016 ppm Exposure time: 2 yrs Number of exposures: 6 h/d, 5 d/wk Remarks: No evidence of carcinogenicity, Information given is based on data obtained from similar substances. Species: Mouse Sex: male and female Dose: 0.039, 900, 3,000, 9,018 ppm Exposure time: 2 yrs Number of exposures: 6 h/d, 5 d/wk Remarks: No evidence of carcinogenicity, Information given is based on data obtained from similar substances.

Hydrogenated Pyrolysis Gas (HPG) Hydrogenated C5-C8
Reproductive toxicity : This information is not available.

Hydrogenated Pyrolysis Gas (HPG) Hydrogenated C5-C8
Developmental Toxicity : This information is not available.

Hydrogenated Pyrolysis Gas (HPG) Hydrogenated C5-C8
Aspiration toxicity : May be fatal if swallowed and enters airways.
Toxicology Assessment

Hydrogenated Pyrolysis Gas (HPG) Hydrogenated C5-C8
CMR effects : Carcinogenicity:
May cause cancer.
Mutagenicity:
May cause genetic defects.
Teratogenicity:
May damage the unborn child.
Reproductive toxicity:
May damage fertility.

Hydrogenated Pyrolysis Gas (HPG) Hydrogenated C5-C8
Further information : Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting. Concentrations substantially above the TLV value may cause narcotic effects. Solvents may degrease the skin.

SECTION 12: Ecological information

Toxicity to fish

Benzene	: LC50: 5.3 mg/l Exposure time: 96 h Species: Oncorhynchus mykiss (rainbow trout) flow-through test Test substance: yes Method: OECD Test Guideline 203
n-Pentane	LC50: 4.3 mg/l Exposure time: 96 h Species: Oncorhynchus mykiss (rainbow trout)
Cyclopentane	NOEC: > 100 mg/l Exposure time: 24 h Species: Oncorhynchus kisutch (Marine, fresh water)
Toluene	LC50: 18 - 36 mg/l Exposure time: 96 h Species: Pimephales promelas (fathead minnow)
n-hexane	LL50: 12.51 mg/l Exposure time: 96 h Species: Oncorhynchus mykiss (rainbow trout) Method: QSAR modeled data
Cyclohexane	LC50: 4.53 mg/l Exposure time: 96 h Species: Pimephales promelas (fathead minnow) Method: OECD Test Guideline 203
Methylcyclopentane	No data available
Isopentane	LC50: 4.26 mg/l Exposure time: 96 h Species: Oncorhynchus mykiss (rainbow trout) semi-static test Method: OECD Test Guideline 203 Information given is based on data obtained from similar substances.

Ethylbenzene	LC50: 4.3 mg/l Exposure time: 96 h Species: Marone saxatilis (striped bass)

Toxicity to daphnia and other aquatic invertebrates

Benzene :	EC50: 10 mg/l Exposure time: 48 h Species: Daphnia magna (Water flea) static test Test substance: yes Method: OECD Test Guideline 202
n-Pentane	EC50: 2.7 mg/l Exposure time: 48 h Species: Daphnia magna (Water flea)
Cyclopentane	EL50: 10.5 mg/l Exposure time: 24 h Species: Daphnia magna (Water flea)
Toluene	EC50: 3.78 mg/l Exposure time: 48 h Species: Daphnia magna (Water flea)
n-hexane	EL50: 21.85 mg/l Exposure time: 48 h Species: Daphnia magna (Water flea) Method: QSAR modeled data
Cyclohexane	EC50: 0.9 mg/l Exposure time: 48 h Species: Daphnia magna (Water flea) Method: OECD Test Guideline 202
Methylcyclopentane	No data available
Isopentane	EC50: 2.3 mg/l Exposure time: 48 h Species: Daphnia magna (Water flea) static test Method: OECD Test Guideline 202
Ethylbenzene	LC50: 2.6 mg/l Exposure time: 96 h Species: Mysidopsis bahia (mysid shrimp) EC50: 2.2 mg/l Exposure time: 48 h Species: Daphnia magna (Water flea) Method: OECD Test Guideline 202

Toxicity to algae

Benzene :	ErC50: 100 mg/l Exposure time: 72 h Species: Pseudokirchneriella subcapitata (green algae) Test substance: yes Method: OECD Test Guideline 201

n-Pentane	EbC50: 10.7 mg/l Exposure time: 72 h Species: Pseudokirchneriella subcapitata (green algae)
Toluene	EC50: 134 mg/l Exposure time: 72 h Species: Chlamydomonas angulosa (Green algae)
n-hexane	EL50: 9.29 mg/l Exposure time: 72 h Species: Pseudokirchneriella subcapitata (green algae) Method: QSAR modeled data
Cyclohexane	EbC50: 3.4 mg/l Exposure time: 72 h Species: Selenastrum capricornutum (algae) NOEC: 0.925 mg/l Exposure time: 72 h Species: Pseudokirchneriella subcapitata (microalgae) Method: OECD Test Guideline 201
Isopentane	EC50: 7.51 mg/l Exposure time: 72 h Species: Scenedesmus capricornutum (fresh water algae) Growth inhibition Method: OECD Test Guideline 201 Information given is based on data obtained from similar substances.
Ethylbenzene	ErC50: 5.0 mg/l Exposure time: 96 h Species: Selenastrum capricornutum (algae) ErC50: 7.7 mg/l Exposure time: 72 h Species: Skeletonema costatum (Marine Algae)

M-Factor

cyclohexane : M-Factor (Acute Aquat. Tox.) 1

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)

Ethylbenzene : NOEC: 1 mg/l
Exposure time: 7 d
Species: Daphnia pulex (Water flea)
semi-static test
Analytical monitoring: yes

Biodegradability : This material is not expected to be readily biodegradable.
Information given is based on data obtained from similar substances.

Elimination information (persistence and degradability)

Bioaccumulation : No data available

Results of PBT assessment	:	This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.
Additional ecological information	:	An environmental hazard cannot be excluded in the event of unprofessional handling or disposal., Toxic to aquatic life with long lasting effects.

Ecotoxicology Assessment

Short-term (acute) aquatic hazard	:	Toxic to aquatic life.
Long-term (chronic) aquatic hazard	:	Toxic to aquatic life with long lasting effects.

SECTION 13: Disposal considerations

The information in this SDS pertains only to the product as shipped.

Use material for its intended purpose or recycle if possible. This material, if it must be discarded, may meet the criteria of a hazardous waste as defined by US EPA under RCRA (40 CFR 261) or other State and local regulations. Measurement of certain physical properties and analysis for regulated components may be necessary to make a correct determination. If this material is classified as a hazardous waste, federal law requires disposal at a licensed hazardous waste disposal facility.

Product	:	The product should not be allowed to enter drains, water courses or the soil. Do not contaminate ponds, waterways or ditches with chemical or used container. Send to a licensed waste management company.
Contaminated packaging	:	Empty remaining contents. Dispose of as unused product. Do not re-use empty containers. Do not burn, or use a cutting torch on, the empty drum.

SECTION 14: Transport information

The shipping descriptions shown here are for bulk shipments only, and may not apply to shipments in non-bulk packages (see regulatory definition).

Consult the appropriate domestic or international mode-specific and quantity-specific Dangerous Goods Regulations for additional shipping description requirements (e.g., technical name or names, etc.) Therefore, the information shown here, may not always agree with the bill of lading shipping description for the material. Flashpoints for the material may vary slightly between the SDS and the bill of lading.

US DOT (UNITED STATES DEPARTMENT OF TRANSPORTATION)
UN1203, GASOLINE, 3, II

IMO / IMDG (INTERNATIONAL MARITIME DANGEROUS GOODS)
UN1203, GASOLINE, 3, II, (-6.7°C), MARINE POLLUTANT, (TOLUENE, ETHYLBENZENE)

IATA (INTERNATIONAL AIR TRANSPORT ASSOCIATION)
UN1203, GASOLINE, 3, II

ADR (AGREEMENT ON DANGEROUS GOODS BY ROAD (EUROPE))
UN1203, MOTOR SPIRIT, 3, II, (D/E), ENVIRONMENTALLY HAZARDOUS, (TOLUENE, ETHYLBENZENE)

RID (REGULATIONS CONCERNING THE INTERNATIONAL TRANSPORT OF DANGEROUS GOODS (EUROPE))
UN1203, GASOLINE, 3, II, ENVIRONMENTALLY HAZARDOUS, (TOLUENE, ETHYLBENZENE)

ADN (EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY INLAND WATERWAYS)
UN1203, GASOLINE, 3, II, ENVIRONMENTALLY HAZARDOUS, (TOLUENE, ETHYLBENZENE)

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Other information	**:**	**Pyrolysis gasoline (containing benzene) (n), Environmental Cat.Y, Ship Type2 U.S. Coast Guard Compatibility Group 32**

SECTION 15: Regulatory information

National legislation

Regulation under the Occupational Safety and Health Act
A Material Safety Datasheet (MSDS) for this product is not required according to article 41 of the ISHA.

Regulation		Chemical name	Threshold limits
Harmful Substances Prohibited from Manufacturing	:	Not applicable	
Harmful Substances Required Permission for Manufacture	:	Benzene	>= 1 %

Act on the Registration and Evaluation, etc. of Chemical Substances, Chemicals Control Act

Regulation		Chemical name	Threshold limits
Toxic Chemicals	:	Not applicable	
Prohibited Chemicals	:	Not applicable	
Restricted Chemicals	:	Not applicable	
Toxic Release Inventory	:	Benzene toluene n-hexane cyclohexane ethylbenzene	>= 0.1 % >= 1 % >= 1 % >= 1 % >= 0.1 %

Dangerous Substances Safety Management Act
Dangerous Substances Safety Management Act : Flammable liquids, Type 1 petroleums, Water insoluble liquid

Notification status

Europe REACH	:	Not in compliance with the inventory
Switzerland CH INV	:	On the inventory, or in compliance with the inventory
United States of America (USA) TSCA	:	Not in compliance with the inventory
Canada DSL	:	Not in compliance with the inventory
Australia AICS	:	Not in compliance with the inventory
New Zealand NZIoC	:	Not in compliance with the inventory
Japan ENCS	:	Not in compliance with the inventory
Korea KECI	:	All substances in this product were registered, notified to be registered, or exempted from registration by QChem through an Only Representative according to K-REACH regulations. Importation of this product is permitted if the Korean Importer of Record was included on QChem's notifications or if the Importer of Record themselves notified the substances.
Philippines PICCS	:	Not in compliance with the inventory
China IECSC	:	Not in compliance with the inventory
Taiwan TCSI	:	Not in compliance with the inventory

SECTION 16: Other information

Further information

Significant changes since the last version are highlighted in the margin. This version replaces all previous versions.

The information in this SDS pertains only to the product as shipped.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Key or legend to abbreviations and acronyms used in the safety data sheet			
ACGIH	American Conference of Government Industrial Hygienists	LD50	Lethal Dose 50%
AICS	Australia, Inventory of Chemical Substances	LOAEL	Lowest Observed Adverse Effect Level
DSL	Canada, Domestic Substances List	NFPA	National Fire Protection Agency
NDSL	Canada, Non-Domestic Substances List	NIOSH	National Institute for Occupational Safety & Health
CNS	Central Nervous System	NTP	National Toxicology Program
CAS	Chemical Abstract Service	NZIoC	New Zealand Inventory of Chemicals
EC50	Effective Concentration	NOAEL	No Observable Adverse Effect Level
EC50	Effective Concentration 50%	NOEC	No Observed Effect Concentration
EGEST	EOSCA Generic Exposure Scenario Tool	OSHA	Occupational Safety & Health Administration
EOSCA	European Oilfield Specialty Chemicals Association	PEL	Permissible Exposure Limit
EINECS	European Inventory of Existing Chemical Substances	PICCS	Philippines Inventory of Commercial Chemical Substances
MAK	Germany Maximum Concentration	PRNT	Presumed Not Toxic

	Values		
GHS	Globally Harmonized System	RCRA	Resource Conservation Recovery Act
>=	Greater Than or Equal To	STEL	Short-term Exposure Limit
IC50	Inhibition Concentration 50%	SARA	Superfund Amendments and Reauthorization Act.
IARC	International Agency for Research on Cancer	TLV	Threshold Limit Value
IECSC	Inventory of Existing Chemical Substances in China	TWA	Time Weighted Average
ENCS	Japan, Inventory of Existing and New Chemical Substances	TSCA	Toxic Substance Control Act
KECI	Korea, Existing Chemical Inventory	UVCB	Unknown or Variable Composition, Complex Reaction Products, and Biological Materials
<=	Less Than or Equal To	WHMIS	Workplace Hazardous Materials Information System
LC50	Lethal Concentration 50%		