Gasoline Top Tier

Version 1.2 Revision Date 2020-03-04

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

Product information

Product Name	:	Gasoline Top Tier
Material	:	1118893, 1118892, 1118881
Use	:	Engine Testing
Company	:	Chevron Phillips Chemical Company LP 10001 Six Pines Drive The Woodlands, TX 77380

Emergency telephone:

Health:
866.442.9628 (North America)
1.832.813.4984 (International)
Transport:
CHEMTREC 800.424.9300 or 703.527.3887(int'l)
Asia: CHEMWATCH (+612 9186 1132) China: 0532 8388 9090
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
Argentina: +(54)-1159839431

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
This product has been classified in accordance with the hazard communication standard 29 CFR 1910.1200; the SDS and labels contain all the information as required by the standard.

Classification

: Flammable liquids, Category 2
Skin irritation, Category 2
Eye irritation, Category 2B
Germ cell mutagenicity, Category 1B
Carcinogenicity, Category 1B
Reproductive toxicity, Category 2
Specific target organ toxicity - single exposure, Category 3,

Central nervous system
Aspiration hazard, Category 1

Labeling

Symbol(s) :

Signal Word : Danger

Hazard Statements : H225: Highly flammable liquid and vapor.
H304: May be fatal if swallowed and enters airways.
H315 + H320: Causes skin and eye irritation.
H336: May cause drowsiness or dizziness.
H340: May cause genetic defects.
H350: May cause cancer.
H361: Suspected of damaging fertility or the unborn child.

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.
P261 Avoid breathing dust/fume/gas/mist/vapors/spray.
P264 Wash skin thoroughly after handling.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
Response:
P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.
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 person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor 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.
P331 Do NOT induce vomiting.
P337 + P313 If eye irritation persists: Get medical advice/ attention.
P362 Take off contaminated clothing and wash before reuse.
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
Storage:
P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

P403 + P235 Store in a well-ventilated place. Keep cool.
Disposal:
P501 Dispose of contents/ container to an approved waste disposal plant.

Carcinogenicity:

IARC	Group 1: Carcinogenic to humans	
	Benzene	71-43-2
	Group 2B: Possibly carcinogenic to humans	
	Ethylbenzene	100-41-4
	Naphtha (petroleum), heavy straight-run	64741-41-9
	Naphthalene	91-20-3
	Naphtha (petroleum), light catalytic reformed	64741-63-5
	Naphtha (petroleum), light alkylate	64741-66-8
	Naphtha, Petroleum, Heavy Catalytic Cracked	64741-54-4
	Group 1: Carcinogenic to humans	
	Benzene	71-43-2
	1,3-Butadiene	106-99-0
	Group 2B: Possibly carcinogenic to humans	
	Hydrocarbons, C3-11, catalytic cracker distillates	68476-46-0
	Naphtha (petroleum), light alkylate	64741-66-8
	Naphtha (petroleum), light catalytic reformed	64741-63-5
	Ethylbenzene	100-41-4
	Naphthalene	91-20-3
	Isoprene	78-79-5
NTP	Known to be human carcinogen	
	Benzene	71-43-2
	Reasonably anticipated to be a human carcinogen	
	Naphthalene	91-20-3
	Known to be human carcinogen	
	Benzene	71-43-2
	1,3-Butadiene	106-99-0
	Reasonably anticipated to be a human carcinogen	
	Naphthalene	91-20-3
	Isoprene	78-79-5
ACGIH	Confirmed human carcinogen	
	Benzene	71-43-2
	Confirmed animal carcinogen with unknown relevance to humans	
	Ethanol	64-17-5

SECTION 3: Composition/information on ingredients

Synonyms : None established

Component	CAS-No.	Weight %
Hydrocarbons, C3-11, catalytic cracker distillates	68476-46-0	90 - 100
Naphtha (petroleum), light alkylate	64741-66-8	30 - 50
Naphtha (petroleum), light catalytic reformed	64741-63-5	30 - 50
Tail gas (petroleum), catalytic cracked distillate and catalytic cracked naphtha fractionation absorber	68307-98-2	20 - 30
Benzene, dimethyl-	1330-20-7	0 - 20
Toluene	108-88-3	0 - 20
Benzene	71-43-2	0 - 1.1
Ethylbenzene	100-41-4	0 - 5
n-hexane	110-54-3	0 - 5
Naphthalene	91-20-3	0 - 5
Cyclohexane	110-82-7	0 - 5
1,2,4-Trimethylbenzene	95-63-6	0 - 5
1,3-Butadiene	106-99-0	0 - 1
Isoprene	78-79-5	0 - 1

May contain trace hydrogen sulfide below 1.0 wt%.

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 on skin, rinse well with water. If on clothes, remove clothes.

In case of eye contact : Flush eyes with water as a precaution. 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 : -37°C (-35°F)
estimated

Autoignition temperature : No data available

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.
Hazardous decomposition products	:	Carbon Dioxide. Carbon oxides.

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.
Advice on common storage	:	No materials to be especially mentioned.
Use	:	Engine Testing

SECTION 8: Exposure controls/personal protection

Ingredients with workplace control parameters

US

Components	Basis	Value	Control parameters	Note
Hydrocarbons, C3-11, catalytic cracker distillates	OSHA Z-1	TWA	500 ppm, 2,000 mg/m3	(b),
	OSHA Z-1-A	TWA	400 ppm, 1,600 mg/m3	
Naphtha (petroleum), light alkylate	OSHA Z-1-A	TWA	400 ppm, 1,600 mg/m3	
	OSHA Z-1	TWA	500 ppm, 2,000 mg/m3	(b),
Naphtha (petroleum), light catalytic reformed	OSHA Z-1-A	TWA	400 ppm, 1,600 mg/m3	
	OSHA Z-1	TWA	500 ppm, 2,000 mg/m3	(b),
Benzene, dimethyl-	OSHA Z-1	TWA	100 ppm, 435 mg/m3	(b),
	OSHA Z-1-A	STEL	150 ppm, 655 mg/m3	
	OSHA Z-1-A	TWA	100 ppm, 435 mg/m3	
	ACGIH	TWA	100 ppm,	CNS impair, URT irr, eye irr, BEI, A4,
	ACGIH	STEL	150 ppm,	CNS impair, URT irr, eye irr, BEI, A4,
Toluene	ACGIH	TWA	20 ppm,	visual impair, female repro, pregnancy loss, BEI, A4,
	OSHA Z-2	TWA	200 ppm,	
	OSHA Z-2	CEIL	300 ppm,	
	OSHA Z-2	Peak	500 ppm,	
	OSHA Z-1-A	TWA	100 ppm, 375 mg/m3	
	OSHA Z-1-A	STEL	150 ppm, 560 mg/m3	
1,2,4-Trimethylbenzene	ACGIH	TWA	25 ppm,	CNS impair, hematologic eff, asthma,
	OSHA Z-1-A	TWA	25 ppm, 125 mg/m3	
Ethylbenzene	OSHA Z-1	TWA	100 ppm, 435 mg/m3	(b),
	OSHA Z-1-A	TWA	100 ppm, 435 mg/m3	
	OSHA Z-1-A	STEL	125 ppm, 545 mg/m3	
	ACGIH	TWA	20 ppm,	cochlear imp, kidney dam (nephropathy), URT irr, BEI, A3,
n-hexane	ACGIH	TWA	50 ppm,	CNS impair, eye irr, peripheral neuropathy, BEI, Skin,
	OSHA Z-1	TWA	500 ppm, 1,800 mg/m3	(b),
	OSHA Z-1-A	TWA	50 ppm, 180 mg/m3	
Cyclohexane	ACGIH	TWA	100 ppm,	CNS impair,
	OSHA Z-1	TWA	300 ppm, 1,050 mg/m3	(b),
	OSHA Z-1-A	TWA	300 ppm, 1,050 mg/m3	
Naphthalene	ACGIH	TWA	10 ppm,	hemolytic anemia, URT irr, cataract, A3, Skin,
	ACGIH	STEL	15 ppm,	hematologic eff, URT irr, eye irr, eye dam, (), A4, Skin,
	OSHA Z-1	TWA	10 ppm, 50 mg/m3	(b),

	OSHA Z-1-A	TWA	10 ppm, 50 mg/m3	
	OSHA Z-1-A	STEL	15 ppm, 75 mg/m3	
Benzene	ACGIH	TWA	0.5 ppm,	leukemia, BEI, A1, Skin,
	ACGIH	STEL	2.5 ppm,	leukemia, BEI, A1, Skin,
	OSHA Z-1-A	TWA	1 ppm,	
	OSHA Z-1-A	CEIL	5 ppm,	
	OSHA Z-2	Peak	50 ppm,	(a),
	OSHA 29 CFR 1910.1028(c)	TWA	1 ppm,	
	OSHA 29 CFR 1910.1028(c)	STEL	5 ppm,	
	OSHA CARC	PEL	1 ppm,	
	OSHA CARC	STEL	5 ppm,	
Isoprene	US WEEL	TWA	2 ppm,	
1,3-Butadiene	ACGIH	TWA	2 ppm,	cancer, A2,
	OSHA Z-1	TWA	1 ppm,	
	OSHA Z-1	STEL	5 ppm,	
	OSHA CARC	PEL	1 ppm,	
	OSHA 29 CFR 1910.1051(c)	TWA	1 ppm,	
	OSHA CARC	STEL	5 ppm,	
	OSHA 29 CFR 1910.1051(c)	STEL	5 ppm,	

() Adopted values or notations enclosed are those for which changes are proposed in the NIC
(a) This standard applies to the industry segments exempt from the 1 ppm 8-hour TWA and 5 ppm STEL of the benzene standard at 1910.1028.
(b) The value in mg/m3 is approximate.
A1 Confirmed human carcinogen
A2 Suspected human carcinogen
A3 Confirmed animal carcinogen with unknown relevance to humans
A4 Not classifiable as a human carcinogen
asthma Asthma
BEI Substances for which there is a Biological Exposure Index or Indices (see BEI® section)
cancer Cancer
cataract Cataract
CNS impair Central Nervous System impairment
cochlear imp Cochlear impair
eye dam Eye damage
eye irr Eye irritation
female repro Female reproductive
hematologic eff Hematologic effects
hemolytic anemia Hemolytic anemia
kidney dam (nephropathy) Kidney damage (nephropathy)
leukemia Leukemia
peripheral neuropathy Peripheral neuropathy
pregnancy loss Pregnancy loss
Skin Danger of cutaneous absorption
URT irr Upper Respiratory Tract irritation
visual impair Visual impairment

Hazardous components without workplace control parameters

Immediately Dangerous to Life or Health Concentrations (IDLH)

Substance name	CAS-No.	Control parameters	Update
Benzene, dimethyl-	1330-20-7	Immediately Dangerous to Life or Health Concentration Value 900 parts per million	1995-03-01
Toluene	108-88-3	Immediately Dangerous to Life or Health Concentration Value 500 parts per million	1995-03-01
Ethylbenzene	100-41-4	Immediately Dangerous to Life or Health Concentration Value 800 parts per million	1995-03-01
n-hexane	110-54-3	Immediately Dangerous to Life or Health Concentration Value 1100 parts per million	1995-03-01
Cyclohexane	110-82-7	Immediately Dangerous to Life or Health Concentration Value 1300 parts per million	1995-03-01

Naphthalene	91-20-3	Immediately Dangerous to Life or Health Concentration Value 250 parts per million	1995-03-01
Benzene	71-43-2	Immediately Dangerous to Life or Health Concentration Value 500 parts per million	1995-03-01
1,3-Butadiene	106-99-0	Immediately Dangerous to Life or Health Concentration Value 2000 parts per million	2017-02-03
n-Heptane	142-82-5	Immediately Dangerous to Life or Health Concentration Value 750 parts per million	1995-03-01
n-Butane	106-97-8	Immediately Dangerous to Life or Health Concentration Value 1600 parts per million	2017-02-03
Toluene	108-88-3	Immediately Dangerous to Life or Health Concentration Value 500 parts per million	1995-03-01
Naphthalene	91-20-3	Immediately Dangerous to Life or Health Concentration Value 250 parts per million	1995-03-01
Ethanol	64-17-5	Immediately Dangerous to Life or Health Concentration Value 3300 parts per million	1995-03-01
m-xylene	108-38-3	Immediately Dangerous to Life or Health Concentration Value 900 parts per million	1995-03-01
Benzene	71-43-2	Immediately Dangerous to Life or Health Concentration Value 500 parts per million	1995-03-01
p-xylene	106-42-3	Immediately Dangerous to Life or Health Concentration Value 900 parts per million	1995-03-01
n-hexane	110-54-3	Immediately Dangerous to Life or Health Concentration Value 1100 parts per million	1995-03-01
o-xylene	95-47-6	Immediately Dangerous to Life or Health Concentration Value 900 parts per million	1995-03-01
Ethylbenzene	100-41-4	Immediately Dangerous to Life or Health Concentration Value 800 parts per million	1995-03-01
n-Pentane	109-66-0	Immediately Dangerous to Life or Health Concentration Value 1500 parts per million	1995-03-01
Methylcyclohexane	108-87-2	Immediately Dangerous to Life or Health Concentration Value 1200 parts per million	1995-03-01
n-Octane	111-65-9	Immediately Dangerous to Life or Health Concentration Value 1000 parts per million	1995-03-01
Hydrogen Sulfide	7783-06-4	Immediately Dangerous to Life or Health Concentration Value 100 parts per million	1995-03-01

Biological exposure indices

US

Substance name	CAS-No.	Control parameters	Sampling time	Update
Toluene	108-88-3	Toluene: 0.02 mg/l (In blood)	Prior to last shift of workweek	2010-03-01
		Toluene: 0.03 mg/l (Urine)	End of shift (As soon as possible after exposure ceases)	2010-03-01
		o-Cresol: 0.3 mg/g Creatinine (Urine)	End of shift (As soon as possible after exposure ceases)	2010-03-01

m-xylene	108-38-3	Methylhippuric acids: 1.5 g/g creatinine (Urine)	End of shift (As soon as possible after exposure ceases)	2013-03-01
Benzene	71-43-2	S-Phenylmercapturic acid: 25 µg/g creatinine (Urine)	End of shift (As soon as possible after exposure ceases)	2010-03-01
		t,t-Muconic acid: 500 µg/g creatinine (Urine)	End of shift (As soon as possible after exposure ceases)	2010-03-01
p-xylene	106-42-3	Methylhippuric acids: 1.5 g/g creatinine (Urine)	End of shift (As soon as possible after exposure ceases)	2013-03-01
n-hexane	110-54-3	2,5-Hexanedione: 0.4 mg/l (Urine)	End of shift at end of workweek	2007-01-01
o-xylene	95-47-6	Methylhippuric acids: 1.5 g/g creatinine (Urine)	End of shift (As soon as possible after exposure ceases)	2013-03-01
Ethylbenzene	100-41-4	Sum of mandelic acid and phenyl glyoxylic acid: 0.15 g/g creatinine (Urine)	End of shift (As soon as possible after exposure ceases)	2016-03-01
Benzene, dimethyl-	1330-20-7	Methylhippuric acids: 1.5 g/g creatinine (Urine)	End of shift (As soon as possible after exposure ceases)	2013-03-01
Toluene	108-88-3	Toluene: 0.02 mg/l (In blood)	Prior to last shift of workweek	2010-03-01
		Toluene: 0.03 mg/l (Urine)	End of shift (As soon as possible after exposure ceases)	2010-03-01
		o-Cresol: 0.3 mg/g Creatinine (Urine)	End of shift (As soon as possible after exposure ceases)	2010-03-01
Benzene	71-43-2	S-Phenylmercapturic acid: 25 µg/g creatinine (Urine)	End of shift (As soon as possible after exposure ceases)	2010-03-01
		t,t-Muconic acid: 500 µg/g creatinine (Urine)	End of shift (As soon as possible after exposure ceases)	2010-03-01
Ethylbenzene	100-41-4	Sum of mandelic acid and phenyl glyoxylic acid: 0.15 g/g creatinine (Urine)	End of shift (As soon as possible after exposure ceases)	2016-03-01
n-hexane	110-54-3	2,5-Hexanedione: 0.4 mg/l (Urine)	End of shift at end of workweek	2007-01-01
1,3-Butadiene	106-99-0	1,2 Dihydroxy-4-(N-acetylcysteinyl)-butane: 2.5 mg/l (Urine)	End of shift (As soon as possible after exposure ceases)	2010-03-01
		Mixture of N-1 and N-2(hydroxybutenyl)valine: 2.5 picomoles per gram Hemoglobin (Hemoglobin (Hb) adducts in blood)	Not critical	2010-03-01

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

Form	:	Liquid
Physical state	:	Liquid
Color	:	Clear to amber
Odor	:	Mild

Safety data

Flash point	:	-37°C (-35°F) estimated
Lower explosion limit	:	1.5 %(V)
Upper explosion limit	:	7.6 %(V)
Oxidizing properties	:	No
Autoignition temperature	:	No data available

Molecular weight	:	Not applicable
pH	:	Not applicable
Pour point	:	No data available
Boiling point/boiling range	:	51-209°C (124-408°F)
Vapor pressure	:	6.90 PSI at 38°C (100°F)
Relative density	:	0.75 at 16 °C (61 °F)
Water solubility	:	Negligible
Partition coefficient: n-octanol/water	:	No data available
Viscosity, kinematic	:	No data available
Relative vapor density	:	3 (Air = 1.0)
Evaporation rate	:	No data available
Percent volatile	:	> 99 %

SECTION 10: Stability and reactivity

Reactivity : Stable under recommended storage conditions.

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 : Hazardous reactions: Vapors may form explosive mixture with air.

Conditions to avoid : Heat, flames and sparks.

Materials to avoid : May react with oxygen and strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.

Hazardous decomposition products : Carbon Dioxide
Carbon oxides

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

SECTION 11: Toxicological information

Acute oral toxicity

Naphtha (petroleum), light alkylate	:	LD50: > 5,000 mg/kg Species: Rat
Naphtha (petroleum), light catalytic reformed		LD50: > 5,000 mg/kg Species: Rat Sex: male and female
Benzene, dimethyl-		LD50: 3,523 - 8,600 mg/kg Species: Rat
Toluene		LD50: 6,500 mg/kg Species: Rat Sex: Not Specified
Benzene		LD50: > 2,000 mg/kg Species: Rat Sex: female
Ethylbenzene		LD50: 3,500 mg/kg Species: Rat
n-hexane		LD50: 16 g/kg Species: Rat Sex: male and female
Naphthalene		LD50: 500 mg/kg Method: Converted acute toxicity point estimate
Cyclohexane		LD50: > 5,000 mg/kg Species: Rat Sex: male and female Method: OECD Test Guideline 401
1,2,4-Trimethylbenzene		LD50 Oral: 6,000 mg/kg Species: Rat Sex: male
1,3-Butadiene		LD50: 5,480 mg/kg Species: Rat
Isoprene		LD50: 2,043 - 2,210 mg/kg Species: Rat

Acute inhalation toxicity

Hydrocarbons, C3-11, catalytic cracker distillates	:	LC50: > 20 mg/l Species: Rat Test atmosphere: vapor Method: Estimated based on individual component values.
Naphtha (petroleum), light catalytic reformed		LC50: 5.6 mg/m3Exposure time: 4 h Species: Rat Test atmosphere: dust/mist
Tail gas (petroleum), catalytic		

cracked distillate and catalytic cracked naphtha fractionation absorber	
Benzene, dimethyl-	LC50: 29 mg/l Exposure time: 4 h Species: Rat Test atmosphere: gas
Toluene	LC50: 25.7 - 30 mg/l Exposure time: 4 h Species: Rat Test atmosphere: vapor
Benzene	LC50: 44.5 mg/l Exposure time: 4 h Species: Rat Sex: Not Specified Test atmosphere: vapor
Ethylbenzene	LC50: 17.4 mg/l Exposure time: 4 h Species: Rat Test atmosphere: vapor
n-hexane	LC50: 73860 ppm Exposure time: 4 h Species: Rat Sex: male Test atmosphere: vapor Method: OECD Test Guideline 403 Information given is based on data obtained from similar substances.
Cyclohexane	LC50: >32,880 mg/m3Exposure time: 4 h Species: Rat Sex: male and female Test atmosphere: vapor Method: OECD Test Guideline 403
1,2,4-Trimethylbenzene	LC50: > 9.833 mg/l Exposure time: 12 h Species: Rat Test atmosphere: vapor Test substance: yes
1,3-Butadiene	LC50: 285 mg/l Exposure time: 4 h Species: Rat Test atmosphere: vapor
Isoprene	LC50: 180 mg/l Exposure time: 4 h Species: Rat

Acute dermal toxicity

Benzene, dimethyl-	:	LD50: > 2,000 mg/kg Species: Rabbit Information given is based on data obtained from similar

	substances.
Toluene	LD50: 12,400 mg/kg Species: Rabbit Sex: Not Specified
Benzene	LD50: > 8,260 mg/kg Species: Rabbit
Ethylbenzene	LD50: 15,415 mg/kg Species: Rabbit
n-hexane	LD50: > 3,350 mg/kg Species: Rabbit Sex: male and female Information given is based on data obtained from similar substances.
1,2,4-Trimethylbenzene	LD50 Dermal: > 3440 milligram per kilogram Species: Rat Sex: male and female Test substance: no Information given is based on data obtained from similar substances.
1,3-Butadiene	Negligible or unlikely exposure pathways
Isoprene	LD50: >1 ML/KG Species: Rat

Gasoline Top Tier
Skin irritation : Skin irritation
largely based on animal evidence.

Gasoline Top Tier
Eye irritation : Mild eye irritation
largely based on animal evidence.

Gasoline Top Tier
Sensitization : Does not cause skin sensitization.
largely based on animal evidence.

Repeated dose toxicity

Naphtha (petroleum), light alkylate	: Species: Rabbit Application Route: Dermal Dose: 0, 200, 1000, 2000 mg/kg Exposure time: 4 wk Number of exposures: 3 times/wk NOEL: 1,000 mg/kg Lowest observable effect level: 2,000 mg/kg

	Species: Rat Application Route: Inhalation Dose: 0, 668, 2220, 6646 ppm Exposure time: 12 wk Number of exposures: 5 d/wk NOEL: 6,646 ppm
Naphtha (petroleum), light catalytic reformed	Species: Rat Application Route: Inhalation Dose: 0, 2.00, 5.85, 20.3 mg/l Exposure time: 21 day Number of exposures: 6 h/d, 5 d/wk NOEL: 20.3 mg/l Species: Rabbit Application Route: Dermal Dose: 0, 200, 1000, 2000 mg/l Exposure time: 28 day Number of exposures: 3 times/wk Lowest observable effect level: 1000 mg/l
Benzene, dimethyl-	Species: Rat Application Route: oral gavage Dose: 0, 62.5, 125, 250, 500, 100... Exposure time: 13 wk Number of exposures: daily, 5 d/wk NOEL: 1,000 mg/kg Species: Rat Application Route: Inhalation Dose: 0, 180, 460, 810 ppm Exposure time: 13 wk Number of exposures: 6 h/d, 5 d/wk NOEL: > 810 ppm Species: Rat Application Route: Inhalation Dose: 0, 450, 900, 1800 ppm Exposure time: 13 wk Number of exposures: 6 h/d, 6 d/wk Lowest observable effect level: 900 ppm
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
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
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
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
Isoprene	Species: Rat Application Route: Inhalation Dose: 0. 70, 220, 700, 2200, 7000... Exposure time: 13 wk Number of exposures: 6 h/d, 5 d/wk NOEL: 7000 ppm

Species: Mouse
Application Route: Inhalation
Dose: 0. 70, 220, 700, 2200, 7000...
Exposure time: 13 wk
Number of exposures: 6 h/d, 5 d/wk
Lowest observable effect level: 70 ppm

Genotoxicity in vitro

Hydrocarbons, C3-11, catalytic cracker distillates	:	Result: May cause genetic defects. Remarks: In vitro tests showed mutagenic effects
Naphtha (petroleum), light alkylate		Test Type: Mouse lymphoma assay Result: negative
Naphtha (petroleum), light catalytic reformed		Test Type: Ames test Result: negative Test Type: Cytogenetic assay Result: negative
Tail gas (petroleum), catalytic cracked distillate and catalytic cracked naphtha fractionation absorber		Result: May cause genetic defects.
Benzene, dimethyl-		Test Type: Ames test Result: negative Test Type: Mouse lymphoma assay Result: negative
Toluene		Test Type: Ames test Result: negative Test Type: Sister Chromatid Exchange Assay Result: negative Test Type: Mouse lymphoma assay Result: negative Test Type: Cytogenetic assay Result: negative
Benzene		Test Type: Ames test Result: negative Test Type: Cytogenetic assay Result: positive Test Type: Mouse lymphoma assay Result: positive Test Type: Sister Chromatid Exchange Assay Result: negative
Ethylbenzene		Test Type: Ames test Result: negative

	Test Type: Unscheduled DNA synthesis assay Result: negative
n-hexane	Test Type: Ames test Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 471 Result: negative
	Test Type: Mouse lymphoma assay Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 476 Result: negative
	Test Type: Mouse lymphoma assay Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 476 Result: Positive results were obtained in some in vitro tests.
Naphthalene	Test Type: Ames test Result: negative
	Test Type: Sister Chromatid Exchange Assay Result: negative
	Test Type: Unscheduled DNA synthesis assay Result: negative
Cyclohexane	Test Type: Ames test Metabolic activation: with and without metabolic activation Method: Mutagenicity (Escherichia coli - reverse mutation assay) Result: negative
	Test Type: Mouse lymphoma assay Metabolic activation: with and without metabolic activation Result: negative
	Test Type: Mouse lymphoma assay Metabolic activation: with and without metabolic activation Method: OECD Guideline 476 Result: negative
1,3-Butadiene	Test Type: Ames test Metabolic activation: with and without metabolic activation Result: Positive results were obtained in some in vitro tests.
	Test Type: Chromosome aberration test in vitro Test system: Chinese hamster cells Method: OECD Guideline 473 Result: positive
Isoprene	Test Type: Ames test Result: negative
	Test Type: Sister Chromatid Exchange Assay Result: positive

Genotoxicity in vivo

Hydrocarbons, C3-11, catalytic cracker distillates	:	Result: May cause genetic defects.
Naphtha (petroleum), light alkylate		Test Type: Cytogenetic assay Species: Rat Cell type: Bone marrow Dose: 300, 1000, 3000 mg/kg Result: negative
Naphtha (petroleum), light catalytic reformed		Test Type: Cytogenetic assay Result: negative
Tail gas (petroleum), catalytic cracked distillate and catalytic cracked naphtha fractionation absorber		Result: May cause genetic defects.
Benzene, dimethyl-		Test Type: Mouse micronucleus assay Result: negative
Toluene		Test Type: Cytogenetic assay Result: negative Test Type: Mouse micronucleus assay Result: negative
Benzene		Test Type: Mouse micronucleus assay Result: positive
Ethylbenzene		Test Type: Mouse micronucleus assay Species: Mouse Result: negative
n-hexane		Test Type: Dominant lethal assay Species: Mouse Dose: 100 and 400 ppm Result: negative Test Type: Cytogenetic assay Species: Rat Dose: 900, 3000, 9000 ppm Result: negative
Naphthalene		Test Type: Mouse micronucleus assay Result: negative
Cyclohexane		Test Type: Cytogenetic assay Species: Rat Cell type: Bone marrow Dose: 96.6, 307.2, 10141.6 ppm Result: negative
1,3-Butadiene		Test Type: Mouse micronucleus assay Species: mice Route of Application: inhalation (gas) Exposure time: 6 h per day for 5 days Dose: 50, 200, 500, 1300 ppm Method: OECD Test Guideline 474 Result: positive

	Test Type: Dominant lethal assay Species: mice Method: OECD Test Guideline 478 Result: Positive results were obtained in some in vivo tests.
Isoprene	Result: negative Test Type: Micronucleus test Result: positive

Gasoline Top Tier
Carcinogenicity : Method: Expected to be carcinogenic based on individual component data.

Reproductive toxicity

Hydrocarbons, C3-11, catalytic cracker distillates	: Species: Rat Sex: male and female Application Route: inhalation (vapor) Dose: 0, 5000, 10000, 20000 mg/m3 Method: OECD Test Guideline 416 NOAEL Parent: > 20,000 mg/m3 NOAEL F1: > 20,000 mg/m3
Naphtha (petroleum), light alkylate	Species: Rat Sex: male Application Route: Inhalation Dose: 0, 5.1, 12.5, 24.7 mg/L Number of exposures: 6 h/d, 7 d/wk Test period: 7 wks NOAEL Parent: 24.7 mg/l NOAEL F1: 24.7 mg/l No adverse effects expected Species: Rat Sex: female Application Route: Inhalation Dose: 0, 5.1, 12.5, 24.7 mg/L Number of exposures: 6 h/d, 7 d/wk Test period: 8 wks NOAEL Parent: 24.7 mg/l NOAEL F1: 24.7 mg/l No adverse effects expected
Tail gas (petroleum), catalytic cracked distillate and catalytic cracked naphtha fractionation absorber	Suspected of damaging fertility or the unborn child.
Toluene	Species: Rat Application Route: Inhalation Dose: 0, 100, 500, 2000 ppm Test period: 95 d NOAEL Parent: 2000 ppm
n-hexane	Species: Rat Sex: male Application Route: Inhalation Dose: 5,000 ppm

	Number of exposures: 16 hr/d, 6 d/wk Test period: 6 wks permanent testicular damage characterized by loss of germ-cell line
Cyclohexane	Species: Rat Application Route: Inhalation Dose: 0, 500, 2000, 7000 ppm Number of exposures: 6 hr/d, 5 d/wk Method: OECD Test Guideline 416 NOAEL Parent: 500 ppm NOAEL F1: 7000 ppm NOAEL F2: 7000 ppm

Developmental Toxicity

Hydrocarbons, C3-11, catalytic cracker distillates	:	Species: Rat Exposure time: GD6-GD19 Number of exposures: 6 h/d Test period: Day 20 of Gestation Method: OECD Guideline 414 NOAEL Teratogenicity: 23900 mg/m3 NOAEL Maternal: 23900 mg/m3
Naphtha (petroleum), light alkylate		No adverse effects expected
Tail gas (petroleum), catalytic cracked distillate and catalytic cracked naphtha fractionation absorber		Suspected of damaging fertility or the unborn child.
Benzene, dimethyl-		Species: Rat Application Route: Inhalation Dose: 0, 805, 1610 ppm Number of exposures: 6 h/d Test period: GD 7-16 NOAEL Maternal: 1610 ppm Species: Mouse Application Route: oral gavage Dose: 0, 780, 1960, 2619 mg/kg Number of exposures: 3 times/d Test period: GD 6-15 NOAEL Teratogenicity: 780 mg/kg NOAEL Maternal: 780 mg/kg
Toluene		Species: Rat Application Route: Inhalation Dose: 0, 100, 500, 2000 ppm Test period: 95 d NOAEL Teratogenicity: 400-750 ppm
n-hexane		Species: Rat Application Route: Inhalation Dose: 200, 1,000, 5,000 ppm Number of exposures: 20 hr/d, daily Test period: GD 6-20 NOAEL Teratogenicity: 200 ppm NOAEL Maternal: 200 ppm

	Species: Mouse Application Route: Inhalation Dose: 200, 1,000, 5,000 ppm Number of exposures: 20 hr/d, daily Test period: GD 6-17 NOAEL Maternal: 1,000 ppm
Naphthalene	Species: Rabbit Application Route: oral gavage Dose: 40, 200, 400 mg/kg Test period: 29 d, GD 6-18 NOAEL Teratogenicity: 400 mg/kg
Cyclohexane	Species: Rat Application Route: Inhalation Dose: 0, 500, 2,000, 7,000 PPM Number of exposures: 6 hr/d Test period: GD 6-15 Method: OECD Guideline 414 NOAEL Teratogenicity: 7,000 ppm NOAEL Maternal: 500 ppm
	Species: Rabbit Application Route: Inhalation Dose: 0, 500, 2,000, 7,000 PPM Number of exposures: 6 hr/d Test period: GD 6-18 Method: OECD Guideline 414 NOAEL Teratogenicity: 7,000 ppm NOAEL Maternal: 500 ppm

Gasoline Top Tier
Aspiration toxicity : May be fatal if swallowed and enters airways.

Toxicology Assessment

Gasoline Top Tier
CMR effects : Carcinogenicity:
Possible human carcinogen
Mutagenicity:
In vitro tests showed mutagenic effects, In vivo tests showed mutagenic effects
Reproductive toxicity:
Suspected of damaging fertility or the unborn child.

Gasoline Top Tier
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

Hydrocarbons, C3-11, catalytic cracker distillates	:	1 - 100 mg/l Toxic to fish.
Naphtha (petroleum), light alkylate		LC50: 8.2 mg/l Exposure time: 96 h Species: Pimephales promelas (fathead minnow)
Naphtha (petroleum), light catalytic reformed		LL50: 8.2 mg/l Exposure time: 96 h Species: Pimephales promelas (fathead minnow) semi-static test
Tail gas (petroleum), catalytic cracked distillate and catalytic cracked naphtha fractionation absorber		97.1 mg/l Method: Value calculated using ECOSAR. Toxic to fish.
Benzene, dimethyl-		LC50: 8.2 mg/l Exposure time: 96 h Species: Salmo gairdneri (Rainbow trout)
Toluene		LC50: 18 - 36 mg/l Exposure time: 96 h Species: Pimephales promelas (fathead minnow)
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
Ethylbenzene		LC50: 4.3 mg/l Exposure time: 96 h Species: Marone saxatilis (striped bass)
n-hexane		LL50: 12.51 mg/l Exposure time: 96 h Species: Oncorhynchus mykiss (rainbow trout) Method: QSAR modeled data
Naphthalene		LC50: 3.2 mg/l Exposure time: 96 h Species: Pimephales promelas (fathead minnow)
Cyclohexane		LC50: 4.53 mg/l Exposure time: 96 h Species: Pimephales promelas (fathead minnow) Method: OECD Test Guideline 203
1,3-Butadiene		LC50: 71.5 mg/l Exposure time: 24 h Species: Lagodon rhomboides (Pinfish)
Isoprene		LC50: 7.43 mg/l Exposure time: 96 h Species: Oncorhynchus mykiss (rainbow trout) semi-static test Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates

Hydrocarbons, C3-11, catalytic cracker distillates	:	1 - 100 mg/l Toxic effects on fish and plankton
Naphtha (petroleum), light alkylate		LC50: 10 mg/l Exposure time: 48 h Species: Daphnia magna (Water flea)
Tail gas (petroleum), catalytic cracked distillate and catalytic cracked naphtha fractionation absorber		LC50: 53.4 mg/l Species: Daphnia Method: Value calculated using ECOSAR. Toxic effects on fish and plankton
Toluene		EC50: 3.78 mg/l Exposure time: 48 h Species: Daphnia magna (Water flea)
Benzene		EC50: 10 mg/l Exposure time: 48 h Species: Daphnia magna (Water flea) static test Test substance: yes 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
n-hexane		EL50: 21.85 mg/l Exposure time: 48 h Species: Daphnia magna (Water flea) Method: QSAR modeled data
Naphthalene		LC50: 2.16 mg/l Exposure time: 48 h Species: Daphnia magna (Water flea)
Cyclohexane		EC50: 0.9 mg/l Exposure time: 48 h Species: Daphnia magna (Water flea) Method: OECD Test Guideline 202
Isoprene		EC50: 5.77 mg/l Exposure time: 48 h Species: Daphnia magna (Water flea)

Toxicity to algae

Hydrocarbons, C3-11, catalytic cracker distillates	:	1 - 100 mg/l Toxic to algae.
Naphtha (petroleum), light alkylate		EC50: 45 mg/l Exposure time: 96 h Species: Selenastrum capricornutum (algae)
Tail gas (petroleum), catalytic		EC50: 30.7 mg/l

cracked distillate and catalytic cracked naphtha fractionation absorber	Method: Value calculated using ECOSAR. Toxic to algae.
Toluene	EC50: 134 mg/l Exposure time: 72 h Species: Chlamydomonas angulosa (Green algae)
Benzene	ErC50: 100 mg/l Exposure time: 72 h Species: Pseudokirchneriella subcapitata (green algae) Test substance: yes Method: OECD Test Guideline 201
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)
n-hexane	EL50: 9.29 mg/l Exposure time: 72 h Species: Pseudokirchneriella subcapitata (green algae) Method: QSAR modeled data
Naphthalene	EC50: 2.96 mg/l Exposure time: 48 h Species: Selenastrum capricornutum (algae)
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
Isoprene	EC50: > 35.2 mg/l Exposure time: 96 h Species: Pseudokirchneriella subcapitata (green algae)

M-Factor

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

Toxicity to fish (Chronic toxicity)

Hydrocarbons, C3-11, catalytic cracker distillates	:	NOEL: 2.6 mg/l Toxic effects on fish and plankton
Tail gas (petroleum), catalytic cracked distillate and catalytic cracked naphtha fractionation absorber		Chronic Toxicity Value: 9.01 mg/l Toxic effects on fish and plankton

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)

Hydrocarbons, C3-11, catalytic cracker distillates	:	NOEL: 2.6 mg/l Species: Daphnia sp. (Water flea) Toxic effects on fish and plankton
Tail gas (petroleum), catalytic cracked distillate and catalytic cracked naphtha fractionation absorber	:	Chronic Toxicity Value: 4.37 mg/l Species: Daphnia sp. (Water flea) Toxic effects on fish and plankton
Ethylbenzene	:	NOEC: 1 mg/l Exposure time: 7 d Species: Daphnia pulex (Water flea) semi-static test Analytical monitoring: yes

Biodegradability : Expected to be inherently biodegradable.

Elimination information (persistence and degradability)

Bioaccumulation : This substance is not considered to be very persistent and very bioaccumulating (vPvB).

Mobility

Naphtha (petroleum), light alkylate	:	This product may float or sink in water. After release, disperses into the air.
Naphtha (petroleum), light catalytic reformed	:	No data available

Results of PBT assessment

Toluene	:	Non-classified vPvB substance, Non-classified PBT substance
Benzene	:	This substance is not considered to be persistent, bioaccumulating and toxic (PBT)., This substance is not considered to be very persistent and very bioaccumulating (vPvB).
Ethylbenzene	:	Non-classified vPvB substance, Non-classified PBT substance
n-hexane	:	Non-classified vPvB substance, Non-classified PBT substance
Cyclohexane	:	Non-classified PBT substance, Non-classified vPvB substance
Additional ecological information	:	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, (-37°C), MARINE POLLUTANT, (HYDROCARBONS, C3-11, CATALYTIC CRACKER DISTILLATES)

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, (HYDROCARBONS, C3-11, CATALYTIC CRACKER DISTILLATES)

RID (REGULATIONS CONCERNING THE INTERNATIONAL TRANSPORT OF DANGEROUS GOODS (EUROPE))
UN1203, GASOLINE, 3, II, ENVIRONMENTALLY HAZARDOUS, (HYDROCARBONS, C3-11, CATALYTIC CRACKER DISTILLATES)

ADN (EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY INLAND WATERWAYS)
UN1203, GASOLINE, 3, II, ENVIRONMENTALLY HAZARDOUS, (HYDROCARBONS, C3-11, CATALYTIC CRACKER DISTILLATES)

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

SECTION 15: Regulatory information

National legislation

SARA 311/312 Hazards	:	Flammable (gases, aerosols, liquids, or solids) Germ cell mutagenicity Reproductive toxicity Specific target organ toxicity (single or repeated exposure) Aspiration hazard Skin corrosion or irritation Serious eye damage or eye irritation Carcinogenicity

EPCRA - EMERGENCY PLANNING COMMUNITY RIGHT - TO – KNOW

CERCLA Reportable Quantity	:	699 lbs Benzene, dimethyl-
SARA 302 Reportable Quantity	:	This material does not contain any components with a SARA 302 RQ.
SARA 302 Threshold Planning Quantity	:	This material does not contain any components with a section 302 EHS TPQ.
SARA 304 Reportable Quantity	:	This material does not contain any components with a section 304 EHS RQ.
SARA 313 Components	:	The following components are subject to reporting levels established by SARA Title III, Section 313:
	:	Benzene, dimethyl- - 1330-20-7 Toluene - 108-88-3 1,2,4-Trimethylbenzene - 95-63-6 Ethylbenzene - 100-41-4 n-hexane - 110-54-3 Cyclohexane - 110-82-7 Naphthalene - 91-20-3 Benzene - 71-43-2 Isoprene - 78-79-5 1,3-Butadiene - 106-99-0

Clean Air Act

Ozone-Depletion Potential : This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

The following chemical(s) are listed as HAP under the U.S. Clean Air Act, Section 112 (40 CFR 61):

: Benzene, dimethyl- - 1330-20-7
Toluene - 108-88-3
Ethylbenzene - 100-41-4
n-hexane - 110-54-3
Naphthalene - 91-20-3
Benzene - 71-43-2

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

The following chemical(s) are listed under the U.S. Clean Air Act Section 111 SOCMI Intermediate or Final VOC's (40 CFR 60.489):

: Benzene, dimethyl- - 1330-20-7
Toluene - 108-88-3
Ethylbenzene - 100-41-4
Cyclohexane - 110-82-7
Benzene - 71-43-2

US State Regulations

Pennsylvania Right To Know

: Hydrocarbons, C3-11, catalytic cracker distillates - 68476-46-0
Naphtha (petroleum), light alkylate - 64741-66-8
Naphtha (petroleum), light catalytic reformed - 64741-63-5
Tail gas (petroleum), catalytic cracked distillate and catalytic cracked naphtha fractionation absorber - 68307-98-2
Benzene, dimethyl- - 1330-20-7
Toluene - 108-88-3
1,2,4-Trimethylbenzene - 95-63-6
Ethylbenzene - 100-41-4
n-hexane - 110-54-3
Cyclohexane - 110-82-7
Naphthalene - 91-20-3
Benzene - 71-43-2
Isoprene - 78-79-5
1,3-Butadiene - 106-99-0

California Prop. 65 Components : WARNING: This product can expose you to chemicals including [listed below], which is [are] known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov/food.

Benzene 71-43-2

WARNING: This product can expose you to chemicals including [listed below], which is [are] known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

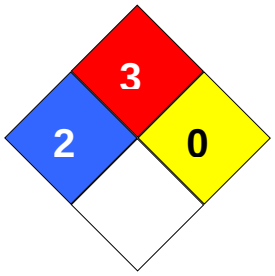
Toluene 108-88-3

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	:	On or in compliance with the active portion of the TSCA inventory
Canada DSL	:	All components of this product are on the Canadian DSL
Australia AICS	:	On the inventory, or in compliance with the inventory
New Zealand NZIoC	:	Not in compliance with the inventory
Japan ENCS	:	Not in compliance with the inventory
Korea KECI	:	A substance(s) in this product was not registered, notified to be registered, or exempted from registration by CPChem according to K-REACH regulations. Importation or manufacture of this product is still permitted provided the Korean Importer of Record has themselves notified the substance.
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

NFPA Classification : Health Hazard: 2
Fire Hazard: 3
Reactivity Hazard: 0



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 Values	PRNT	Presumed Not Toxic
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%		