SAFETY DATA SHEET

HCR Plus

Section 1. Identification

GHS product identifier : HCR Plus

Other means of identification : Leaded racing gasoline

Product code : 135600

Product use : Leaded racing gasoline
California Air Resources Board (CARB): This product cannot be sold, offered for sale, supplied or offered for supply for motor vehicles in California except in competition racing. Not Legal For Use in Any Other Motor Vehicle.

Supplier's details : Sunoco LP
3801 West Chester Pike
Newtown Square, Pennsylvania 19073
Sunoco Race Fuels email: performanceproducts@sunoco.com
http://www.sunocoracefuels.com

e-mail address of person responsible for this SDS : sunocomsds@sunoco.com

Emergency telephone number (with hours of operation) : Sunoco LP: (800) 964-8861
Chemtrec: 1-800-424-9300 (Available 24 hours/7 days per week)

Product Safety Information: 1-888-567-3066

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : FLAMMABLE LIQUIDS - Category 2
SKIN IRRITATION - Category 2
CARCINOGENICITY - Category 1B
TOXIC TO REPRODUCTION - Category 1A
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2
ASPIRATION HAZARD - Category 1

GHS label elements

Hazard pictograms :

Signal word : Danger

Hazard statements : Highly flammable liquid and vapor.
May be fatal if swallowed and enters airways.
Causes skin irritation.
May cause drowsiness or dizziness.
May cause cancer.
May damage fertility or the unborn child.
May cause damage to organs through prolonged or repeated exposure. (cardiovascular system, central nervous system (CNS), kidneys, liver, respiratory system)

Precautionary statements

Section 2. Hazards identification

Prevention : Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves, protective clothing and eye or face protection. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use explosion-proof electrical, ventilating or lighting equipment. Use non-sparking tools. Take action to prevent static discharges. Ground and bond container and receiving equipment. Use only outdoors or in a well-ventilated area. Do not breathe dust or mist. Wash hands thoroughly after handling.

Response : IF exposed or concerned: Get medical advice or attention. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor if you feel unwell. IF SWALLOWED: Immediately call a POISON CENTER or doctor. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. IF ON SKIN: Wash with plenty of water. If skin irritation occurs: Get medical advice or attention.

Storage : Store locked up. Store in a well-ventilated place. Keep container tightly closed. Keep cool.

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

Hazards not otherwise classified : Static-accumulating flammable liquid. Vapors may form explosive mixtures with air.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Other means of identification : Leaded racing gasoline

Product code : 135600

Ingredient name	%	CAS number
Naphtha (petroleum), light alkylate	≥75 - ≤90	64741-66-8
toluene	≥25 - ≤50	108-88-3
isopentane	≥1 - ≤11	78-78-4
Tetraethyl Lead	≥0.1 - ≤0.5	78-00-2
xylene	≥0.005 - ≤0.01	1330-20-7
ethylbenzene	≥0.001 - ≤0.01	100-41-4
benzene	≥0.001 - ≤0.01	71-43-2

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified and hence require reporting in this section.

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

Section 4. First aid measures

Description of necessary 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.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open

Section 4. First aid measures

airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Skin contact : Flush contaminated skin with plenty of 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. 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.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : No known significant effects or critical hazards.

Inhalation : Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness.

Skin contact : Causes skin irritation.

Ingestion : Can cause central nervous system (CNS) depression. May be fatal if swallowed and enters airways.

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
reduced fetal weight
increase in fetal deaths
skeletal malformations

Skin contact : Adverse symptoms may include the following:
irritation
redness
reduced fetal weight
increase in fetal deaths
skeletal malformations

Ingestion : Adverse symptoms may include the following:
nausea or vomiting
reduced fetal weight
increase in fetal deaths
skeletal malformations

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments : No specific treatment.

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.

Section 4. First aid measures

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Use dry chemical, CO2, water spray (fog) or foam. Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : Do not use water jet.

Specific hazards arising from the chemical : Highly flammable liquid and vapor. Runoff to sewer may create fire or explosion hazard. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
asphyxiants

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.

Remark : Highly flammable liquid and vapor.

Remark (Explosibility) : Vapors may form explosive mixtures with air.

Section 6. Accidental release measures

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. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialized 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".

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).

Methods and materials for containment and cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. 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). 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

Section 6. Accidental release measures

information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not swallow. 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. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. 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.

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. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
toluene	**OSHA PEL Z2 (United States, 2/2013).** TWA: 200 ppm 8 hours. CEIL: 300 ppm AMP: 500 ppm 10 minutes. **NIOSH REL (United States, 10/2020).** TWA: 100 ppm 10 hours. TWA: 375 mg/m³ 10 hours. STEL: 150 ppm 15 minutes. STEL: 560 mg/m³ 15 minutes. **ACGIH TLV (United States, 1/2021).** **Ototoxicant.** TWA: 20 ppm 8 hours. **OSHA PEL 1989 (United States, 3/1989).** TWA: 100 ppm 8 hours. TWA: 375 mg/m³ 8 hours. STEL: 150 ppm 15 minutes. STEL: 560 mg/m³ 15 minutes.
isopentane	**ACGIH TLV (United States, 1/2021).** TWA: 1000 ppm 8 hours.
tetraethyllead	**ACGIH TLV (United States, 1/2022).**

Section 8. Exposure controls/personal protection

	Absorbed through skin. TWA: 0.1 mg/m³, (as Pb) 8 hours. **NIOSH REL (United States, 10/2020).** **Absorbed through skin.** TWA: 0.075 mg/m³, (as Pb) 10 hours. **OSHA PEL (United States, 5/2018).** **Absorbed through skin.** TWA: 0.075 mg/m³, (as Pb) 8 hours. **OSHA PEL 1989 (United States, 3/1989).** **Absorbed through skin.** TWA: 0.08 mg/m³, (as Pb) 8 hours.
xylene	**ACGIH TLV (United States, 1/2021).** TWA: 100 ppm 8 hours. TWA: 434 mg/m³ 8 hours. STEL: 150 ppm 15 minutes. STEL: 651 mg/m³ 15 minutes. **OSHA PEL (United States, 5/2018).** TWA: 100 ppm 8 hours. TWA: 435 mg/m³ 8 hours. **OSHA PEL 1989 (United States, 3/1989).** TWA: 100 ppm 8 hours. TWA: 435 mg/m³ 8 hours. STEL: 150 ppm 15 minutes. STEL: 655 mg/m³ 15 minutes.
ethylbenzene	**ACGIH TLV (United States, 1/2021).** TWA: 20 ppm 8 hours. **NIOSH REL (United States, 10/2020).** TWA: 100 ppm 10 hours. TWA: 435 mg/m³ 10 hours. STEL: 125 ppm 15 minutes. STEL: 545 mg/m³ 15 minutes. **OSHA PEL (United States, 5/2018).** TWA: 100 ppm 8 hours. TWA: 435 mg/m³ 8 hours. **OSHA PEL 1989 (United States, 3/1989).** TWA: 100 ppm 8 hours. TWA: 435 mg/m³ 8 hours. STEL: 125 ppm 15 minutes. STEL: 545 mg/m³ 15 minutes.
benzene	**ACGIH TLV (United States, 1/2021).** **Absorbed through skin.** TWA: 0.5 ppm 8 hours. TWA: 1.6 mg/m³ 8 hours. STEL: 2.5 ppm 15 minutes. STEL: 8 mg/m³ 15 minutes. **OSHA PEL Z2 (United States, 2/2013).** TWA: 10 ppm 8 hours. CEIL: 25 ppm AMP: 50 ppm 10 minutes. **NIOSH REL (United States, 10/2020).** TWA: 0.1 ppm 10 hours. STEL: 1 ppm 15 minutes. **OSHA PEL (United States, 5/2018).** TWA: 1 ppm 8 hours. STEL: 5 ppm 15 minutes. **OSHA PEL 1989 (United States, 3/1989).** TWA: 1 ppm 8 hours. STEL: 5 ppm 15 minutes.

Section 8. Exposure controls/personal protection

Biological exposure indices

Ingredient name	Exposure indices
toluene	**ACGIH BEI (United States, 1/2022)** BEI: 0.03 mg/l, toluene [in urine]. Sampling time: end of shift. BEI: 0.3 mg/g creatinine, o-cresol [in urine]. Sampling time: end of shift. BEI: 0.02 mg/l, toluene [in blood]. Sampling time: prior to last shift of workweek.
xylene	**ACGIH BEI (United States, 1/2022) [XYLENES]** BEI: 1.5 g/g creatinine, methylhippuric acids [in urine]. Sampling time: end of shift.
ethylbenzene	**ACGIH BEI (United States, 1/2022)** BEI: 0.15 g/g creatinine, sum of mandelic acid and phenylglyoxylic acid [in urine]. Sampling time: end of shift.
benzene	**ACGIH BEI (United States, 1/2022)** BEI: 25 µg/g creatinine, S-phenylmercapturic acid [in urine]. Sampling time: end of shift. BEI: 500 µg/g creatinine, t,t-muconic acid [in urine]. Sampling time: end of shift.

Appropriate engineering controls : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

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.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
Recommended: > 8 hours (breakthrough time): Viton®, Teflon, nitrile rubber.

Section 8. Exposure controls/personal protection

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.
Recommended: Ensure an MSHA/NIOSH-approved respirator or equivalent is used.

SECTION 9: Physical and chemical properties and safety characteristics

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

Appearance

Physical state : Liquid. [Clear.]

Color : Orange.

Odor : Gasoline

Odor threshold : <1 ppm

pH : Not applicable.

Melting point/freezing point : Not available.

Boiling point, initial boiling point, and boiling range : 38 to 127°C (100.4 to 260.6°F) [ASTM D 86]

Flash point : -40°C (-40°F)

Flammability : Highly flammable liquid and vapor.

Lower and upper explosion limit/flammability limit : Lower: 1.5%
Upper: 7.6%

Vapor pressure : 5 - 6 PSI

	Vapor Pressure at 20˚C			Vapor pressure at 50˚C		
Ingredient name	**mm Hg**	**kPa**	**Method**	**mm Hg**	**kPa**	**Method**
isopentane	592.55	79				
benzene	75.01	10				
Naphtha (petroleum), light alkylate	30	4				
toluene	23.17	3.1				
ethylbenzene	9.3	1.2				
xylene	6.7	0.89				
lead alkyls	0.2	0.027				

Relative vapor density : Not available.

Relative density : 0.737 [ASTM D 287]

Solubility in water : 0 - 15%

Partition coefficient: n-octanol/water : 2 to 7

Auto-ignition temperature : 280°C (536°F)

Decomposition temperature : Not available.

Viscosity : Not available.

Explosive properties : Vapors may form explosive mixtures with air.

Oxidizing properties : Not available.

SECTION 9: Physical and chemical properties and safety characteristics

Particle characteristics

Median particle size : Not applicable.

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

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. Vapors may form explosive mixtures with air.

Incompatible materials : Strong oxidizing materials
strong acids
strong alkalis
Halogens
halogenated compounds
peroxides
chlorine

Hazardous decomposition products : Hazardous decomposition products
carbon monoxide
carbon dioxide
asphyxiants

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Naphtha (petroleum), light alkylate	LC50 Inhalation Vapor	Rat	>6.31 mg/l	4 hours
	LC50 Inhalation Vapor	Rat - Male, Female	5610 mg/m³	4 hours
	LD50 Dermal	Rabbit - Male, Female	>2000 mg/kg	-
	LD50 Oral	Rat - Male, Female	>5000 mg/kg	-
toluene	LC50 Inhalation Vapor	Rat - Male, Female	>20 mg/l	4 hours
	LD50 Dermal	Rabbit	12000 mg/kg	-
	LD50 Oral	Rat	2600 mg/kg	-
isopentane	LC50 Inhalation Gas.	Rat - Male, Female	>20000 ppm	4 hours
	LC50 Inhalation Vapor	Rat	280000 mg/m³	4 hours

Section 11. Toxicological information

	LD50 Dermal	Rat	>5000 mg/kg	-
	LD50 Oral	Rat	>2000 mg/kg	-
tetraethyllead	LC50 Inhalation Vapor	Rat	0.85 mg/l	1 hours
	LC50 Inhalation Vapor	Rat	850 mg/m³	1 hours
	LD50 Oral	Rat	12.3 mg/kg	-
	LD50 Oral	Rat - Male, Female	14.18 mg/kg	-
	LDLo Dermal	Dog	547 mg/kg	-
xylene	LC50 Inhalation Gas.	Rat	5000 ppm	4 hours
	LC50 Inhalation Vapor	Rat - Male	6700 ppm	4 hours
	LD50 Dermal	Rabbit - Male	12126 mg/kg	-
	LD50 Dermal	Rabbit	>1700 mg/kg	-
	LD50 Oral	Rat	3500 mg/kg	-
ethylbenzene	LC50 Inhalation Vapor	Rat	17.4 mg/l	4 hours
	LD50 Dermal	Rabbit	15400 mg/kg	-
	LD50 Oral	Rat	3500 mg/kg	-
benzene	LC50 Inhalation Vapor	Rabbit	44.66 mg/l	4 hours
	LC50 Inhalation Vapor	Rat - Female	43.7 mg/l	4 hours
	LD50 Dermal	Rabbit	>8200 mg/kg	-
	LD50 Oral	Rat - Male	>2000 mg/kg	-

Conclusion/Summary : May be fatal if swallowed and enters airways.

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
toluene	Eyes - Non-irritating to the eyes.	Rabbit	-	1 minutes 0.1 ml	7 days
	Skin - Irritant	Rabbit	-	72 hours 0.5 ml	-
xylene	Eyes - Mild irritant	Rabbit	-	1 hours	7 days
	Skin - Irritant	Rabbit	-	4 hours 0.5 ml	7 days
benzene	Eyes - Irritant	Rabbit	-	1 minutes 2 drops to eye, undiluted	72 hours
	Skin - Irritant	Rabbit	-	4 hours 0.5 ml	72 hours

Conclusion/Summary

Skin : Causes skin irritation.

Eyes : Not available.

Respiratory : Not available.

Sensitization

Section 11. Toxicological information

Product/ingredient name	Route of exposure	Species	Result
xylene	skin	Mouse	Not sensitizing

Conclusion/Summary

Skin : Based on available data, the classification criteria are not met.

Mutagenicity

Product/ingredient name	Test	Experiment	Result
benzene	474 Mammalian Erythrocyte Micronucleus Test	Experiment: In vivo Subject: Mammalian-Animal Cell: Somatic	Positive

Conclusion/Summary : Based on available data, the classification criteria are not met.

Carcinogenicity

Product/ingredient name	Result	Species	Dose	Exposure
benzene	Positive - Oral - LOAEL	Rat - Male, Female	>25 mg/kg	103 weeks; 5 days per week

Conclusion/Summary : May cause cancer.

Classification

Product/ingredient name	OSHA	IARC	NTP
toluene	-	3	-
tetraethyllead	-	3	Reasonably anticipated to be a human carcinogen.
xylene	-	3	-
ethylbenzene	+	2B	-
benzene	+	1	Known to be a human carcinogen.

Reproductive toxicity

Product/ingredient name	Maternal toxicity	Fertility	Developmental toxin	Species	Dose	Exposure
toluene	Negative	Negative	Negative	Rat - Male, Female	Inhalation: 600 ppm	90 days; 6 hours per day
	-	Positive	-	Rat - Male	Inhalation: 2000 ppm	90 days; 6 hours per day
	-	Negative	Positive	Rat - Female	Inhalation: 2000 ppm	90 days; 6 hours per day
tetraethyllead	Positive	-	Positive	Rat	Oral: 1 mg/kg	-

Conclusion/Summary : May damage fertility.

Teratogenicity

Conclusion/Summary : May damage the unborn child.

Specific target organ toxicity (single exposure)

Section 11. Toxicological information

Name	Category	Route of exposure	Target organs
Naphtha (petroleum), light alkylate	Category 3	-	Narcotic effects
toluene	Category 3	-	Narcotic effects
isopentane	Category 3	-	Narcotic effects

Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
toluene	Category 2	-	cardiovascular system, central nervous system (CNS), kidneys, liver, respiratory system
tetraethyllead	Category 2	-	-
ethylbenzene	Category 2	-	hearing organs

Aspiration hazard

Name	Result
HCR Plus	ASPIRATION HAZARD - Category 1
Naphtha (petroleum), light alkylate	ASPIRATION HAZARD - Category 1
toluene	ASPIRATION HAZARD - Category 1
isopentane	ASPIRATION HAZARD - Category 1
ethylbenzene	ASPIRATION HAZARD - Category 1
benzene	ASPIRATION HAZARD - Category 1

Information on the likely routes of exposure : Not available.

Potential acute health effects

Eye contact : No known significant effects or critical hazards.

Inhalation : Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness.

Skin contact : Causes skin irritation.

Ingestion : Can cause central nervous system (CNS) depression. May be fatal if swallowed and enters airways.

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
reduced fetal weight
increase in fetal deaths
skeletal malformations

Section 11. Toxicological information

Skin contact : Adverse symptoms may include the following:
irritation
redness
reduced fetal weight
increase in fetal deaths
skeletal malformations

Ingestion : Adverse symptoms may include the following:
nausea or vomiting
reduced fetal weight
increase in fetal deaths
skeletal malformations

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

Not available.

Conclusion/Summary : Not available.

General : May cause damage to organs through prolonged or repeated exposure.

Carcinogenicity : May cause cancer. Risk of cancer depends on duration and level of exposure.

Mutagenicity : No known significant effects or critical hazards.

Reproductive toxicity : May damage fertility or the unborn child.

Numerical measures of toxicity

Acute toxicity estimates

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapors) (mg/l)	Inhalation (dusts and mists) (mg/l)
Naphtha (petroleum), light alkylate	N/A	2500	N/A	N/A	N/A
isopentane	N/A	N/A	N/A	280	N/A
tetraethyllead	0.5	5	N/A	0.5	N/A
xylene	3500	1100	5000	N/A	N/A
ethylbenzene	3500	15400	N/A	17.4	N/A
benzene	2500	N/A	N/A	43.7	N/A

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
Naphtha (petroleum), light alkylate	Acute EC50 30000 mg/l	Algae - Pseudokirchneriella subcapitata	72 hours
	Acute LC50 8.2 mg/l	Fish - Pimephales promelas	96 hours
toluene	EC50 433 mg/l Fresh water	Algae - Pseudokirchneriella subcapitata	96 hours
	EC50 5.6 to 9.83 mg/l Fresh water	Daphnia - Daphnia magna	48 hours
	LC50 11 to 15 mg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours
isopentane	EC50 2.3 mg/l Fresh water	Daphnia - Daphnia magna	48 hours
tetraethyllead	Acute LC50 85 µg/l Marine water	Crustaceans - Artemia salina	48 hours
	Acute LC50 0.23 mg/l Marine water	Fish - Pleuronectes platessa	96 hours
xylene	EC50 0.0084 mg/l	Micro-organism	24 hours
	LC50 0.6 mg/l Fresh water	Daphnia - Water Flea	48 hours
	LC50 2.661 to 4.093 mg/l Fresh water	Fish - Pimephales promelas	96 hours
ethylbenzene	EC50 1.7 to 7.6 mg/l	Algae - Pseudokirchneriella subcapitata	72 hours
	EC50 1.8 to 2.4 mg/l	Daphnia - Daphnia magna	48 hours
	EC50 96 mg/l	Micro-organism	24 hours
	LC50 9.1 to 15.6 mg/l	Fish - Pimephales promelas	96 hours
benzene	EC50 29 mg/l Fresh water	Algae - Pseudokirchneriella subcapitata	72 hours
	EC50 8.76 to 15.6 mg/l Fresh water	Daphnia - Daphnia magna	48 hours
	LC50 28.6 mg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours

Conclusion/Summary : Toxic to aquatic life with long lasting effects.

Persistence and degradability

Conclusion/Summary : There are no data available on the mixture itself.

Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
HCR Plus	2 to 7	-	high
Naphtha (petroleum), light alkylate	-	10 to 2500	high
toluene	2.73	90	low
isopentane	3	171	low
tetraethyllead	4.15	460	low
xylene	3.12	8.1 to 25.9	low
ethylbenzene	3.6	-	low

Section 12. Ecological information

benzene	2.13	11	low

Mobility in soil

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

Mobility : Not available.

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

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. 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.

United States - RCRA Toxic hazardous waste "U" List

Ingredient	CAS #	Status	Reference number
Toluene	108-88-3	Listed	U220

Section 14. Transport information

	DOT Classification	TDG Classification	Mexico Classification	ADR/RID	IMDG	IATA
UN number	UN1203	UN1203	UN1203	UN1203	UN1203	UN1203
UN proper shipping name	Gasoline	GASOLINE	GASOLINA	GASOLINE	GASOLINE	Gasoline
Transport hazard class(es)	3	3	3	3	3	3
Label						
Packing group	II	II	II	II	II	II
Environmental hazards	No.	No.	No.	Yes.	Marine Pollutant: Yes	Yes. The environmentally hazardous substance mark is not required.

Section 14. Transport information

Additional information

DOT Classification : **Reportable quantity** 2000 lbs / 908 kg [325.47 gal / 1232 L]. Package sizes shipped in quantities less than the product reportable quantity are not subject to the RQ (reportable quantity) transportation requirements.
Limited quantity Yes.
Packaging instruction Exceptions: 150. Non-bulk: 202. Bulk: 242.
Quantity limitation Passenger aircraft/rail: 5 L. Cargo aircraft: 60 L.
Special provisions 144, 177, B1, B33, IB2, T4

TDG Classification : Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.18-2.19 (Class 3).
Explosive Limit and Limited Quantity Index 30
Passenger Carrying Vessel Index 100
Passenger Carrying Road or Rail Index 5
Special provisions 17, 88, 98, 150

Mexico Classification : **Special provisions** 243

ADR/RID : The environmentally hazardous substance mark is not required when transported in sizes of ≤5 L or ≤5 kg.
Hazard identification number 33
Limited quantity 1 L
Special provisions 243, 534, 664
Tunnel code (D/E)

IMDG : The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg.
Emergency schedules F-E, S-E
Special provisions 243

IATA : The environmentally hazardous substance mark may appear if required by other transportation regulations.
Quantity limitation Passenger and Cargo Aircraft: 5 L. Packaging instructions: 353. Cargo Aircraft Only: 60 L. Packaging instructions: 364. Limited Quantities - Passenger Aircraft: 1 L. Packaging instructions: Y341.
Special provisions A100

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

Transport in bulk according to IMO instruments : Not applicable.

Section 15. Regulatory information

U.S. Federal regulations : **TSCA 4(a) proposed test rules**: tetraethyllead
TSCA 8(a) CDR Exempt/Partial exemption: Not determined
Clean Water Act (CWA) 307: toluene; tetraethyllead; ethylbenzene; benzene
Clean Water Act (CWA) 311: toluene; tetraethyllead; xylene; ethylbenzene; benzene
Clean Air Act (CAA) 112 regulated flammable substances: isopentane

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Listed

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

Section 15. Regulatory information

SARA 302/304

Composition/information on ingredients

Name	%	EHS	SARA 302 TPQ		SARA 304 RQ	
			(lbs)	(gallons)	(lbs)	(gallons)
tetraethyllead	≥0.1 - ≤0.5	Yes.	100	7.1	10	0.71

SARA 304 RQ : 2000 lbs / 908 kg [325.5 gal / 1232 L]

SARA 311/312

Classification : FLAMMABLE LIQUIDS - Category 2
SKIN IRRITATION - Category 2
CARCINOGENICITY - Category 1B
TOXIC TO REPRODUCTION - Category 1A
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2
ASPIRATION HAZARD - Category 1

Composition/information on ingredients

Name	%	Classification
Naphtha (petroleum), light alkylate	≥70 - ≤85	FLAMMABLE LIQUIDS - Category 2 SKIN IRRITATION - Category 2 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3 ASPIRATION HAZARD - Category 1
toluene	≥15 - ≤30	FLAMMABLE LIQUIDS - Category 2 SKIN IRRITATION - Category 2 TOXIC TO REPRODUCTION - Category 2 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2 ASPIRATION HAZARD - Category 1
isopentane	≥1 - ≤11	FLAMMABLE LIQUIDS - Category 1 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3 ASPIRATION HAZARD - Category 1
tetraethyllead	≥0.01 - ≤0.05	FLAMMABLE LIQUIDS - Category 4 ACUTE TOXICITY (oral) - Category 1 ACUTE TOXICITY (dermal) - Category 1 ACUTE TOXICITY (inhalation) - Category 2 CARCINOGENICITY - Category 1B TOXIC TO REPRODUCTION - Category 1A SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2
xylene	≥0.005 - ≤0.01	FLAMMABLE LIQUIDS - Category 2 ACUTE TOXICITY (dermal) - Category 4 ACUTE TOXICITY (inhalation) - Category 4 SKIN IRRITATION - Category 2
ethylbenzene	≥0.001 - ≤0.01	FLAMMABLE LIQUIDS - Category 3 ACUTE TOXICITY (inhalation) - Category 4 CARCINOGENICITY - Category 1A SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2 ASPIRATION HAZARD - Category 1
benzene	≥0.001 - ≤0.01	FLAMMABLE LIQUIDS - Category 2

Section 15. Regulatory information

		SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A GERM CELL MUTAGENICITY - Category 1B CARCINOGENICITY - Category 1A SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 1 ASPIRATION HAZARD - Category 1

SARA 313

	Product name	CAS number	%
Form R - Reporting requirements	toluene	108-88-3	≥15 - ≤30
Supplier notification	toluene	108-88-3	≥15 - ≤30

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

State regulations

Massachusetts : The following components are listed: TOLUENE; ISOPENTANE

New York : The following components are listed: Toluene

New Jersey : The following components are listed: TOLUENE; ISOPENTANE; TETRAETHYL LEAD

Pennsylvania : The following components are listed: BENZENE, METHYL-; BUTANE, 2-METHYL-

California Prop. 65

⚠ **WARNING**: This product can expose you to chemicals including Benzene, which is known to the State of California to cause cancer and birth defects or other reproductive harm. This product can expose you to chemicals including Lead and lead compounds and Ethylbenzene, which are known to the State of California to cause cancer, and Toluene, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

Ingredient name	No significant risk level	Maximum acceptable dosage level
Toluene	-	Yes.
Lead and lead compounds	-	-
Ethylbenzene	Yes.	-
Benzene	Yes.	Yes.

VOC

Calculation method	Product as-supplied	Product ready-for-use
Without volume exclusion	932.5 g/l 100 % (w/w)	Not applicable
With volume exclusion [water excluded]	932.5 g/l	Not applicable
With volume exclusion [water not excluded]	932.5 g/l	Not applicable

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Ingredient name	List name	Status
Tetraethyl lead; Plumbane, tetraethyl; TEL	Industrial	Listed

Section 15. Regulatory information

UNECE Aarhus Protocol on POPs and Heavy Metals

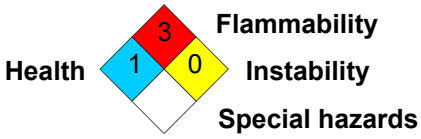
Not listed.

Inventory list

Australia	:	All components are listed or exempted.
Canada	:	All components are listed or exempted.
China	:	All components are listed or exempted.
Eurasian Economic Union	:	**Russian Federation inventory**: All components are listed or exempted.
New Zealand	:	All components are listed or exempted.
Philippines	:	All components are listed or exempted.
Republic of Korea	:	All components are listed or exempted.
Taiwan	:	All components are listed or exempted.
United States	:	All components are active or exempted.
Viet Nam	:	All components are listed or exempted.

Section 16. Other information

National Fire Protection Association (U.S.A.)



Procedure used to derive the classification

Classification	Justification
FLAMMABLE LIQUIDS - Category 2	On basis of test data
SKIN IRRITATION - Category 2	Calculation method
CARCINOGENICITY - Category 1B	Calculation method
TOXIC TO REPRODUCTION - Category 1A	Calculation method
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3	Calculation method
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2	Calculation method
ASPIRATION HAZARD - Category 1	Expert judgment

History

Date of printing	:	12/08/2022
Date of issue/Date of revision	:	08/03/2022
Date of previous issue	:	01/03/2017
Version	:	2
Key to abbreviations	:	ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road ATE = Acute Toxicity Estimate BCF = Bioconcentration Factor DOT = Department of Transportation GHS = Globally Harmonized System of Classification and Labelling of Chemicals IATA = International Air Transport Association IBC = Intermediate Bulk Container IMDG = International Maritime Dangerous Goods LogPow = logarithm of the octanol/water partition coefficient MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution) N/A = Not available RID = The Regulations concerning the International Carriage of Dangerous Goods by Rail SGG = Segregation Group TDG = Transportation of Dangerous Goods

Section 16. Other information

UN = United Nations

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Indicates information that has changed from previously issued version.

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