



# SAFETY DATA SHEET

## 1. Identification

<b>Product identifier</b>	<b>UNLEADED GASOLINE</b>
<b>Other means of identification</b>	
<b>SDS number</b>	002-GHS
<b>Synonyms</b>	Regular/Premium/Midgrade - Unleaded Gasoline * RFG - Reformulated Unleaded Gasoline * Conventional Unleaded Gasoline * Premium Conventional Gasoline * Oxygenated Unleaded Gasoline * Non-Oxygenated Unleaded Gasoline * CARB (California Air Resource Board) Unleaded Gasoline * PBOB - Premium Blendstock for Oxygenate Blending * RBOB - Reformulated Blendstock for Oxygenate Blending * Premium RBOB * CBOB - Conventional Blendstock for Oxygenate Blending * Petrol * Motor Fuel
<b>Recommended use</b>	Motor fuels. Blendstock for motor fuels.
<b>Recommended restrictions</b>	No other uses are advised.
<b>Manufacturer/Importer/Supplier/Distributor information</b>	
<b>Manufacturer/Supplier</b>	Valero Marketing & Supply Company and Affiliates One Valero Way San Antonio, TX 78269-6000
<b>General Assistance</b>	210-345-4593
<b>E-Mail</b>	CorpHSE@valero.com
<b>Contact Person</b>	Industrial Hygienist
<b>Emergency Telephone</b>	24 Hour Emergency 866-565-5220 1-800-424-9300 (CHEMTREC USA)

## 2. Hazard(s) identification

<b>Physical hazards</b>	Flammable liquids	Category 1
<b>Health hazards</b>	Skin corrosion/irritation	Category 2
	Germ cell mutagenicity	Category 1B
	Carcinogenicity	Category 1B
	Reproductive toxicity	Category 2
	Specific target organ toxicity, single exposure	Category 3 narcotic effects
	Aspiration hazard	Category 1
<b>Environmental hazards</b>	Hazardous to the aquatic environment, long-term hazard	Category 2
<b>OSHA defined hazards</b>	Not classified.	
<b>Label elements</b>		



<b>Signal word</b>	Danger
<b>Hazard statement</b>	Extremely flammable liquid and vapor. May be fatal if swallowed and enters airways. Causes skin irritation. May cause drowsiness or dizziness. May cause genetic defects. May cause cancer. Suspected of damaging fertility or the unborn child. Toxic to aquatic life with long lasting effects.
<b>Precautionary statement</b>	
<b>Prevention</b>	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Avoid breathing mist/vapors. Wash thoroughly after handling. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection.

<b>Response</b>	If swallowed: Immediately call a poison center/doctor. Do NOT induce vomiting. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If inhaled: Remove person to fresh air and keep comfortable for breathing. If exposed or concerned: Get medical advice/attention. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse. In case of fire: Use water fog, alcohol resistant foam, dry chemical powder, carbon dioxide for extinction. Collect spillage.
<b>Storage</b>	Keep cool. Store in a well-ventilated place. Keep container tightly closed. Store locked up.
<b>Disposal</b>	Dispose of contents/container in accordance with local/regional/national regulations.
<b>Hazard(s) not otherwise classified (HNOC)</b>	Static accumulating flammable liquid can become electrostatically charged even in bonded and grounded equipment.
<b>Supplemental information</b>	None.

### 3. Composition/information on ingredients

#### Mixtures

Chemical name	CAS number	%
Gasoline	86290-81-5	80 - 100

#### Hazardous Components of Complex Mixtures

Chemical name	CAS number	%
Octane (All isomers)	111-65-9	0 - 70
Toluene	108-88-3	0 - 30
Hexane (Other Isomers)	96-14-0	5 - 25
Xylene (o, m, p isomers)	1330-20-7	0 - 25
Butane (normal, iso and butylene)	106-97-8	0 - 15
Ethanol	64-17-5	≤ 10
1,2,4-Trimethylbenzene	95-63-6	0 - 6
Pentane (mixed isomers)	109-66-0	1 - 5
n-Heptane	142-82-5	1 - 5
Ethylbenzene	100-41-4	0 - 5
Cumene	98-82-8	≤ 5
Benzene	71-43-2	< 5
n-Hexane	110-54-3	0 - 3
Cyclohexane	110-82-7	0 - 3

**Composition comments** Note: Components of hazardous substances/mixtures are listed for disclosure purposes. Ranges may represent maximum regulatory limits or apply to multiple product grades (see Synonyms - Section 1). Typical and actual concentrations of individual components may be substantially less than the maximum values shown or zero, depending on the product grade or specifications.

### 4. First-aid measures

<b>Inhalation</b>	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a poison center or doctor/physician if they feel unwell.
<b>Skin contact</b>	Take off immediately all contaminated clothing. Rinse skin with water/shower. If skin irritation occurs: Get medical advice/attention. Wash contaminated clothing before reuse.
<b>Eye contact</b>	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Get medical attention if irritation develops and persists.
<b>Ingestion</b>	Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.
<b>Most important symptoms/effects, acute and delayed</b>	Aspiration may cause pulmonary edema and pneumonitis. May cause drowsiness and dizziness. Headache. Nausea, vomiting. Direct contact with eyes may cause temporary irritation. Skin irritation. May cause redness and pain.
<b>Indication of immediate medical attention and special treatment needed</b>	Provide general supportive measures and treat symptomatically. Thermal burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Keep victim under observation. Symptoms may be delayed.

<b>General information</b>	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.
<b>5. Fire-fighting measures</b>	
<b>Suitable extinguishing media</b>	Water fog. Alcohol resistant foam. Dry chemical powder. Carbon dioxide (CO2).
<b>Unsuitable extinguishing media</b>	Do not use water jet as an extinguisher, as this will spread the fire.
<b>Specific hazards arising from the chemical</b>	Vapors may form explosive mixtures with air. Vapors may travel considerable distance to a source of ignition and flash back. During fire, gases hazardous to health may be formed.
<b>Special protective equipment and precautions for firefighters</b>	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
<b>Fire fighting equipment/instructions</b>	In case of fire and/or explosion do not breathe fumes. Move containers from fire area if you can do so without risk.
<b>Specific methods</b>	Use standard firefighting procedures and consider the hazards of other involved materials.
<b>General fire hazards</b>	Extremely flammable liquid and vapor.

## 6. Accidental release measures

<b>Personal precautions, protective equipment and emergency procedures</b>	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Wear appropriate protective equipment and clothing during clean-up. Avoid breathing mist/vapors. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
<b>Methods and materials for containment and cleaning up</b>	Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep combustibles (wood, paper, oil, etc.) away from spilled material. Take precautionary measures against static discharge. Use only non-sparking tools. The product is immiscible with water and will spread on the water surface. This material is classified as a water pollutant under the Clean Water Act and should be prevented from contaminating soil or from entering sewage and drainage systems which lead to waterways.  Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Following product recovery, flush area with water. Retain and dispose of contaminated wash water.  Small Spills: Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. Clean surface thoroughly to remove residual contamination.  Never return spills to original containers for re-use. Put material in suitable, covered, labeled containers. For waste disposal, see section 13 of the SDS.
<b>Environmental precautions</b>	Avoid release to the environment. Inform appropriate managerial or supervisory personnel of all environmental releases. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

## 7. Handling and storage

<b>Precautions for safe handling</b>	Before entering storage tanks and commencing any operation in a confined area, check the atmosphere for oxygen content and flammability. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. When using do not smoke. Explosion-proof general and local exhaust ventilation. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Use non-sparking tools and explosion-proof equipment.  Avoid breathing mist/vapors. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. Pregnant or breastfeeding women must not handle this product. Should be handled in closed systems, if possible. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Avoid release to the environment. Observe good industrial hygiene practices.
<b>Conditions for safe storage, including any incompatibilities</b>	Store locked up. Keep away from heat, sparks and open flame. Prevent electrostatic charge build-up by using common bonding and grounding techniques. Store in a cool, dry place out of direct sunlight. Store in tightly closed container. Store in a well-ventilated place. Keep in an area equipped with sprinklers. Store away from incompatible materials (see Section 10 of the SDS).

## 8. Exposure controls/personal protection

### Occupational exposure limits

#### US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Hazardous Components of Complex Mixtures	Type	Value
--	------	-------

Benzene (CAS 71-43-2)	STEL	5 ppm
	TWA	1 ppm

#### US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Hazardous Components of Complex Mixtures	Type	Value
--	------	-------

Ethanol (CAS 64-17-5)	PEL	1900 mg/m3
		1000 ppm

Xylene (o, m, p isomers) (CAS 1330-20-7)	PEL	435 mg/m3
		100 ppm

n-Hexane (CAS 110-54-3)	PEL	1800 mg/m3
		500 ppm

Cyclohexane (CAS 110-82-7)	PEL	1050 mg/m3
		300 ppm

Cumene (CAS 98-82-8)	PEL	245 mg/m3
		50 ppm

Ethylbenzene (CAS 100-41-4)	PEL	435 mg/m3
		100 ppm

n-Heptane (CAS 142-82-5)	PEL	2000 mg/m3
		500 ppm

Pentane (mixed isomers) (CAS 109-66-0)	PEL	2950 mg/m3
		1000 ppm

Octane (All isomers) (CAS 111-65-9)	PEL	2350 mg/m3
		500 ppm

#### US. OSHA Table Z-2 (29 CFR 1910.1000)

Hazardous Components of Complex Mixtures	Type	Value
--	------	-------

Toluene (CAS 108-88-3)	Ceiling	300 ppm
	TWA	200 ppm

Benzene (CAS 71-43-2)	Ceiling	25 ppm
	TWA	10 ppm

#### US. ACGIH Threshold Limit Values

Material	Type	Value
----------	------	-------

UNLEADED GASOLINE	STEL	500 ppm
	TWA	300 ppm

Components	Type	Value
------------	------	-------

Gasoline (CAS 86290-81-5)	STEL	500 ppm
	TWA	300 ppm

Hazardous Components of Complex Mixtures	Type	Value
--	------	-------

Ethanol (CAS 64-17-5)	STEL	1000 ppm
-----------------------	------	----------

**US. ACGIH Threshold Limit Values****Hazardous Components of Complex Mixtures**

	Type	Value
Butane (normal, iso and butylene) (CAS 106-97-8)	STEL	1000 ppm
Hexane (Other Isomers) (CAS 96-14-0)	STEL	1000 ppm
	TWA	500 ppm
Xylene (o, m, p isomers) (CAS 1330-20-7)	STEL	150 ppm
	TWA	100 ppm
n-Hexane (CAS 110-54-3)	TWA	50 ppm
Cyclohexane (CAS 110-82-7)	TWA	100 ppm
Toluene (CAS 108-88-3)	TWA	20 ppm
Benzene (CAS 71-43-2)	STEL	2.5 ppm
	TWA	0.5 ppm
Cumene (CAS 98-82-8)	TWA	50 ppm
Ethylbenzene (CAS 100-41-4)	TWA	20 ppm
n-Heptane (CAS 142-82-5)	STEL	500 ppm
	TWA	400 ppm
Pentane (mixed isomers) (CAS 109-66-0)	TWA	1000 ppm
1,2,4-Trimethylbenzene (CAS 95-63-6)	TWA	25 ppm
Octane (All isomers) (CAS 111-65-9)	TWA	300 ppm

**US. NIOSH: Pocket Guide to Chemical Hazards****Hazardous Components of Complex Mixtures**

	Type	Value
Ethanol (CAS 64-17-5)	TWA	1900 mg/m3
		1000 ppm
Butane (normal, iso and butylene) (CAS 106-97-8)	TWA	1900 mg/m3
		800 ppm
Hexane (Other Isomers) (CAS 96-14-0)	Ceiling	1800 mg/m3
	TWA	510 ppm
Xylene (o, m, p isomers) (CAS 1330-20-7)	STEL	350 mg/m3
		100 ppm
n-Hexane (CAS 110-54-3)	TWA	655 mg/m3
		150 ppm
Cyclohexane (CAS 110-82-7)	TWA	435 mg/m3
		100 ppm
Toluene (CAS 108-88-3)	STEL	180 mg/m3
		50 ppm
Cyclohexane (CAS 110-82-7)	TWA	1050 mg/m3
		300 ppm
Toluene (CAS 108-88-3)	STEL	560 mg/m3
		150 ppm

**US. NIOSH: Pocket Guide to Chemical Hazards  
Hazardous Components  
of Complex Mixtures**

	Type	Value
	TWA	375 mg/m <sup>3</sup> 100 ppm
Benzene (CAS 71-43-2)	STEL	1 ppm
	TWA	0.1 ppm
Cumene (CAS 98-82-8)	TWA	245 mg/m <sup>3</sup> 50 ppm
Ethylbenzene (CAS 100-41-4)	STEL	545 mg/m <sup>3</sup> 125 ppm
	TWA	435 mg/m <sup>3</sup> 100 ppm
n-Heptane (CAS 142-82-5)	Ceiling	1800 mg/m <sup>3</sup> 440 ppm
	TWA	350 mg/m <sup>3</sup> 85 ppm
Pentane (mixed isomers) (CAS 109-66-0)	Ceiling	1800 mg/m <sup>3</sup> 610 ppm
	TWA	350 mg/m <sup>3</sup> 120 ppm
1,2,4-Trimethylbenzene (CAS 95-63-6)	TWA	125 mg/m <sup>3</sup> 25 ppm
Octane (All isomers) (CAS 111-65-9)	Ceiling	1800 mg/m <sup>3</sup> 385 ppm
	TWA	350 mg/m <sup>3</sup> 75 ppm

**Biological limit values**

<b>ACGIH Hazardous Components of Complex Mixtures</b>				
Hazardous Components	Value	Determinant	Specimen	Sampling Time
Benzene (CAS 71-43-2)	500 µg/g	t,t-Muconic acid	Creatinine in urine	*

<b>ACGIH Biological Exposure Indices Hazardous Components of Complex Mixtures</b>				
Hazardous Components	Value	Determinant	Specimen	Sampling Time
Xylene (o, m, p isomers) (CAS 1330-20-7)	1.5 g/g	Methylhippuric acids	Creatinine in urine	*
n-Hexane (CAS 110-54-3)	0.5 mg/l	2,5-Hexanedione, without hydrolysis	Urine	*
Toluene (CAS 108-88-3)	0.3 mg/g	o-Cresol, with hydrolysis	Creatinine in urine	*
	0.03 mg/l	Toluene	Urine	*
	0.02 mg/l	Toluene	Blood	*
Benzene (CAS 71-43-2)	25 µg/g	S-Phenylmercapturic acid	Creatinine in urine	*

**ACGIH Biological Exposure Indices  
Hazardous Components Value  
of Complex Mixtures**

Hazardous Components Value of Complex Mixtures	Determinant	Specimen	Sampling Time
Ethylbenzene (CAS 100-41-4)	0.15 g/g	Sum of mandelic acid and phenylglyoxylic acid	Creatinine in urine *

\* - For sampling details, please see the source document.

**Exposure guidelines**

**US - California OELs: Skin designation**

Benzene (CAS 71-43-2)	Can be absorbed through the skin.
Cumene (CAS 98-82-8)	Can be absorbed through the skin.
n-Hexane (CAS 110-54-3)	Can be absorbed through the skin.
Toluene (CAS 108-88-3)	Can be absorbed through the skin.

**US - Minnesota Haz Subs: Skin designation applies**

Cumene (CAS 98-82-8)	Skin designation applies.
Toluene (CAS 108-88-3)	Skin designation applies.

**US - Tennessee OELs: Skin designation**

Cumene (CAS 98-82-8)	Can be absorbed through the skin.
----------------------	-----------------------------------

**US ACGIH Threshold Limit Values: Skin designation**

Benzene (CAS 71-43-2)	Danger of cutaneous absorption
n-Hexane (CAS 110-54-3)	Danger of cutaneous absorption

**US. NIOSH: Pocket Guide to Chemical Hazards**

Cumene (CAS 98-82-8)	Can be absorbed through the skin.
----------------------	-----------------------------------

**US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)**

Cumene (CAS 98-82-8)	Can be absorbed through the skin.
----------------------	-----------------------------------

**Appropriate engineering controls**

Explosion-proof general and local exhaust ventilation. Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Provide eyewash station and safety shower.

**Individual protection measures, such as personal protective equipment**

**Eye/face protection** Wear safety glasses with side shields (or goggles).

**Skin protection**

**Hand protection** Wear protective gloves. Viton® or nitrile rubber gloves are possible options. Verify chemical resistant charts before using. Be aware that the liquid may penetrate the gloves. Frequent change is advisable. Suitable gloves can be recommended by the glove supplier.

**Skin protection**

**Other** Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.

**Respiratory protection**

When conditions indicate, use chemical respirator with organic vapor cartridge and full facepiece or other appropriate methods.

**Thermal hazards**

Wear appropriate thermal protective clothing, when necessary.

**General hygiene considerations**

Observe any medical surveillance requirements. When using do not smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

**9. Physical and chemical properties**

**Appearance**

<b>Physical state</b>	Liquid.
<b>Form</b>	Liquid.
<b>Color</b>	Clear to straw yellow.

**Odor** Characteristic Gasoline Odor (Strong).

**Odor threshold** Not available.

**pH** Not available.

<b>Melting point/freezing point</b>	< -76 °F (< -60 °C)
<b>Initial boiling point and boiling range</b>	80.1 - 440.1 °F (26.7 - 226.7 °C) (20% Evaporated Point: ≥100 °F)
<b>Flash point</b>	-40.0 °F (-40.0 °C) (closed cup)
<b>Evaporation rate</b>	10 - 11 BuAc
<b>Flammability (solid, gas)</b>	Not applicable.
<b>Upper/lower flammability or explosive limits</b>	
<b>Flammability limit - lower (%)</b>	1.3 %
<b>Flammability limit - upper (%)</b>	7.1 %
<b>Vapor pressure</b>	60.8 - 101.3 kPa (20°C)
<b>Vapor density</b>	3 - 4 (Air=1)
<b>Relative density</b>	Not available.
<b>Solubility(ies)</b>	
<b>Solubility (water)</b>	Very slightly soluble.
<b>Partition coefficient (n-octanol/water)</b>	Not available.
<b>Auto-ignition temperature</b>	> 500 °F (> 260 °C)
<b>Decomposition temperature</b>	Not available.
<b>Viscosity</b>	Not available.
<b>Other information</b>	
<b>Explosive properties</b>	Not explosive.
<b>Flash point class</b>	Flammable IB
<b>Oxidizing properties</b>	Not oxidizing.
<b>VOC</b>	100 %

## 10. Stability and reactivity

<b>Reactivity</b>	The product is stable and non-reactive under normal conditions of use, storage and transport.
<b>Chemical stability</b>	Material is stable under normal conditions.
<b>Possibility of hazardous reactions</b>	Hazardous polymerization does not occur.
<b>Conditions to avoid</b>	Avoid heat, sparks, open flames and other ignition sources. Avoid temperatures exceeding the flash point. Contact with incompatible materials.
<b>Incompatible materials</b>	Strong oxidizing agents.
<b>Hazardous decomposition products</b>	No hazardous decomposition products are known.

## 11. Toxicological information

### Information on likely routes of exposure

<b>Inhalation</b>	May cause drowsiness and dizziness. Headache. Nausea, vomiting. Prolonged inhalation may be harmful.
<b>Skin contact</b>	Causes skin irritation.
<b>Eye contact</b>	Direct contact with eyes may cause temporary irritation.
<b>Ingestion</b>	Droplets of the product aspirated into the lungs through ingestion or vomiting may cause a serious chemical pneumonia.

**Symptoms related to the physical, chemical and toxicological characteristics**      Aspiration may cause pulmonary edema and pneumonitis. May cause drowsiness and dizziness. Headache. Nausea, vomiting. Skin irritation. May cause redness and pain.

### Information on toxicological effects

**Acute toxicity**      May be fatal if swallowed and enters airways. Hydrogen sulfide, a highly toxic gas, may be present. Signs and symptoms of overexposure to hydrogen sulfide include respiratory and eye irritation, dizziness, nausea, coughing, a sensation of dryness and pain in the nose, and loss of consciousness. Odor does not provide a reliable indicator of the presence of hazardous levels in the atmosphere.



Components	Species	Test Results
Gasoline (CAS 86290-81-5)		
<b><u>Acute</u></b>		
<b>Dermal</b>		
LD50	Rabbit	> 2000 mg/kg, 24 Hours
<b>Inhalation</b>		
<i>Vapor</i>		
LC50	Rat	> 5610 mg/m3, 4 Hours
<b>Oral</b>		
LD50	Rat	> 5000 mg/kg
<b>Hazardous Components of Complex Mixtures</b>		
Ethanol (CAS 64-17-5)		
<b><u>Acute</u></b>		
<b>Dermal</b>		
LD50	Rat	> 2000 mg/kg
<b>Inhalation</b>		
<i>Vapor</i>		
LC50	Mouse	39 g/m3, 4 Hours
<b>Oral</b>		
LD50	Rat	7000 - 11000 mg/kg
Butane (normal, iso and butylene) (CAS 106-97-8)		
<b><u>Acute</u></b>		
<b>Inhalation</b>		
LC50	Rat	658 mg/l, 4 Hours
Xylene (o, m, p isomers) (CAS 1330-20-7)		
<b><u>Acute</u></b>		
<b>Oral</b>		
LD50	Rat	3523 mg/kg
Cyclohexane (CAS 110-82-7)		
<b><u>Acute</u></b>		
<b>Oral</b>		
LD50	Rat	12710 mg/kg
n-Hexane (CAS 110-54-3)		
<b><u>Acute</u></b>		
<b>Oral</b>		
LD50	Rat	28710 mg/kg
Toluene (CAS 108-88-3)		
<b><u>Acute</u></b>		
<b>Dermal</b>		
LD50	Rabbit	12200 mg/kg
<b>Inhalation</b>		
<i>Vapor</i>		
LC50	Rat	28.1 mg/l, 4 Hours
Benzene (CAS 71-43-2)		
<b><u>Acute</u></b>		
<b>Oral</b>		
LD50	Rat	930 mg/kg

Hazardous Components of Complex Mixtures	Species	Test Results
Ethylbenzene (CAS 100-41-4)		
<b>Acute</b>		
<b>Dermal</b>		
LD50	Rabbit	15400 mg/kg
<b>Inhalation</b>		
LC50	Rat	17.4 mg/l, 4 hours
<b>Oral</b>		
LD50	Rat	3500 - 4700 mg/kg
n-Heptane (CAS 142-82-5)		
<b>Acute</b>		
<b>Inhalation</b>		
<i>Vapor</i>		
LC50	Rat	> 29.29 mg/l, 4 Hours
<b>Oral</b>		
LD50	Rat	15000 mg/kg
Pentane (mixed isomers) (CAS 109-66-0)		
<b>Other</b>		
NOAEL	Rat	> 1000 mg/kg/day
<b>Acute</b>		
<b>Dermal</b>		
LD50	Rabbit	3000 mg/kg/day
<b>Inhalation</b>		
LC50	Rat	18 mg/l, 4 Hours
<b>Oral</b>		
LD50	Rat	> 2000 mg/kg/day
<b>Chronic</b>		
<b>Other</b>		
NOAEL	Rat	20 mg/l
1,2,4-Trimethylbenzene (CAS 95-63-6)		
<b>Acute</b>		
<b>Oral</b>		
LD50	Rat	2720 - 3960 mg/kg
<b>Skin corrosion/irritation</b>	Causes skin irritation.	
<b>Serious eye damage/eye irritation</b>	Direct contact with eyes may cause temporary irritation.	
<b>Respiratory or skin sensitization</b>		
<b>Respiratory sensitization</b>	Not a respiratory sensitizer.	
<b>Skin sensitization</b>	This product is not expected to cause skin sensitization.	
<b>Germ cell mutagenicity</b>	May cause genetic defects.	
<b>Carcinogenicity</b>	May cause cancer.	
<b>IARC Monographs. Overall Evaluation of Carcinogenicity</b>		
Benzene (CAS 71-43-2)	1 Carcinogenic to humans.	
Cumene (CAS 98-82-8)	2B Possibly carcinogenic to humans.	
Ethylbenzene (CAS 100-41-4)	2B Possibly carcinogenic to humans.	
Gasoline (CAS 86290-81-5)	2B Possibly carcinogenic to humans.	
Toluene (CAS 108-88-3)	3 Not classifiable as to carcinogenicity to humans.	
Xylene (o, m, p isomers) (CAS 1330-20-7)	3 Not classifiable as to carcinogenicity to humans.	
<b>NTP Report on Carcinogens</b>		
Benzene (CAS 71-43-2)	Known To Be Human Carcinogen.	
Cumene (CAS 98-82-8)	Reasonably Anticipated to be a Human Carcinogen.	

**OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)**

Benzene (CAS 71-43-2)

Cancer

<b>Reproductive toxicity</b>	Suspected of damaging fertility or the unborn child.
<b>Specific target organ toxicity - single exposure</b>	May cause drowsiness and dizziness.
<b>Specific target organ toxicity - repeated exposure</b>	Not classified.
<b>Aspiration hazard</b>	May be fatal if swallowed and enters airways.
<b>Chronic effects</b>	Prolonged inhalation may be harmful. Prolonged exposure may cause chronic effects.
<b>Further information</b>	May be absorbed through the skin.

**12. Ecological information****Ecotoxicity** Toxic to aquatic life with long lasting effects.

Components		Species	Test Results
Gasoline (CAS 86290-81-5)			
<b>Aquatic</b>			
Algae	EC50	Pseudokirchneriella subcapitata	3.1 mg/l, 72 Hours
Crustacea	EC50	Daphnia magna	4.5 mg/l, 48 Hours
Fish	LC50	Oncorhynchus mykiss	10 mg/l, 96 Hours
		Pimephales promelas	8.2 mg/l, 96 Hours
<b>Hazardous Components of Complex Mixtures</b>			
Ethanol (CAS 64-17-5)			
<b>Aquatic</b>			
<i>Acute</i>			
Crustacea	LC50	Ceriodaphnia dubia	5012 mg/l, 48 hours
		Daphnia magna	454 mg/l, 11 days
Fish	LC50	Pimephales promelas	13480 mg/l, 96 hours
<i>Chronic</i>			
Crustacea	NOEC	Ceriodaphnia dubia	9.6 mg/l, 10 days
Xylene (o, m, p isomers) (CAS 1330-20-7)			
<b>Aquatic</b>			
Fish	LC50	Rainbow trout, donaldson trout (Oncorhynchus mykiss)	2.6 mg/l, 96 hours
Cyclohexane (CAS 110-82-7)			
<b>Aquatic</b>			
Crustacea	EC50	Water flea (Daphnia magna)	0.9 mg/l, 48 hours
<i>Acute</i>			
Fish	LC50	Fathead minnow (Pimephales promelas)	3.961 - 5.181 mg/l, 96 hours
n-Hexane (CAS 110-54-3)			
<b>Aquatic</b>			
<i>Acute</i>			
Fish	LC50	Fathead minnow (Pimephales promelas)	2.101 - 2.981 mg/l, 96 hours
Toluene (CAS 108-88-3)			
<b>Aquatic</b>			
<i>Acute</i>			
Crustacea	EC50	Daphnia magna	11.5 mg/l, 48 hours
Fish	LC50	Oncorhynchus kisutch	5.5 mg/l, 96 hours
<i>Chronic</i>			
Crustacea	NOEC	Ceriodaphnia dubia	0.74 mg/l, 7 days
Fish	NOEC	Oncorhynchus kisutch	1.4 mg/l, 40 days

Hazardous Components of Complex Mixtures	Species	Test Results
Ethylbenzene (CAS 100-41-4)		
<b>Aquatic</b>		
<i>Acute</i>		
Crustacea	EC50	Water flea (Daphnia magna) 1.81 - 2.38 mg/l, 48 hours
Fish	LC50	Rainbow trout,donaldson trout (Oncorhynchus mykiss) 4.2 mg/l, 96 hours
<i>Chronic</i>		
Crustacea	EC50	Ceriodaphnia dubia 3.6 mg/l, 7 days
Pentane (mixed isomers) (CAS 109-66-0)		
<i>Acute</i>		
	EC50	Selenastrum capricornutum (new Pseudokirchneriella subcapita) 7.51 mg/l, 72 Hours
<b>Aquatic</b>		
<i>Acute</i>		
Crustacea	EC50	Daphnia magna 2.7 mg/l, 48 Hours
Fish	LC50	Oncorhynchus mykiss 4.26 mg/l, 96 Hours
1,2,4-Trimethylbenzene (CAS 95-63-6)		
<b>Aquatic</b>		
<i>Acute</i>		
Fish	LC50	Fathead minnow (Pimephales promelas) 7.72 mg/l, 96 hours
Octane (All isomers) (CAS 111-65-9)		
<b>Aquatic</b>		
Crustacea	LC50	Daphnia magna 0.38 mg/l, 48 hours

**Persistence and degradability** Expected to be inherently biodegradable.

**Bioaccumulative potential** The product is not bioaccumulating.

**Mobility in soil** No data available.

**Other adverse effects** Oil spills are generally hazardous to the environment. The product contains volatile organic compounds which have a photochemical ozone creation potential.

### 13. Disposal considerations

**Disposal instructions** Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Incinerate the material under controlled conditions in an approved incinerator. Do not incinerate sealed containers. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.

**Local disposal regulations** Dispose in accordance with all applicable regulations.

**Hazardous waste code** D001: Waste Flammable material with a flash point <140 F  
D018: Waste Benzene  
The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

#### US RCRA Hazardous Waste U List: Reference

Benzene (CAS 71-43-2)	U019
Cumene (CAS 98-82-8)	U055
Cyclohexane (CAS 110-82-7)	U056
Toluene (CAS 108-88-3)	U220
Xylene (o, m, p isomers) (CAS 1330-20-7)	U239

**Waste from residues / unused products** Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

**Contaminated packaging** Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

## 14. Transport information

### DOT

UN number	UN1203
UN proper shipping name	Gasoline
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Label(s)	3
Packing group	II
Environmental hazards	
Marine pollutant	Yes
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Special provisions	144, 177, B1, B33, IB2, T4, TP1
Packaging exceptions	150
Packaging non bulk	202
Packaging bulk	242

### IATA

UN number	UN1203
UN proper shipping name	GASOLINE
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Packing group	II
Environmental hazards	Yes
ERG Code	3H
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

### IMDG

UN number	UN1203
UN proper shipping name	GASOLINE
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Packing group	II
Environmental hazards	
Marine pollutant	Yes
EmS	F-E, S-E
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable. However, this product is a liquid and if transported in bulk covered under MARPOL 73/78, Annex I.

**General information** Shipping descriptions in this section are offered as examples only. Classification for transport must accurately reflect the material hazards as designated under a variety of regulations and is solely the responsibility of the person offering the material for transport into commerce.

## 15. Regulatory information

**US federal regulations** This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

### TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

### CERCLA Hazardous Substance List (40 CFR 302.4)

Benzene (CAS 71-43-2)	Listed.
Butane (normal, iso and butylene) (CAS 106-97-8)	Listed.
Cumene (CAS 98-82-8)	Listed.
Cyclohexane (CAS 110-82-7)	Listed.
Ethylbenzene (CAS 100-41-4)	Listed.
Gasoline (CAS 86290-81-5)	Listed.
Hexane (Other Isomers) (CAS 96-14-0)	Listed.
n-Heptane (CAS 142-82-5)	Listed.
n-Hexane (CAS 110-54-3)	Listed.
Octane (All isomers) (CAS 111-65-9)	Listed.

Pentane (mixed isomers) (CAS 109-66-0) Listed.  
Toluene (CAS 108-88-3) Listed.  
Xylene (o, m, p isomers) (CAS 1330-20-7) Listed.

**SARA 304 Emergency release notification**

Not regulated.

**OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)**

Benzene (CAS 71-43-2) Cancer  
Central nervous system  
Blood  
Aspiration  
Skin  
Eye  
respiratory tract irritation  
Flammability

**Toxic Substances Control Act (TSCA)** All components of the mixture on the TSCA 8(b) inventory are designated "active".

**Superfund Amendments and Reauthorization Act of 1986 (SARA)**

**SARA 302 Extremely hazardous substance**

Not listed.

**SARA 311/312 Hazardous chemical** Yes

**Classified hazard categories** Flammable (gases, aerosols, liquids, or solids)  
Skin corrosion or irritation  
Germ cell mutagenicity  
Carcinogenicity  
Reproductive toxicity  
Specific target organ toxicity (single or repeated exposure)  
Aspiration hazard  
Hazard not otherwise classified (HNOC)

**SARA 313 (TRI reporting)**

Chemical name	CAS number	% by wt.
1,2,4-Trimethylbenzene	95-63-6	0 - 6
Benzene	71-43-2	< 5
Cumene	98-82-8	≤ 5
Cyclohexane	110-82-7	0 - 3
Ethylbenzene	100-41-4	0 - 5
n-Hexane	110-54-3	0 - 3
Toluene	108-88-3	0 - 30
Xylene (o, m, p isomers)	1330-20-7	0 - 25

**Other federal regulations**

**Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**

Benzene (CAS 71-43-2)  
Cumene (CAS 98-82-8)  
Ethylbenzene (CAS 100-41-4)  
n-Hexane (CAS 110-54-3)  
Toluene (CAS 108-88-3)  
Xylene (o, m, p isomers) (CAS 1330-20-7)

**Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)**

Butane (normal, iso and butylene) (CAS 106-97-8)  
Pentane (mixed isomers) (CAS 109-66-0)

**Safe Drinking Water Act (SDWA)** Not regulated.

**Drug Enforcement Administration (DEA). List 2, Essential Chemicals (21 CFR 1310.02(b) and 1310.04(f)(2) and Chemical Code Number**

Toluene (CAS 108-88-3) 6594

**Drug Enforcement Administration (DEA). List 1 & 2 Exempt Chemical Mixtures (21 CFR 1310.12(c))**

Toluene (CAS 108-88-3) 35 %WV

**DEA Exempt Chemical Mixtures Code Number**

Toluene (CAS 108-88-3) 594

# FEMA Priority Substances Respiratory Health and Safety in the Flavor Manufacturing Workplace

Ethanol (CAS 64-17-5)

Low priority

## US state regulations

### US. Massachusetts RTK - Substance List

1,2,4-Trimethylbenzene (CAS 95-63-6)  
Benzene (CAS 71-43-2)  
Butane (normal, iso and butylene) (CAS 106-97-8)  
Cumene (CAS 98-82-8)  
Cyclohexane (CAS 110-82-7)  
Ethanol (CAS 64-17-5)  
Ethylbenzene (CAS 100-41-4)  
Hexane (Other Isomers) (CAS 96-14-0)  
n-Heptane (CAS 142-82-5)  
n-Hexane (CAS 110-54-3)  
Octane (All isomers) (CAS 111-65-9)  
Pentane (mixed isomers) (CAS 109-66-0)  
Toluene (CAS 108-88-3)  
Xylene (o, m, p isomers) (CAS 1330-20-7)

### US. New Jersey Worker and Community Right-to-Know Act

1,2,4-Trimethylbenzene (CAS 95-63-6)  
Benzene (CAS 71-43-2)  
Butane (normal, iso and butylene) (CAS 106-97-8)  
Cumene (CAS 98-82-8)  
Cyclohexane (CAS 110-82-7)  
Ethanol (CAS 64-17-5)  
Ethylbenzene (CAS 100-41-4)  
n-Heptane (CAS 142-82-5)  
n-Hexane (CAS 110-54-3)  
Octane (All isomers) (CAS 111-65-9)  
Pentane (mixed isomers) (CAS 109-66-0)  
Toluene (CAS 108-88-3)  
Xylene (o, m, p isomers) (CAS 1330-20-7)

### US. Pennsylvania Worker and Community Right-to-Know Law

1,2,4-Trimethylbenzene (CAS 95-63-6)  
Benzene (CAS 71-43-2)  
Butane (normal, iso and butylene) (CAS 106-97-8)  
Cumene (CAS 98-82-8)  
Cyclohexane (CAS 110-82-7)  
Ethanol (CAS 64-17-5)  
Ethylbenzene (CAS 100-41-4)  
Gasoline (CAS 86290-81-5)  
Hexane (Other Isomers) (CAS 96-14-0)  
n-Heptane (CAS 142-82-5)  
n-Hexane (CAS 110-54-3)  
Octane (All isomers) (CAS 111-65-9)  
Pentane (mixed isomers) (CAS 109-66-0)  
Toluene (CAS 108-88-3)  
Xylene (o, m, p isomers) (CAS 1330-20-7)

### US. Rhode Island RTK

1,2,4-Trimethylbenzene (CAS 95-63-6)  
Benzene (CAS 71-43-2)  
Butane (normal, iso and butylene) (CAS 106-97-8)  
Cumene (CAS 98-82-8)  
Cyclohexane (CAS 110-82-7)  
Ethanol (CAS 64-17-5)  
Ethylbenzene (CAS 100-41-4)  
n-Heptane (CAS 142-82-5)  
n-Hexane (CAS 110-54-3)  
Octane (All isomers) (CAS 111-65-9)  
Pentane (mixed isomers) (CAS 109-66-0)  
Toluene (CAS 108-88-3)  
Xylene (o, m, p isomers) (CAS 1330-20-7)

## California Proposition 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. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

### California Proposition 65 - CRT: Listed date/Carcinogenic substance

Benzene (CAS 71-43-2)	Listed: February 27, 1987
Cumene (CAS 98-82-8)	Listed: April 6, 2010
Ethylbenzene (CAS 100-41-4)	Listed: June 11, 2004

### California Proposition 65 - CRT: Listed date/Developmental toxin

Benzene (CAS 71-43-2)	Listed: December 26, 1997
Toluene (CAS 108-88-3)	Listed: January 1, 1991

### California Proposition 65 - CRT: Listed date/Male reproductive toxin

Benzene (CAS 71-43-2)	Listed: December 26, 1997
n-Hexane (CAS 110-54-3)	Listed: December 15, 2017

### US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))

1,2,4-Trimethylbenzene (CAS 95-63-6)  
Benzene (CAS 71-43-2)  
Butane (normal, iso and butylene) (CAS 106-97-8)  
Cumene (CAS 98-82-8)  
Cyclohexane (CAS 110-82-7)  
Ethylbenzene (CAS 100-41-4)  
Gasoline (CAS 86290-81-5)  
n-Heptane (CAS 142-82-5)  
n-Hexane (CAS 110-54-3)  
Octane (All isomers) (CAS 111-65-9)  
Pentane (mixed isomers) (CAS 109-66-0)  
Toluene (CAS 108-88-3)  
Xylene (o, m, p isomers) (CAS 1330-20-7)

### International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	No
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
Taiwan	Taiwan Chemical Substance Inventory (TCSI)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

\*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

## 16. Other information, including date of preparation or last revision

Issue date	13-May-2013
Revision date	30-June-2020
Version #	06
NFPA ratings	





**References****Disclaimer****CONCAWE**

The information in this Safety Data Sheet (SDS) was obtained from sources believed to be reliable and accurate, and is not represented as being absolutely complete. The end user of this product has the responsibility for evaluating the adequacy of the data for the intended application and conditions of use; for determining the safety, toxicity, regulatory requirements, and suitability of the product under these conditions; and for obtaining additional or clarifying data where uncertainty exists. The data serves as general guidance only, and is to be used in combination with professional judgement of persons experienced in a specific application, use or process; and additional data may be required. Valero Marketing & Supply Co., (Valero) provides this data without any warranty, expressed or implied regarding its correctness or accuracy; and does not assume any liability arising out of product handling, storage, use or disposal by others.