



SAFETY DATA SHEET

1. Identification

Product identifier	Residual Fuel Oil
Other means of identification	
SDS number	209-GHS
Synonyms	No. 6 fuel oil, no. 5 fuel oil, no. 4 fuel oil, bunker fuel, heavy fuel oil
Recommended use	Refinery feedstock.
Recommended restrictions	No other uses are advised.
Manufacturer/Importer/Supplier/Distributor information	
Manufacturer/Supplier	Valero Marketing & Supply Company and Affiliates One Valero Way San Antonio, TX 78269-6000
General Assistance	210-345-4593
E-Mail	CorpHSE@valero.com
Contact Person	Industrial Hygienist
Emergency Telephone	24 Hour Emergency 866-565-5220 1-800-424-9300 (CHEMTREC USA)

2. Hazard(s) identification

Physical hazards	Flammable liquids	Category 4
Health hazards	Acute toxicity, oral	Category 4
	Acute toxicity, inhalation	Category 4
	Skin corrosion/irritation	Category 2
	Sensitization, skin	Category 1
	Germ cell mutagenicity	Category 1B
	Carcinogenicity	Category 1A
	Reproductive toxicity	Category 1B
	Specific target organ toxicity, repeated exposure	Category 1 (Blood, Central Nervous System, hematopoietic system, Liver, Thymus)
	Aspiration hazard	Category 1
Environmental hazards	Hazardous to the aquatic environment, acute hazard	Category 1
	Hazardous to the aquatic environment, long-term hazard	Category 1
OSHA defined hazards	Not classified.	

Label elements



Signal word Danger

Hazard statement Combustible liquid. Harmful if swallowed. May be fatal if swallowed and enters airways. Causes skin irritation. May cause an allergic skin reaction. Harmful if inhaled. May cause genetic defects. May cause cancer. May damage fertility or the unborn child. Causes damage to organs (Blood, Central Nervous System, hematopoietic system, Liver, Thymus) through prolonged or repeated exposure. Very toxic to aquatic life with long lasting effects.

Precautionary statement

Prevention

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from flames and hot surfaces. - No smoking. Do not breathe mist/vapors. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Contaminated work clothing must not be allowed out of the workplace. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection.

Response

If swallowed: Immediately call a poison center/doctor. Rinse mouth. Do NOT induce vomiting. If on skin: Wash with plenty of water. If inhaled: Remove person to fresh air and keep comfortable for breathing. If exposed or concerned: Get medical advice/attention. If skin irritation or rash occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse. In case of fire: Use appropriate media to extinguish. Collect spillage.

Storage

Store in a well-ventilated place. Keep cool. Store locked up.

Disposal

Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise classified (HNOC)

None known.

Supplemental information

None.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Clarified oils (Petroleum), catalytic cracked	64741-62-4	0-100
Clarified oils (petroleum), hydrodesulfurized catalytic cracked	68333-26-6	0-100
Distillates (petroleum), heavy catalytic cracked	64741-61-3	0-100
Distillates petroleum residues vacuum	68955-27-1	0-100
Fuel Oil No. 6	68553-00-4	0-100
Fuel oil, residual	68476-33-5	0-100
Residues (petroleum), light vacuum	68512-62-9	0-100
Polycyclic aromatic hydrocarbons	130498-29-2	0-10
Asphaltenes (petroleum)	91995-23-2	0-5
Naphthalene	91-20-3	0-3
Benzene	71-43-2	<1
Hydrogen sulfide	7783-06-4	≤ 1
Sulfur	7704-34-9	≤ 1

Composition comments

Dangerous amounts of hydrogen sulfide, a highly toxic gas, may be present, especially in the headspace of containers.

Note: Component ranges represent multiple product grades (see Synonyms - Section 1). Actual concentrations may be substantially less than the maximum values shown or zero, depending on the product grade or specifications.

4. First-aid measures

Inhalation

Remove victim to fresh air and keep at rest in a position comfortable for breathing. Oxygen or artificial respiration if needed. Call a poison center or doctor/physician if you feel unwell.

Skin contact

Remove contaminated clothing immediately and wash skin with soap and water. In case of eczema or other skin disorders: Seek medical attention and take along these instructions. Wash contaminated clothing before reuse.

Eye contact

Rinse with water. Get medical attention if irritation develops and persists.

Ingestion

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.

Most important symptoms/effects, acute and delayed

Aspiration may cause pulmonary edema and pneumonitis. Narcosis. Behavioral changes. Decrease in motor functions. Unconsciousness. Direct contact with eyes may cause temporary irritation. Skin irritation. May cause redness and pain. May cause an allergic skin reaction. Dermatitis. Rash. Cyanosis (blue tissue condition, nails, lips, and/or skin). Jaundice. Prolonged exposure may cause chronic effects.

Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Keep victim warm. Keep victim under observation. Symptoms may be delayed.
General information	IF exposed or concerned: Get medical advice/attention. If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance. Wash contaminated clothing before reuse.
5. Fire-fighting measures	
Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO ₂).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	The product is combustible, and heating may generate vapors which may form explosive vapor/air mixtures. During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire fighting equipment/instructions	In case of fire and/or explosion do not breathe fumes. Move containers from fire area if you can do so without risk.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	Combustible liquid.
6. Accidental release measures	
Personal precautions, protective equipment and emergency procedures	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. Do not breathe mist/vapors. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep combustibles (wood, paper, oil, etc.) away from spilled material. 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. Small Spills: Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. Wipe up with absorbent material (e.g. cloth, fleece). 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.
Environmental precautions	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	
Precautions for safe handling	Before entering storage tanks and commencing any operation in a confined area, check the atmosphere for oxygen content, hydrogen sulfide (H ₂ S) and flammability. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from open flames, hot surfaces and sources of ignition. Do not breathe mist/vapors. Do not taste or swallow. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. When using, do not eat, drink or smoke. Pregnant or breastfeeding women must not handle this product. Should be handled in closed systems, if possible. Use only outdoors or in a well-ventilated area. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Avoid release to the environment. Observe good industrial hygiene practices.
Conditions for safe storage, including any incompatibilities	Store locked up. Keep away from heat, sparks and open flame. 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)

Components	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)

Components	Type	Value	Form
Clarified oils (Petroleum), catalytic cracked (CAS 64741-62-4)	PEL	5 mg/m3	Mist.
Fuel Oil No. 6 (CAS 68553-00-4)	PEL	5 mg/m3	Mist.
Fuel oil, residual (CAS 68476-33-5)	PEL	5 mg/m3	Mist.
Naphthalene (CAS 91-20-3)	PEL	50 mg/m3 10 ppm	

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

Components	Type	Value
Benzene (CAS 71-43-2)	Ceiling	25 ppm
	TWA	10 ppm
Hydrogen sulfide (CAS 7783-06-4)	Ceiling	20 ppm

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Benzene (CAS 71-43-2)	STEL	2.5 ppm	
	TWA	0.05 ppm	
Clarified oils (Petroleum), catalytic cracked (CAS 64741-62-4)	TWA	5 mg/m3	Inhalable fraction.
Distillates (petroleum), heavy catalytic cracked (CAS 64741-61-3)	TWA	5 mg/m3	Inhalable fraction.
Fuel Oil No. 6 (CAS 68553-00-4)	TWA	5 mg/m3	Inhalable fraction.
Fuel oil, residual (CAS 68476-33-5)	TWA	5 mg/m3	Inhalable fraction.
Hydrogen sulfide (CAS 7783-06-4)	STEL	5 ppm	
	TWA	1 ppm	
Naphthalene (CAS 91-20-3)	TWA	10 ppm	

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
Benzene (CAS 71-43-2)	STEL	1 ppm	
	TWA	0.1 ppm	
Clarified oils (Petroleum), catalytic cracked (CAS 64741-62-4)	STEL	10 mg/m3	Mist.
	TWA	5 mg/m3	Mist.
Fuel Oil No. 6 (CAS 68553-00-4)	STEL	10 mg/m3	Mist.
	TWA	5 mg/m3	Mist.
Fuel oil, residual (CAS 68476-33-5)	STEL	10 mg/m3	Mist.

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
Hydrogen sulfide (CAS 7783-06-4)	TWA	5 mg/m ³	Mist.
	Ceiling	15 mg/m ³	
Naphthalene (CAS 91-20-3)	STEL	10 ppm	
		75 mg/m ³	
	TWA	15 ppm	
		50 mg/m ³	
		10 ppm	

Biological limit values**ACGIH**

Components	Value	Determinant	Specimen	Sampling Time
Benzene (CAS 71-43-2)	500 µg/g	t,t-Muconic acid	Creatinine in urine	*

ACGIH Biological Exposure Indices

Components	Value	Determinant	Specimen	Sampling Time
Benzene (CAS 71-43-2)	25 µg/g	S-Phenylmercapturic 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.

Naphthalene (CAS 91-20-3)

Can be absorbed through the skin.

US ACGIH Threshold Limit Values: Skin designation

Benzene (CAS 71-43-2)

Danger of cutaneous absorption

Naphthalene (CAS 91-20-3)

Danger of cutaneous absorption

Appropriate engineering controls

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 easy access to water supply and eye wash facilities.

Individual protection measures, such as personal protective equipment**Eye/face protection**

Wear safety glasses with side shields (or goggles). Wear face shield if there is risk of splashes.

Skin protection**Hand protection**

Wear appropriate chemical resistant gloves.

Skin protection**Other**

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

Respiratory protection

If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. Chemical respirator with organic vapor cartridge and full facepiece.

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. Contaminated work clothing should not be allowed out of the workplace.

9. Physical and chemical properties**Appearance****Physical state**

Liquid.

Form

Oily liquid.

Color

Black.

Odor

Petroleum.

Odor threshold	Not available.
pH	Not applicable.
Melting point/freezing point	Not available.
Initial boiling point and boiling range	> 350.04 - < 1200 °F (> 176.69 - < 648.89 °C)
Flash point	> 141.8 °F (> 61 °C) Pensky-Martens Closed Cup
Evaporation rate	Not available.
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Explosive limit - lower (%)	0.9
Explosive limit - upper (%)	7
Vapor pressure	< 0.7 kPa (20°C)
Vapor density	> 5 (Air = 1)
Relative density	> 0.88 - < 1.02 (water=1)
Solubility(ies)	
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	> 315.59 °F (> 157.55 °C)
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.

10. Stability and reactivity

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

11. Toxicological information

Information on likely routes of exposure

Inhalation	Harmful if inhaled.
Skin contact	Causes skin irritation. May cause an allergic skin reaction.
Eye contact	Direct contact with eyes may cause temporary irritation.
Ingestion	Harmful if swallowed. 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. Narcosis. Behavioral changes. Decrease in motor functions. Unconsciousness. Skin irritation. May cause redness and pain. May cause an allergic skin reaction. Dermatitis. Rash. Cyanosis (blue tissue condition, nails, lips, and/or skin). Jaundice.
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Information on toxicological effects

Acute toxicity	Harmful if swallowed. Harmful if inhaled. 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.
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Components	Species	Test Results
Benzene (CAS 71-43-2)		
Acute		
Oral		
LD50	Rat	930 mg/kg
Clarified oils (Petroleum), catalytic cracked (CAS 64741-62-4)		
Acute		
Inhalation		
<i>Aerosol</i>		
LC50	Rat	> 320 mg/m3, 4 Hours
Distillates (petroleum), heavy catalytic cracked (CAS 64741-61-3)		
Acute		
Inhalation		
<i>Aerosol</i>		
LC50	Rat	> 320 mg/m3, 4 Hours
Hydrogen sulfide (CAS 7783-06-4)		
Acute		
Inhalation		
<i>Gas</i>		
LC50	Rat	444 ppm, 4 Hours
Naphthalene (CAS 91-20-3)		
Acute		
Dermal		
LD50	Rabbit	> 2 g/kg
Oral		
LD50	Rat	490 mg/kg
Sulfur (CAS 7704-34-9)		
Acute		
Dermal		
LD50	Rabbit	> 2000 mg/kg
Inhalation		
LC50	Rat	> 5.43 g/m3, 4 Hours
Oral		
LD50	Rat	> 2000 mg/kg
Skin corrosion/irritation	Causes skin irritation.	
Serious eye damage/eye irritation	Direct contact with eyes may cause temporary irritation.	
Respiratory or skin sensitization		
Respiratory sensitization	Not a respiratory sensitizer.	
Skin sensitization	May cause an allergic skin reaction.	
Germ cell mutagenicity	May cause genetic defects.	
Carcinogenicity	May cause cancer.	
IARC Monographs. Overall Evaluation of Carcinogenicity		
Benzene (CAS 71-43-2)	1 Carcinogenic to humans.	
Clarified oils (petroleum), hydrodesulfurized catalytic cracked (CAS 68333-26-6)	2B Possibly carcinogenic to humans.	
Distillates petroleum residues vacuum (CAS 68955-27-1)	2B Possibly carcinogenic to humans.	
Naphthalene (CAS 91-20-3)	2B Possibly carcinogenic to humans.	
NTP Report on Carcinogens		
Benzene (CAS 71-43-2)	Known To Be Human Carcinogen.	
Naphthalene (CAS 91-20-3)	Known To Be Human Carcinogen.	
	Reasonably Anticipated to be a Human Carcinogen.	
Polycyclic aromatic hydrocarbons (CAS 130498-29-2)	Known To Be Human Carcinogen.	

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Benzene (CAS 71-43-2)

Cancer

Reproductive toxicity

May damage fertility or the unborn child.

Specific target organ toxicity - single exposure

Not classified.

Specific target organ toxicity - repeated exposure

Causes damage to organs (Blood, Central Nervous System, hematopoietic system, Liver, Thymus) through prolonged or repeated exposure.

Aspiration hazard

May be fatal if swallowed and enters airways.

Chronic effects

Prolonged inhalation may be harmful. Causes damage to organs through prolonged or repeated exposure. Prolonged exposure may cause chronic effects.

12. Ecological information

Ecotoxicity

Very toxic to aquatic life with long lasting effects.

Components	Species	Test Results	
Clarified oils (Petroleum), catalytic cracked (CAS 64741-62-4)			
Aquatic			
<i>Chronic</i>			
Fish	NOAEL	Oncorhynchus mykiss	0.1 mg/l, 28 days
Distillates (petroleum), heavy catalytic cracked (CAS 64741-61-3)			
Aquatic			
<i>Chronic</i>			
Fish	NOAEL	Oncorhynchus mykiss	0.1 mg/l, 28 days
Hydrogen sulfide (CAS 7783-06-4)			
Aquatic			
<i>Acute</i>			
Crustacea	EC50	Crustacea	0.042 mg/l, 48 Hours
Fish	LC50	Fathead minnow (Pimephales promelas)	0.0243 mg/l, 96 hours
Naphthalene (CAS 91-20-3)			
Aquatic			
<i>Acute</i>			
Crustacea	EC50	Water flea (Daphnia magna)	>= 1.09 - <= 3.4 mg/l, 48 hours
Fish	LC50	Pink salmon (Oncorhynchus gorbuscha)	>= 0.95 - <= 1.62 mg/l, 96 hours
Residues (petroleum), light vacuum (CAS 68512-62-9)			
Aquatic			
Fish	LC50	Fish	48 mg/l, 48 Hours

Persistence and degradability

No data is available on the degradability of this product.

Bioaccumulative potential

Partition coefficient n-octanol / water (log Kow)

Benzene (CAS 71-43-2)

2.13

Mobility in soil

No data available.

Other adverse effects

No data available.

13. Disposal considerations

Disposal instructions

Collect and reclaim or dispose in sealed containers at licensed waste disposal site. 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

The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

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 UN3256
UN proper shipping name Elevated temperature liquid, flammable, n.o.s. (Residual Fuel Oil)
Transport hazard class(es)
Class 3
Subsidiary risk -
Label(s) 3
Packing group III
Environmental hazards
Marine pollutant Yes
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.
Special provisions IB1, T3, TP3, TP29
Packaging exceptions None
Packaging non bulk None
Packaging bulk 247

IATA

UN number UN3256
UN proper shipping name Elevated temperature liquid, flammable, n.o.s. (Residual Fuel Oil)
Transport hazard class(es)
Class 3
Subsidiary risk -
Packing group Not assigned.
Environmental hazards Yes
ERG Code 3L
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

IMDG

UN number UN3256
UN proper shipping name ELEVATED TEMPERATURE LIQUID, FLAMMABLE, N.O.S. (Residual Fuel Oil)
Transport hazard class(es)
Class 3
Subsidiary risk -
Packing group III
Environmental hazards
Marine pollutant Yes
EmS F-E, S-D
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 established.

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.
Hydrogen sulfide (CAS 7783-06-4)	Listed.
Naphthalene (CAS 91-20-3)	Listed.

SARA 304 Emergency release notification

Hydrogen sulfide (CAS 7783-06-4)	100 LBS
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OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

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

Toxic Substances Control Act (TSCA)

One or more components of the mixture are not on the TSCA 8(b) inventory or are designated "inactive".

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SARA 302 Extremely hazardous substance

Chemical name	CAS number	Reportable quantity (pounds)	Threshold planning quantity (pounds)	Threshold planning quantity, lower value (pounds)	Threshold planning quantity, upper value (pounds)
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Hydrogen sulfide	7783-06-4	100	500		
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SARA 311/312 Hazardous chemical

Classified hazard categories

- Flammable (gases, aerosols, liquids, or solids)
- Acute toxicity (any route of exposure)
- Skin corrosion or irritation
- Respiratory or skin sensitization
- Germ cell mutagenicity
- Carcinogenicity
- Reproductive toxicity
- Specific target organ toxicity (single or repeated exposure)
- Aspiration hazard

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
Benzene	71-43-2	<1
Hydrogen sulfide	7783-06-4	≤ 1
Naphthalene	91-20-3	0-3
Polycyclic aromatic hydrocarbons	130498-29-2	0-10

Other federal regulations

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

- Benzene (CAS 71-43-2)
- Naphthalene (CAS 91-20-3)
- Polycyclic aromatic hydrocarbons (CAS 130498-29-2)

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

- Hydrogen sulfide (CAS 7783-06-4)

Safe Drinking Water Act (SDWA) Contains component(s) regulated under the Safe Drinking Water Act.

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

- Hydrogen sulfide (CAS 7783-06-4) High priority

US state regulations

US. Massachusetts RTK - Substance List

- Benzene (CAS 71-43-2)
- Clarified oils (Petroleum), catalytic cracked (CAS 64741-62-4)
- Fuel Oil No. 6 (CAS 68553-00-4)
- Fuel oil, residual (CAS 68476-33-5)
- Hydrogen sulfide (CAS 7783-06-4)
- Naphthalene (CAS 91-20-3)
- Sulfur (CAS 7704-34-9)

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

- Benzene (CAS 71-43-2)
- Clarified oils (Petroleum), catalytic cracked (CAS 64741-62-4)
- Clarified oils (petroleum), hydrodesulfurized catalytic cracked (CAS 68333-26-6)
- Distillates (petroleum), heavy catalytic cracked (CAS 64741-61-3)
- Distillates petroleum residues vacuum (CAS 68955-27-1)
- Fuel Oil No. 6 (CAS 68553-00-4)
- Fuel oil, residual (CAS 68476-33-5)

Residual Fuel Oil

Hydrogen sulfide (CAS 7783-06-4)
Naphthalene (CAS 91-20-3)
Polycyclic aromatic hydrocarbons (CAS 130498-29-2)
Sulfur (CAS 7704-34-9)

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

Benzene (CAS 71-43-2)
Clarified oils (Petroleum), catalytic cracked (CAS 64741-62-4)
Distillates (petroleum), heavy catalytic cracked (CAS 64741-61-3)
Fuel oil, residual (CAS 68476-33-5)
Hydrogen sulfide (CAS 7783-06-4)
Naphthalene (CAS 91-20-3)
Polycyclic aromatic hydrocarbons (CAS 130498-29-2)
Sulfur (CAS 7704-34-9)

US. Rhode Island RTK

Benzene (CAS 71-43-2)
Clarified oils (Petroleum), catalytic cracked (CAS 64741-62-4)
Fuel Oil No. 6 (CAS 68553-00-4)
Fuel oil, residual (CAS 68476-33-5)
Hydrogen sulfide (CAS 7783-06-4)
Naphthalene (CAS 91-20-3)
Sulfur (CAS 7704-34-9)

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.

California Proposition 65 - CRT: Listed date/Carcinogenic substance

Benzene (CAS 71-43-2)	Listed: February 27, 1987
Clarified oils (petroleum), hydrodesulfurized catalytic cracked (CAS 68333-26-6)	Listed: October 1, 1990
Distillates petroleum residues vacuum (CAS 68955-27-1)	Listed: October 1, 1990
Naphthalene (CAS 91-20-3)	Listed: April 19, 2002

California Proposition 65 - CRT: Listed date/Developmental toxin

Benzene (CAS 71-43-2)	Listed: December 26, 1997
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California Proposition 65 - CRT: Listed date/Male reproductive toxin

Benzene (CAS 71-43-2)	Listed: December 26, 1997
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US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))

Benzene (CAS 71-43-2)
Clarified oils (Petroleum), catalytic cracked (CAS 64741-62-4)
Clarified oils (petroleum), hydrodesulfurized catalytic cracked (CAS 68333-26-6)
Distillates (petroleum), heavy catalytic cracked (CAS 64741-61-3)
Distillates petroleum residues vacuum (CAS 68955-27-1)
Fuel Oil No. 6 (CAS 68553-00-4)
Fuel oil, residual (CAS 68476-33-5)
Hydrogen sulfide (CAS 7783-06-4)
Naphthalene (CAS 91-20-3)
Polycyclic aromatic hydrocarbons (CAS 130498-29-2)
Residues (petroleum), light vacuum (CAS 68512-62-9)

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Industrial Chemicals (AICIS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	No
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	Yes

Country(s) or region	Inventory name	On inventory (yes/no)*
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
Taiwan	Taiwan Chemical Substance Inventory (TCSI)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply 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	27-June-2013
Revision date	12-December-2022
Version #	03
NFPA ratings	



Disclaimer

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