

## RECEIVED

INCIDENT DATE: October 15, 2019  
INCIDENT TIME: 1348 hrs  
FACILITY: Shore Terminals LLC  
90 San Pablo Avenue  
Crockett, CA 94525

**OCT 18 2019**

Contra Costa Health  
Hazardous Materials

### PERSON TO CONTACT FOR ADDITIONAL INFORMATION:

Stephan Rosen (510-787-1076)

#### I. SUMMARY OF EVENT

Two ethanol storage tanks (Tanks 20107 and 20109) caught fire; the first tank (Tk 20107) caught fire at approximately 1348 hrs and the second tank (Tk 20109) caught fire shortly thereafter. The cause is currently unknown and under investigation. Prior to the event both tanks were static and contained less than 3,000 barrels of denatured ethanol each. With the exception of routine inspection and monitoring activities by facility personnel and contractors, there was no activity in the tank farm at the time of the fire.

The terminal was evacuated within approximately 2 minutes with one exception; a contractor working in the back of the terminal (near to Tks 20110 and 20111) who did not have an immediate means of safe egress. He safely exited the area of the incident in less than 20 minutes.

Emergency response vehicles were onsite within minutes and began response by directing water and fire fighting foam to mitigate the fire and cool adjacent tanks.

A grass fire began on the hillside adjacent to the terminal and was extinguished with the assistance of both fixed and rotary wing aircraft laying down fire suppressant and water.

The tank fire was abated by approximately 2100 hrs on October 15, 2019.

Shore Terminals LLC directed the initiation of third party air monitoring once access to the area was safe, and no LEL measurements have been detected downwind of the affected tank block; this air monitoring is ongoing.

#### II. AGENCIES NOTIFIED, INCLUDING TIME OF NOTIFICATION

- 1420 hrs—NRC – Miss Rawls; Rpt #126129 (800-899-4672)
- 1436 hrs—Contra Costa County Hazmat – Trisha Asuncion (925-250-6569 [mobile phone]; first spoke on land line [925-335-3232])
- 1443 hrs—USCG – Ryan Morgan (415-399-3547)
- 1451 hrs—PHMSA – Brian Pierzina (816-589-8293)
- 1456 hrs—USCG – Lt. Commander Bonnie Shaner (Incident Management Division Chief, Sector SF 415-595-8350)
- 1507 hrs—BAAQMD – Bhagavan Krishnaswamy (415-749-4637)
- 1510 hrs—State OES – Dustin Branscomb; Ctrl #19-6635 (800-852-7550)
- 1516 hrs—EPA - Steve Canalog (Duty Officer 415-595-8350)

- 1544 hrs—Fed DHS – Jerry Stevens (866-615-5150)
- 1621 hrs—State Fire Marshall – Dan Lee (818-618-1339)
- 1511 hrs—CWS shelter in place initiated
- 1938 hrs—CWS shelter in place lifted

### III. AGENCIES RESPONDING

- Bay Area Air Quality Management District
- Berkeley Fire Department
- Bureau of Alcohol, Tobacco, Firearms, and Explosives
- Cal OSHA
- California Department of Fish and Wildlife
- California Highway Patrol
- California State Lands Commission
- Chevron Fire Department
- Contra Costa County Fire Protection District
- Contra Costa County Office of the District Attorney
- Contra Costa County Sherriff Department
- Contra Costa Health Services
- Corteva Fire Department
- Crockett Fire Department
- East Bay Regional Park District
- Marathon Fire Department
- Office of State Fire Marshall
- National Response Center
- Phillips 66 Fire Department
- Rodeo Hercules Fire Department
- Shell Oil Fire Department
- United States Coast Guard

### IV. EMERGENCY RESPONSE ACTIONS

- Mutual Aid: PMAO notified/mobilized (Chevron, Marathon, Phillips 66, Shell & Corteva) responded
- Berkeley Fire Department responded
- Contra Costa County Fire Protection District responded
- Crockett Fire Department responded
- Rodeo Hercules Fire Department responded

### V. IDENTITY OF MATERIAL RELEASED AND ESTIMATED OR KNOWN QUANTITIES:

The investigation is continuing, however based on currently available information it appears that less than 6,000 barrels of denatured ethanol, plus an unknow quantity of other potential fuels (diesel & jet) released through broken lines until lines isolated by closing valves. SDS of denatured ethanol attached.

VI. METEOROLOGICAL CONDITIONS AT THE TIME OF EVENT

Winds were light at the time, generally between 4 and 6 mph, from the north and northwest; skies were clear, and temperatures ranging from a high of approximately 71 degrees and dropping into the low 50 degree mark later in the evening.

VII. DESCRIPTION OF INJURIES

There were no employee or contractor injuries. One fire fighter sustained a minor burn injury (first aid only) to one cheek but remained onsite to continue firefighting duties.

VIII. COMMUNITY IMPACT

A small grass fire was started as discussed above in an area adjacent to the terminal; no structures were damaged, just vegetation.

A shelter in place was issued to the areas of Rodeo and Crockett at 1511 until 1938 hrs for a period of approximately 7.5 hours.

Both directions of I-80 were closed from Highway 4 in Hercules to Interstate 780 in Vallejo until approximately 2100 hours on the day of the incident.

The results of air monitoring are not yet available, however, monitoring onsite for LEL conditions indicated that none were seen.

IX. INCIDENT INVESTIGATION RESULTS

The investigation is ongoing and is early in the process. NuStar is currently prioritizing cooperation with the incident response team from Contra Costa Fire. NuStar does not have access to the incident location due to a hold by CalOSHA and control of the facility by Contra Costa Fire during its investigation.

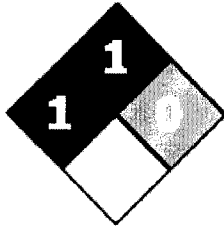
X. SUMMARIZE INVESTIGATION RESULTS BELOW OR ATTACH COPY OF REPORT:

Pending.

XI. SUMMARIZE PREVENTATIVE MEASURES TO BE TAKEN TO PREVENT RECURRENCE INCLUDING MILESTONE AND COMPLETION DATES FOR IMPLEMENTATION:

Pending.

# SAFETY DATA SHEET



Revision Date 06-Jul-2017

SDS Number 888100004475

Revision Number 2

## 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY

**Product Name** Ethanol

**Synonyms** Ethyl Alcohol and Gasoline Mixture, Motor Fuel Ethanol; Denatured (with Gasoline) Ethanol

**Recommended Use** Fuel additive  
**Uses advised against** All others

**Manufacturer**  
Tesoro Refining & Marketing Co.  
19100 Ridgewood Parkway  
San Antonio, TX 78259

**Emergency Telephone** Chemtrec: 1-800-424-9300  
Tesoro Call Center: 1-877-783-7676

**E-mail address** ProductStewardship@TSOCORP.com

## 2. HAZARDS IDENTIFICATION

### Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Flammable liquids	Category 2
Germ cell mutagenicity	Category 1B
Carcinogenicity	Category 1A
Reproductive toxicity	Category 2

### Label elements

#### Danger

Highly flammable liquid and vapor  
May cause genetic defects  
May cause cancer  
Suspected of damaging fertility or the unborn child



**Appearance** Liquid

**Physical State @20°C** Liquid

**Odor** Alcohol

**Precautionary Statements - Prevention**

Obtain special instructions before use  
Do not handle until all safety precautions have been read and understood  
Wear protective gloves/protective clothing/eye protection/face protection  
Keep away from heat/sparks/open flames/hot surfaces. - No smoking  
Keep container tightly closed  
Ground/or bond container and receiving equipment  
Use explosion-proof electrical/ ventilating / lighting / equipment  
Use only non-sparking tools  
Take precautionary measures against static discharge

**Precautionary Statements - Response**

IF exposed or concerned: Get medical advice/attention  
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower  
In case of fire: Use CO2, dry chemical, or foam to extinguish

**Precautionary Statements - Storage**

Store in a well-ventilated place. Keep cool

**Precautionary Statements - Disposal**

Dispose of contents/container to an approved waste disposal plant

**Hazards not otherwise classified (HNOC)**

Not applicable

**Other Information**

Not applicable.

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

Chemical Name	CAS No.	Percent
Ethanol; Ethyl alcohol	64-17-5	90-95
Gasoline, natural; Low boiling point naphtha	8006-61-9	5-7
Pentane	109-66-0	0-1
Toluene	108-88-3	0-0.75
Butane	106-97-8	0.1-0.75
Benzene	71-43-2	0-0.75

**4. FIRST AID MEASURES**

**Description of first aid measures**

**General advice**

Show this safety data sheet to the doctor in attendance. Remove from exposure, lie down. In case of accident or if you feel unwell, seek medical advice immediately. When symptoms persist or in all cases of doubt, seek medical advice. Never give anything by mouth to an unconscious person. Take off all contaminated clothing immediately and thoroughly wash material from skin.

**Inhalation**

Remove from exposure, lie down. If breathing has stopped, give artificial respiration. Get medical attention immediately. If breathing is difficult, administer oxygen. If symptoms persist, call a physician.

**Eye contact**

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Do not rub affected area.

**Skin contact**

Wash off immediately with soap and plenty of water while removing all contaminated

clothes and shoes.

**Ingestion** ASPIRATION HAZARD IF SWALLOWED - CAN ENTER LUNGS AND CAUSE DAMAGE. Do NOT induce vomiting. If vomiting occurs spontaneously, keep head below hips to prevent aspiration. Never give anything by mouth to an unconscious person. Get medical attention immediately if symptoms occur.

**Self-protection of the first aider** Remove all sources of ignition. Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Use personal protective equipment as required. See section 8 for more information.

**Most important symptoms and effects, both acute and delayed**

**Indication of any immediate medical attention and special treatment needed**

**Note to physicians** Treat symptomatically.

**5. FIRE-FIGHTING MEASURES**

**Suitable Extinguishing Media** Dry chemical. Carbon dioxide (CO<sub>2</sub>). Water spray. Alcohol resistant foam.

**Small Fire** Any extinguisher suitable for Class B fires, dry chemical, CO<sub>2</sub>, foam (AFFF/ATC), or water spray can be used.

**Large Fire** Water spray, fog or alcohol-resistant foam. CAUTION: Use of water spray when fighting fire may be inefficient. Cool containers with flooding quantities of water until well after fire is out.

**Unsuitable extinguishing media** CAUTION: Use of water spray when fighting fire may be inefficient.

**Specific hazards arising from the chemical** Risk of ignition. Keep product and empty container away from heat and sources of ignition. In the event of fire, cool tanks with water spray. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

**Hazardous combustion products** Smoke, CO, and other products of incomplete combustion.

**Explosion data**  
Sensitivity to Mechanical Impact None.  
Sensitivity to Static Discharge Yes.

**Special protective equipment for fire-fighters** Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible withdraw from area and let fire burn.

**Further information** ALWAYS stay away from tanks engulfed in fire. Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank. Do not direct water at source of leak or safety devices; icing may occur. Cool containers with flooding quantities of water until well after fire is out. Do not allow run-off from fire-fighting to enter drains or water courses.

**NFPA** Health hazards 1 Flammability 1 Stability 0 Physical and chemical properties -

**6. ACCIDENTAL RELEASE MEASURES**

**Personal precautions, protective equipment and emergency procedures**

**Personal precautions** Evacuate personnel to safe areas. Use personal protective equipment as required. See section 8 for more information. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Keep people away from and upwind of spill/leak. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Pay attention to flashback. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Do not touch or walk through spilled material.

**Other Information** Ventilate the area. Refer to protective measures listed in Sections 7 and 8.

**Environmental precautions**

**Environmental precautions** Refer to protective measures listed in Sections 7 and 8. Prevent further leakage or spillage if safe to do so. Prevent product from entering drains.

**Methods and material for containment and cleaning up**

**Methods for containment** Stop leak if you can do it without risk. Do not touch or walk through spilled material. A vapor suppressing foam may be used to reduce vapors. Dike far ahead of spill to collect runoff water. Keep out of drains, sewers, ditches and waterways. Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal.

**Methods for cleaning up** Take precautionary measures against static discharges. Dam up. Soak up with inert absorbent material. Pick up and transfer to properly labeled containers.

**Prevention of secondary hazards** Clean contaminated objects and areas thoroughly observing environmental regulations.

**7. HANDLING AND STORAGE**

**Precautions for safe handling**

**Advice on safe handling** Use personal protection equipment. Avoid contact with skin and eyes. Avoid breathing vapors or mists. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Use grounding and bonding connection when transferring this material to prevent static discharge, fire or explosion. Use with local exhaust ventilation. Use spark-proof tools and explosion-proof equipment. Keep in an area equipped with sprinklers. Use according to package label instructions. Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. Remove contaminated clothing and shoes.

**Conditions for safe storage, including any incompatibilities**

**Storage Conditions** Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity). Keep in properly labeled containers. Do not store near combustible materials. Keep in an area equipped with sprinklers. Store in accordance with the particular national regulations. Store in accordance with local regulations. Store locked up.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

Chemical Name	ACGIH TLV	OSHA PEL
Ethanol; Ethyl alcohol 64-17-5	STEL: 1000 ppm	TWA: 1000 ppm TWA: 1900 mg/m <sup>3</sup> (vacated) TWA: 1000 ppm (vacated) TWA: 1900 mg/m <sup>3</sup>
Pentane 109-66-0	TWA: 1000 ppm	TWA: 1000 ppm TWA: 2950 mg/m <sup>3</sup> (vacated) TWA: 600 ppm (vacated) TWA: 1800 mg/m <sup>3</sup> (vacated) STEL: 750 ppm (vacated) STEL: 2250 mg/m <sup>3</sup>
Toluene 108-88-3	TWA: 20 ppm	TWA: 200 ppm (vacated) TWA: 100 ppm (vacated) TWA: 375 mg/m <sup>3</sup> (vacated) STEL: 150 ppm (vacated) STEL: 560 mg/m <sup>3</sup>

		Ceiling: 300 ppm (vacated) TWA: 800 ppm (vacated) TWA: 1900 mg/m <sup>3</sup>
Butane 106-97-8	STEL: 1000 ppm	
Benzene 71-43-2	STEL: 2.5 ppm TWA: 0.5 ppm S*	TWA: 10 ppm applies to industry segments exempt from the benzene standard at 29 CFR 1910.1028 TWA: 1 ppm (vacated) TWA: 10 ppm unless specified in 1910.1028 (vacated) STEL: 50 ppm 10 min unless specified in 1910.1028 (vacated) Ceiling: 25 ppm unless specified in 1910.1028 Ceiling: 25 ppm STEL: 5 ppm see 29 CFR 1910.1028

S\* - Potential exposure by cutaneous route

NOTE: Limits shown for guidance only. For additional information, OSHA's 1989 air contaminants standard exposure limits provided even though the limits were vacated in 1992. State, local or other agencies or advisory groups may have established more stringent limits. Follow applicable regulations.

#### Appropriate engineering controls

**Engineering controls**                      Showers  
   Eyewash stations  
   Ventilation systems.

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

**Eye/face protection**                      Tight sealing safety goggles.

**Hand Protection**                              Wear suitable gloves. Impervious gloves.

**Skin and body protection**                      Wear suitable protective clothing. Long sleeved clothing. Chemical resistant apron. Antistatic boots.

**Respiratory protection**                      When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. Use a NIOSH approved respirator when there is a potential for airborne concentrations to exceed occupational exposure limits. Refer to OSHA 29 CFR 1910.134, ANSI Z88.2, NIOSH Respirator Decision Logic, and the respirator manufacturer for additional guidance on respiratory protection selection. A Self-Contained Breathing Apparatus (SCBA) should be used for fire fighting. Use a NIOSH approved positive-pressure supplied air respirator if there is a potential for uncontrolled release, exposure levels are unknown, in oxygen deficient (less than 19.5% oxygen), or any other circumstance where an air-purifying respirator may not provide adequate protection.

**General hygiene considerations**                      Do not eat, drink or smoke when using this product. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

#### Information on basic physical and chemical properties

Physical State @20°C	Liquid
Appearance	Liquid
Odor	Alcohol
Color	Clear to straw
Odor threshold	0.5 - 1.1

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	Not applicable	



<b>Melting point / freezing point</b>	-101 °C / -150 °F	
<b>Boiling range</b>	74 °C	
<b>Flash point</b>	10 to 13 °C / °F	
<b>Evaporation rate</b>	3	
<b>Flammability (solid, gas)</b>	Not applicable	
<b>Flammability Limit in Air %</b>		
<b>Upper flammability limit:</b>	7.6	
<b>Lower flammability limit:</b>	3.3	
<b>Vapor pressure</b>	345	
<b>Vapor density</b>	1.6	Approximately
<b>Relative density</b>	0.8	
<b>Water solubility</b>	Miscible in water	
<b>Solubility in other solvents</b>	No data available	
<b>Partition coefficient</b>	2 to 7	
<b>Autoignition temperature</b>	250 °C / 482 °F	Approximately
<b>Decomposition temperature</b>	No data available	
<b>Kinematic viscosity</b>	No data available	
<b>Dynamic viscosity</b>	No data available	
<b>Explosive properties</b>	No data available	
<b>Oxidizing properties</b>	No data available	
<b>Minimum Ignition Energy (mJ)</b>	No data available	
<b>K<sub>st</sub> (bar.m/s)</b>	No data available	
<b>Softening point</b>	No data available	
<b>VOC Content (%)</b>	No data available	
<b>Density</b>	No data available	
<b>Bulk density</b>	Not applicable	
<b>Conductivity</b>	Hydrocarbon liquids without static dissipater additive may have conductivity below 1 picoSiemens per meter (pS/m). The highest electro-static ignition risks are associated with "ultra-low conductivities" below 5 pS/m. See Section 7 for sources of information on defining safe loading and handling procedures for low conductivity products	

## 10. STABILITY AND REACTIVITY

<b>Reactivity</b>	This product is non-reactive under normal conditions.
<b>Chemical stability</b>	Stable under recommended storage conditions.
<b>Possibility of hazardous reactions</b>	None under normal processing.
<b>Conditions to avoid</b>	Heat, flames and sparks.
<b>Incompatible materials</b>	Oxidizing or reducing agents. Acids. Alkali.
<b>Hazardous decomposition products</b>	None under normal use conditions.

## 11. TOXICOLOGICAL INFORMATION

### Information on likely routes of exposure

<b>Inhalation</b>	Specific test data for the substance or mixture is not available.
<b>Eye contact</b>	Specific test data for the substance or mixture is not available.
<b>Skin contact</b>	Specific test data for the substance or mixture is not available.
<b>Ingestion</b>	Specific test data for the substance or mixture is not available.

### Information on toxicological effects

<b>Symptoms</b>	No information available.
-----------------	---------------------------

### Numerical measures of toxicity

**Acute toxicity**

The following values are calculated based on chapter 3.1 of the GHS document .

ATEmix (oral) 7,166.00 mg/kg  
 ATEmix (inhalation-dust/mist) 53.00 mg/l

Chemical Name	Oral LD50	LD50/dermal/rat - NOEL/NITS (Wizard) mg/kg	Inhalation LC50
Ethanol; Ethyl alcohol 64-17-5	= 7060 mg/kg ( Rat )	-	= 124.7 mg/L ( Rat ) 4 h
Gasoline, natural; Low boiling point naphtha 8006-61-9	-	-	= 300 g/m <sup>3</sup> ( Rat ) 5 min
Pentane 109-66-0	> 2000 mg/kg ( Rat )	= 3000 mg/kg ( Rabbit )	= 364 g/m <sup>3</sup> ( Rat ) 4 h
Toluene 108-88-3	= 2600 mg/kg ( Rat )	= 12000 mg/kg ( Rabbit )	= 12.5 mg/L ( Rat ) 4 h
Butane 106-97-8	-	-	= 658 g/m <sup>3</sup> ( Rat ) 4 h
Benzene 71-43-2	= 1800 mg/kg ( Rat ) = 810 mg/kg ( Rat )	> 8200 mg/kg ( Rabbit )	= 44.66 mg/L ( Rat ) 4 h

**Delayed and immediate effects as well as chronic effects from short and long-term exposure**

**Chemical Name**

**Ethanol; Ethyl alcohol**

Short term (acute) direct contact with liquid ethanol to eyes or skin may cause eye irritation or dry skin. Acute exposure to ethanol by inhalation of high concentrations of vapor may cause irritation of the eyes and respiratory tract. Inhalation studies show that ethanol overexposure can produce incoordination and narcosis (drowsiness or unconsciousness) and ethanol targets the central nervous system. Long term or repeated to high enough levels by skin contact with liquid ethanol can result in defatting of the skin and dermatitis. There is little evidence to suggest that ethanol is genotoxic; it may have a very limited capacity to induce genetic changes in vivo at very high doses achievable in humans by deliberate oral ingestion. Evidence of the carcinogenicity of ethanol in humans is confined to studies assessing the impact of alcoholic beverage consumption. IARC has classified ethanol in alcoholic beverages as carcinogenic to humans (Group 1). Studies in laboratory rats indicate no fertility or developmental effects at inhalation exposures up to 16000 ppm. The potential for reproductive and developmental toxicity exists in humans from deliberate consumption of ethanol. Additional severe acute and chronic effects can be expected with ethanol overconsumption, however, ingestion is not expected to be a significant route of exposure in an occupational setting.

**Pentane**

Pentane may be fatal if it is swallowed and enters the airway. If inhaled, short-term (acute) overexposure can cause drowsiness, disorientation, other narcotic effects, and possibly death. Acute exposure to n-pentane by inhalation and ingestion results in low toxicity in animal studies. Exposure can cause irritation to eyes, skin (including dermatitis), and nose. Sensitization has not been reported. Exposure to high enough levels may also affect the central nervous system (CNS).

**Butane**

If inhaled, short-term overexposure to hydrocarbon gases may cause rapid suffocation. Inhalation of butane at very high concentrations can cause drowsiness, narcosis, asphyxia, and cardiac arrhythmia; butane affects the central nervous system (CNS). As gases, the primary route of exposure is inhalation; compressed gases may exhibit additional hazards. In animal studies, 2-Butene was the most toxic of the C1-4 hydrocarbon gas (C1-4 HCs) evaluated for its short term (acute) toxicity when inhaled for four hours at 10,000 ppm (23.1 g/m<sup>3</sup>); no fatalities were observed, and no LC50 value was established. Repeated dose toxicity has been observed in combination with testing for reproductive and developmental toxicity; the lowest does at which adverse effects were observed (LOAEL) following repeated dose reported to be 5,000 ppm. Adverse effects included lowered body weight, though some changes in blood chemistry were also reported. C1-4 HCs were not mutagenic in several test systems using bacteria or mammalian cells, nor were they

mutagenic in animal studies. No adverse developmental effects were reported for the highest dose tested (NOAEL ≥ 5,000 ppm). Reproductive toxicity was reported for isobutene (LOAEL = 9,000 ppm) as reduced fertility in females and pregnancy loss; caution should be used in interpreting the results of this study due to the small number of animals tested. The carcinogenicity of individual petroleum streams varies due to factors such as source and processing; IARC and ECHA C&L Inventory reports individually on the carcinogenicity of these substances.

**Benzene**

Benzene exposure may occur through inhalation, ingestion, skin absorption or eye contact. Benzene exposure can cause skin, eye and respiratory irritation. The most characteristic systemic effect resulting from high enough intermediate and chronic benzene exposure is arrested development of blood cells. Studies have linked overexposure to benzene to many hematological effects including aplastic anemia, pancytopenia, leukopenia, and myelodysplastic syndrome. In vivo and in vitro data from both humans and animals show that benzene and/or its metabolites are genotoxic. Studies in animals provide supporting evidence for the carcinogenicity of inhaled benzene. Epidemiological studies have reported a causal relationship between occupational benzene exposures and acute myelogenous leukemia. Some studies suggest associations between benzene exposure and non-Hodgkin's lymphoma, multiple myeloma, and other cancers. Benzene has been classified as carcinogenic to humans (Group 1) by IARC, and the ECHA C&L Inventory states it may cause cancer (Carc. 1B). IARC concluded that benzene causes acute myeloid leukemia and a positive association has been observed for acute lymphatic leukemia, chronic lymphatic leukemia, non-hodgkin lymphoma, and multiple myeloma. Human studies suggest that female fertility and menstrual cycles were effected by benzene exposure; however, due to uncertainties in exposure and limited data the studies were considered inconclusive. Developmental effects have been observed in animals including persistent hematopoietic anomalies. It has been suggested that the reported benzene fetotoxicity of decreased weight and skeletal variants is a function of maternal toxicity.

**Health hazard and classification information**

**Skin Corrosion/Irritation Category** No information available.

**Serious eye damage/eye irritation** No information available.

No information available.

**Germ cell mutagenicity** Classification based on data available for ingredients. Contains a known or suspected mutagen. The table below indicates ingredients above the cut-off threshold considered as relevant which are listed as mutagenic.

**Carcinogenicity** Classification based on data available for ingredients. Contains a known or suspected carcinogen.

The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical Name	ACGIH	IARC	NTP	OSHA
Ethanol; Ethyl alcohol 64-17-5	A3	Group 1	Known	X
Toluene 108-88-3	-	Group 3	-	-
Benzene 71-43-2	A1	Group 1	Known	X

**Reproductive toxicity** Classification based on data available for ingredients. Contains a known or suspected reproductive toxin. The table below indicates ingredients above the cut-off threshold considered as relevant which are listed as reproductive toxins.

**Target Organ Systemic Toxicant - Single Exposure** No information available.

**Target Organ Systemic Toxicant - Repeated Exposure** No information available.

**Target organ effects**

liver, Respiratory system, Eyes, Skin, Central nervous system, blood, Reproductive System.

**Aspiration hazard**

No information available.

**12. ECOLOGICAL INFORMATION**

**Additional Ecological Information**

Release of this product should be prevented from contaminating soil and water and from entering drainage and sewer systems. U.S.A. regulations require reporting spills of this material that could reach any surface waters. The toll free number to the U.S. Coast Guard National Response Center is (800) 424-8802

**Ecotoxicity**

Chemical Name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Ethanol; Ethyl alcohol 64-17-5	-	12.0 - 16.0: 96 h Oncorhynchus mykiss m/L LC50 static 100: 96 h Pimephales promelas mg/L LC50 static 13400 - 15100: 96 h Pimephales promelas mg/L LC50 flow-through	-	9268 - 14221: 48 h Daphnia magna mg/L LC50 2: 48 h Daphnia magna mg/L EC50 Static 10800: 24 h Daphnia magna mg/L EC50
Gasoline, natural; Low boiling point naphtha 8006-61-9	4700: 72 h Pseudokirchneriella subcapitata mg/L EC50	56: 96 h Oncorhynchus mykiss mg/L LC50	-	-
Pentane 109-66-0	-	9.99: 96 h Lepomis macrochirus mg/L LC50 9.87: 96 h Oncorhynchus mykiss mg/L LC50 11.59: 96 h Pimephales promelas mg/L LC50	-	9.74: 48 h Daphnia magna mg/L EC50
Toluene 108-88-3	12.5: 72 h Pseudokirchneriella subcapitata mg/L EC50 static 433: 96 h Pseudokirchneriella subcapitata mg/L EC50	12.6: 96 h Pimephales promelas mg/L LC50 static 5.89 - 7.81: 96 h Oncorhynchus mykiss mg/L LC50 flow-through 15.22 - 19.05: 96 h Pimephales promelas mg/L LC50 flow-through 5.8: 96 h Oncorhynchus mykiss mg/L LC50 semi-static 11.0 - 15.0: 96 h Lepomis macrochirus mg/L LC50 static 50.87 - 70.34: 96 h Poecilia reticulata mg/L LC50 static 14.1 - 17.16: 96 h Oncorhynchus mykiss mg/L LC50 static 28.2: 96 h Poecilia reticulata mg/L LC50 semi-static 54: 96 h Oryzias latipes mg/L LC50 static	-	11.5: 48 h Daphnia magna mg/L EC50 5.46 - 9.83: 48 h Daphnia magna mg/L EC50 Static
Benzene 71-43-2	29: 72 h Pseudokirchneriella subcapitata mg/L EC50	10.7 - 14.7: 96 h Pimephales promelas mg/L LC50 flow-through 5.3: 96 h Oncorhynchus mykiss mg/L LC50 flow-through 22.49: 96 h Lepomis macrochirus mg/L LC50 static 28.6: 96	-	10: 48 h Daphnia magna mg/L EC50 8.76 - 15.6: 48 h Daphnia magna mg/L EC50 Static

		h Poecilia reticulata mg/L LC50 static 22330 - 41160: 96 h Pimephales promelas µg/L LC50 static 70000 - 142000: 96 h Lepomis macrochirus µg/L LC50 static		
--	--	---	--	--

**Persistence and degradability** No information available.

**Bioaccumulation** There is no data for this product.

**Component Information**

Chemical Name	Partition coefficient
Ethanol; Ethyl alcohol 64-17-5	-0.32
Gasoline, natural; Low boiling point naphtha 8006-61-9	2.1 - 6.0
Pentane 109-66-0	3.39
Toluene 108-88-3	2.7
Butane 106-97-8	2.89
Benzene 71-43-2	2.1

**Other adverse effects** No information available.

**13. DISPOSAL CONSIDERATIONS**

**Waste treatment methods**

**Waste from residues/unused products** Should not be released into the environment. Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

**Contaminated packaging** Empty containers pose a potential fire and explosion hazard. Do not cut, puncture or weld containers.

**US EPA Waste Number** U019 U220 U239

Chemical Name	RCRA	RCRA Basis for Listing	RCRA - D Series Wastes	RCRA - U Series Wastes
Toluene 108-88-3	U220	Included in waste streams: F005, F024, F025, F039, K015, K036, K037, K149, K151	-	U220
Benzene 71-43-2	U019	Included in waste streams: F005, F024, F025, F037, F038, F039, K085, K104, K105, K141, K142, K143, K144, K145, K147, K151, K159, K169, K171, K172	0.5 mg/L regulatory level	U019

Chemical Name	RCRA - Halogenated Organic Compounds	RCRA - P Series Wastes	RCRA - F Series Wastes	RCRA - K Series Wastes
Toluene 108-88-3	-	-	Toxic waste waste number F025 Waste description: Condensed light ends,	-

			spent filters and filter aids, and spent desiccant wastes from the production of certain chlorinated aliphatic hydrocarbons, by free radical catalyzed processes. These chlorinated aliphatic hydrocarbons are those having carbon chain lengths ranging from one to and including five, with varying amounts and positions of chlorine substitution.	
--	--	--	---	--

**California Hazardous Waste Status** This product contains one or more substances that are listed with the State of California as a hazardous waste.

Chemical Name	California Hazardous Waste Status
Ethanol; Ethyl alcohol 64-17-5	Toxic Ignitable
Pentane 109-66-0	Toxic Ignitable
Toluene 108-88-3	Toxic Ignitable
Benzene 71-43-2	Toxic Ignitable

**14. TRANSPORT INFORMATION**

**DOT**

UN/ID no UN1987  
 Proper Shipping Name ALCOHOLS, N.O.S.  
 Hazard Class 3  
 Packing group II  
 Reportable Quantity (RQ) (Benzene: RQ (kg)= 4.54, Xylenes (mixed isomers): RQ (kg)= 45.40)  
 Special Provisions 172, IB2, T7, TP1, TP8, TP28  
 Description UN1987, ALCOHOLS, N.O.S., 3, II  
 Emergency Response Guide Number 127

**TDG**

UN/ID no UN1987  
 Proper Shipping Name ALCOHOLS, N.O.S.  
 Hazard Class 3  
 Packing group II  
 Description UN1987, ALCOHOLS, N.O.S. (ETHANOL; ETHYL ALCOHOL, PENTANE), 3, II

**MEX**

UN/ID no UN1987  
 Proper Shipping Name ALCOHOLS, N.O.S.  
 Hazard Class 3  
 Special Provisions 274  
 Packing group II  
 Description UN1987, ALCOHOLS, N.O.S. (ETHANOL; ETHYL ALCOHOL, PENTANE), 3, II

**IATA**

UN/ID no UN1987  
 Proper Shipping Name ALCOHOLS, N.O.S.

**Hazard Class** 3  
**Packing group** II  
**ERG Code** 3L  
**Description** UN1987, ALCOHOLS, N.O.S. (ETHANOL; ETHYL ALCOHOL, PENTANE), 3, II

**IMDG**

**UN/ID no** UN1987  
**Proper Shipping Name** ALCOHOLS, N.O.S.  
**Hazard Class** 3  
**Packing group** II  
**EmS No.** F-E, S-D  
**Special Provisions** 274  
**Description** UN1987, ALCOHOLS, N.O.S. (Ethanol; Ethyl alcohol, Pentane), 3, II, (0°C c.c.)

**15 REGULATORY INFORMATION**

**International Inventories**

**TSCA** Listed  
**DSL/NDSL** Listed  
**ENCS** Not Listed  
**IECSC** Listed  
**KECL** Listed  
**PICCS** Listed  
**AICS** Listed

**Legend:**

**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory  
**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List  
**ENCS** - Japan Existing and New Chemical Substances  
**IECSC** - China Inventory of Existing Chemical Substances  
**KECL** - Korean Existing and Evaluated Chemical Substances  
**PICCS** - Philippines Inventory of Chemicals and Chemical Substances  
**AICS** - Australian Inventory of Chemical Substances

**US Federal Regulations**

**SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

**SARA 311/312 Hazard Categories**

**Acute health hazard** No  
**Chronic Health Hazard** Yes  
**Fire hazard** Yes  
**Sudden release of pressure hazard** No  
**Reactive Hazard** No

**CWA (Clean Water Act)**

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Toluene 108-88-3	1000 lb	X	X	X
Benzene 71-43-2	10 lb	X	X	X

**CERCLA**

The CERCLA definition of hazardous substances contains a "petroleum exclusion" clause which exempts crude oil, fractions of crude oil, and products (both finished and intermediate) from the crude oil refining process and any indigenous components of such from the CERCLA Section 103 reporting requirements. However, other federal reporting requirements, including SARA Section

304, as well as the Clean Water Act may still apply.

**US State Regulations**

**California Proposition 65**

This product contains the following Proposition 65 chemicals.

Chemical Name	California Proposition 65
Ethanol; Ethyl alcohol - 64-17-5	Carcinogen Developmental
Benzene - 71-43-2	Carcinogen Developmental Male Reproductive
Toluene - 108-88-3	Developmental

**U.S. State Right-to-Know Regulations**

**US State Regulations**

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Ethanol; Ethyl alcohol 64-17-5	X	X	X
Gasoline, natural; Low boiling point naphtha 8006-61-9	-	X	-
Pentane 109-66-0	X	X	X
Xylene 1330-20-7	X	X	X
Butane 106-97-8	X	X	X
Toluene 108-88-3	X	X	X
Benzene 71-43-2	X	X	X

**16. OTHER INFORMATION, INCLUDING DATE OF PREPARATION OF THE LAST REVISION**

Revision Date 06-Jul-2017

Revision Note No information available.

**Disclaimer**

Tesoro Companies, Inc. (Tesoro) provides the information on this Safety Data Sheet (SDS) in order to meet its obligations under 29 CFR 1910.1200, and does not hereby make any guarantee of product specifications or suitability for any particular purpose. Tesoro does not assume any liability arising out of the use of Tesoro's product or the use of information provided on this SDS. The end user of the product has the responsibility for evaluating the adequacy of the data under the conditions of use, determining the safety, toxicity and suitability of the product under these conditions, and obtaining additional or clarifying information where uncertainty exists. No guarantee expressed or implied is made as to the effects of such use, the results to be obtained, or the safety and toxicity of the product in any specific application. Furthermore, the information herein is not represented as absolutely complete, since it is not practicable to provide all relevant information in the format of this document, since additional information may be necessary under exceptional conditions of use, and since Tesoro prepared this SDS based on information available on the date of its publication.

1506

End of Safety Data Sheet





**RECEIVED**

**OCT 28 2019**

Contra Costa Health  
Hazardous Materials

October 22, 2019

ATTENTION: Randall L. Sawyer  
Chief Environmental Health and Hazardous Materials Officer  
Contra Costa Hazardous Materials Program  
4585 Pacheco Boulevard, Suite 100  
Martinez, California 94553

VIA CERTIFIED MAIL 7006 2150 0003 2101 0321

**SUBJECT: Transmittal of CCHS HazMat Incident Notification  
Shore Terminals LLC  
90 San Pablo Avenue  
Crockett, California**

Dear Mr. Sawyer:

Pursuant to my email transmittal of the subject report, please find the hard copy for your files.

Do not hesitate to call if you have questions regarding this notification.

Respectfully,

A handwritten signature in black ink, appearing to read "Stephan Rosen".

**Stephan Rosen**  
Senior HSE Manager – West Region

Attachment

**Shore Terminals LLC  
90 San Pablo Avenue, Crockett, CA 94525  
Phone 510.787.1076 Fax 510.787.1205**