SECTION 1. IDENTIFICATION

Product name: NAPHTHA (SOUR)

Synonyms: Light Naphtha, Heavy Naphtha, Straight Run Naphtha, Pre-flash Naphtha, Cold Charge, Heavy Straight Run Naphtha, Debutanizer Bottoms, Debutanizer Feed, ER56

Manufacturer or supplier's details
SUNCOR ENERGY INC.
P.O. Box 2844, 150 - 6th Avenue South-West
Calgary Alberta T2P 3E3
Canada

Emergency telephone number
Suncor Energy: +1 403-296-3000;
Canutec Transportation: 1-888-226-8832 (toll-free) or 613-996-6666;
Poison Control Centre: Consult local telephone directory for emergency number(s).

Recommended use of the chemical and restrictions on use
Recommended use: Light and Heavy naphthas are intermediate refinery products used as feedstocks to platformer units for the production of high octane motor gasoline blending components.

Prepared by: Product Safety: +1 905-804-4752

SECTION 2. HAZARDS IDENTIFICATION

Emergency Overview

<table>
<thead>
<tr>
<th>Appearance</th>
<th>liquid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colour</td>
<td>Clear.</td>
</tr>
<tr>
<td>Odour</td>
<td>Gasoline like., &quot;Rotten egg&quot; if H2S present, but odour is an unreliable warning, since it may deaden the sense of smell.</td>
</tr>
</tbody>
</table>

GHS Classification

Flammable liquids: Category 1
Skin irritation: Category 2
Germ cell mutagenicity: Category 1B
Carcinogenicity: Category 1A
Reproductive toxicity: Category 2
Specific target organ toxicity - single exposure: Category 3 (Central nervous system)
Specific target organ toxicity - repeated exposure: Category 1 (Immune system, Blood)

Aspiration hazard: Category 1

GHS label elements

Hazard pictograms

Signal word: Danger

Hazard statements:
Extremely flammable liquid and vapour.
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.
Causes damage to organs (Immune system, Blood) through prolonged or repeated exposure.

Precautionary statements:

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

Response:
IF SWALLOWED: Immediately call a POISON CENTER/doctor.
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell.
IF exposed or concerned: Get medical advice/ attention.
Do NOT induce vomiting.
If skin irritation occurs: Get medical advice/ attention.
Take off contaminated clothing and wash it before reuse.
In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

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

Disposal:
Dispose of contents/container to an approved waste disposal plant.

Potential Health Effects
Primary Routes of Entry:
- Eye contact
- Ingestion
- Inhalation
- Skin contact

Aggravated Medical Condition:
None known.

Other hazards
None known.

IARC
- Group 1: Carcinogenic to humans
  Benzene 71-43-2

- Group 2A: Probably carcinogenic to humans
  Naphtha, petroleum, light straight-run 64741-46-4

ACGIH
- Confirmed human carcinogen
  Benzene 71-43-2

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture: Mixture

Hazardous components

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS-No.</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Naphtha (petroleum), light hydrocracked</td>
<td>64741-69-1</td>
<td>85 - 100 %</td>
</tr>
<tr>
<td>naphtha (petroleum), full-range straight-run</td>
<td>64741-42-0</td>
<td></td>
</tr>
<tr>
<td>naphtha (petroleum), heavy straight-run</td>
<td>64741-41-9</td>
<td></td>
</tr>
<tr>
<td>naphtha (petroleum), light straight-run</td>
<td>64741-46-4</td>
<td></td>
</tr>
<tr>
<td>naphtha (petroleum), heavy hydrocracked</td>
<td>64741-78-2</td>
<td></td>
</tr>
<tr>
<td>toluene</td>
<td>108-88-3</td>
<td>3 - 7 %</td>
</tr>
<tr>
<td>benzene</td>
<td>71-43-2</td>
<td>1 - 2 %</td>
</tr>
<tr>
<td>xylene</td>
<td>1330-20-7</td>
<td>3 - 6 %</td>
</tr>
</tbody>
</table>

Product may contain 0 - 0.5 ppm hydrogen sulphide.
All concentrations are in percent by weight.
SECTION 4. FIRST AID MEASURES

If inhaled
- Move to fresh air.
- Artificial respiration and/or oxygen may be necessary.
- Seek medical advice.

In case of skin contact
- In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
- Wash skin thoroughly with soap and water or use recognized skin cleanser.
- Wash clothing before reuse.
- Seek medical advice.

In case of eye contact
- Remove contact lenses.
- Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
- Obtain medical attention.

If swallowed
- Rinse mouth with water.
- DO NOT induce vomiting unless directed to do so by a physician or poison control center.
- Never give anything by mouth to an unconscious person.
- Seek medical advice.

Most important symptoms and effects, both acute and delayed
- Respiratory, skin and eye irritation; nausea; cancer.
- Exposure to very high levels of hydrogen sulphide (> 500 ppm) will result in unconsciousness and death.
- Symptoms of hydrogen sulphide overexposure include respiratory tract irritation and shortness of breath.

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

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media
- Dry chemical
- Carbon dioxide (CO2)
- Water spray
- Water fog
- Foam

Unsuitable extinguishing media
- Do NOT use water jet.

Specific hazards during firefighting
- Cool closed containers exposed to fire with water spray.

Hazardous combustion products
- Carbon oxides (CO, CO2), aldehydes, ketones, hydrocarbons, smoke and irritating vapours as products of incomplete combustion.
SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: For personal protection see section 8.
- Ensure adequate ventilation.
- Evacuate personnel to safe areas.
- Material can create slippery conditions.

Environmental precautions: If the product contaminates rivers and lakes or drains inform respective authorities.

Methods and materials for containment and cleaning up: Prevent further leakage or spillage if safe to do so.
- Remove all sources of ignition.
- Soak up with inert absorbent material.
- Non-sparking tools should be used.
- Ensure adequate ventilation.
- Contact the proper local authorities.

SECTION 7. HANDLING AND STORAGE

Advice on safe handling: Avoid exposure - obtain special instructions before use.
- For personal protection see section 8.
- Smoking, eating and drinking should be prohibited in the application area.
- Take precautionary measures against static discharges.
- Avoid spark promoters. Ground/bond container and equipment. These alone may be insufficient to remove static electricity.
- Keep away from open flames, hot surfaces and sources of ignition.
- Do not ingest.
- Do not use sparking tools.
- Do not enter areas where used or stored until adequately ventilated.
- Avoid contact with skin, eyes and clothing.
- Use only with adequate ventilation.
- Hydrogen sulphide may accumulate in enclosed spaces.
- Open tank car hatches with caution.

Conditions for safe storage: Store in original container.
- Containers which are opened must be carefully resealed and kept upright to prevent leakage.
- Keep in a dry, cool and well-ventilated place.
- Keep in properly labelled containers.
- To maintain product quality, do not store in heat or direct sunlight.
- Keep away from sources of ignition - No smoking.
Hydrogen sulphide may be released and collect in the vapor space of process vessels and storage tanks.

### SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### Components with workplace control parameters

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Value type (Form of exposure)</th>
<th>Control parameters / Permissible concentration</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>toluene</td>
<td>108-88-3</td>
<td>TWA</td>
<td>50 ppm 188 mg/m³</td>
<td>CA AB OEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>20 ppm</td>
<td>CA BC OEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>50 ppm 188 mg/m³</td>
<td>CA QC OEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>20 ppm</td>
<td>ACGIH</td>
</tr>
<tr>
<td>xylene</td>
<td>1330-20-7</td>
<td>STEL</td>
<td>150 ppm 651 mg/m³</td>
<td>CA AB OEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>100 ppm 434 mg/m³</td>
<td>CA AB OEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>100 ppm 434 mg/m³</td>
<td>CA QC OEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEV</td>
<td>150 ppm 651 mg/m³</td>
<td>CA QC OEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>100 ppm</td>
<td>CA BC OEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL</td>
<td>150 ppm</td>
<td>CA BC OEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>100 ppm</td>
<td>ACGIH</td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL</td>
<td>150 ppm</td>
<td>ACGIH</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>100 ppm</td>
<td>ACGIH</td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL</td>
<td>150 ppm</td>
<td>ACGIH</td>
</tr>
<tr>
<td>benzene</td>
<td>71-43-2</td>
<td>TWA</td>
<td>0.5 ppm 1.6 mg/m³</td>
<td>CA AB OEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL</td>
<td>2.5 ppm 8 mg/m³</td>
<td>CA AB OEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>0.5 ppm</td>
<td>CA BC OEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL</td>
<td>2.5 ppm</td>
<td>CA BC OEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>0.5 ppm</td>
<td>CA ON OEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL</td>
<td>2.5 ppm</td>
<td>CA ON OEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>1 ppm 3 mg/m³</td>
<td>CA QC OEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEV</td>
<td>5 ppm 15.5 mg/m³</td>
<td>CA QC OEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>0.5 ppm</td>
<td>ACGIH</td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL</td>
<td>2.5 ppm</td>
<td>ACGIH</td>
</tr>
<tr>
<td>hydrogen sulphide</td>
<td>7783-06-4</td>
<td>TWA</td>
<td>10 ppm 14 mg/m³</td>
<td>CA AB OEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ceiling</td>
<td>15 ppm 21 mg/m³</td>
<td>CA AB OEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ceiling</td>
<td>10 ppm</td>
<td>CA BC OEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>10 ppm</td>
<td>CA ON OEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL</td>
<td>15 ppm</td>
<td>CA ON OEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>10 ppm</td>
<td>CA QC OEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL</td>
<td>15 ppm</td>
<td>CA QC OEL</td>
</tr>
</tbody>
</table>
SAFETY DATA SHEET
NAPHTHA (SOUR)

Components | CAS-No. | Control parameters | Biological specimen | Sampling time | Permissible concentration | Basis |
---|---|---|---|---|---|---|
Toluene | 108-88-3 | Toluene | In blood | Prior to last shift of work-week | 0.02 mg/l | ACGIH BEI |
Toluene | | | Urine | End of shift (As soon as possible after exposure ceases) | 0.03 mg/l | ACGIH BEI |

Biological occupational exposure limits

Engineering measures: Use only in well-ventilated areas. Adequate ventilation to ensure that Occupational Exposure Limits are not exceeded. Use explosion-proof ventilation equipment.

Personal protective equipment
Respiratory protection: Concentration in air determines protection needed. Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. If hydrogen sulphide is present full-face supplied air respirator with escape bottle or SCBA is required.

Filter type: Always wear NIOSH-approved self-contained breathing apparatus when handling this material.

Hand protection Material: nitrile, Viton(R). Consult your PPE provider for breakthrough times and the specific glove that is best for you based on your use patterns. It should be realized that eventually any material regardless of their imperviousness, will get permeated by chemicals. Therefore, protective gloves should be regularly checked for wear and tear. At the first signs of hardening and cracks, they should be changed.

Remarks: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Eye protection: Wear face-shield and protective suit for abnormal processing.
problems.

Skin and body protection: Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place.

Protective measures: Wear suitable protective equipment.

Hygiene measures: Remove and wash contaminated clothing and gloves, including the inside, before re-use. Wash face, hands and any exposed skin thoroughly after handling.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: liquid

Colour: Clear.

Odour: Gasoline like, "Rotten egg" if H2S present, but odour is an unreliable warning, since it may deaden the sense of smell.

Odour Threshold: No data available

pH: No data available

Melting point: No data available

Boiling point/boiling range: >= 20 °C (68 °F)

Decomposition temperature: No data available

Flash point: < -18 °C (-0.40 °F)

Method: closed cup

Auto-Ignition Temperature: 288 °C (550 °F)

Evaporation rate: No data available

Flammability: Flammable. Easily ignitable by flame or spark. Vapours are heavier than air and may travel considerable distance to sources of ignition and flash back. Hydrogen sulphide may accumulate in the tank headspace or any other confined space. Rapid escape of vapour may generate static charge causing ignition.

Upper explosion limit: 7.5 % (V)

Lower explosion limit: 1 % (V)

Vapour pressure: < 879.2 mmHg (37.8 °C / 100.0 °F)

Relative vapour density: 3.5

Relative density: 0.7 - 0.75
Solubility(ies)
Water solubility: Hydrocarbon components virtually insoluble in water. Soluble in alcohol, ether, chloroform and benzene.
Partition coefficient: n-octanol/water: No data available
Viscosity
Viscosity, kinematic: No data available

SECTION 10. STABILITY AND REACTIVITY
Reactivity: No dangerous reaction known under conditions of normal use.
Chemical stability: Stable under normal conditions.
Possibility of hazardous reactions: Hazardous polymerisation does not occur.
Conditions to avoid: Heat, flames and sparks.
Incompatible materials: Reactive with oxidising agents, acids, interhalogens, diborane, metals and metal oxides.
Hazardous decomposition products: May release COx, aldehydes, ketones, hydrocarbons, smoke and irritating vapours when heated to decomposition.

SECTION 11. TOXICOLOGICAL INFORMATION
Information on likely routes of exposure
Eye contact
Ingestion
Inhalation
Skin contact

Acute toxicity
Product:
Acute oral toxicity: Remarks: No data available
Acute inhalation toxicity: Remarks: No data available
Acute dermal toxicity: Remarks: No data available

Components:
naphtha (petroleum), heavy straight-run:
Acute oral toxicity: LD50 (Rat): > 5,000 mg/kg,
Acute dermal toxicity: LD50 (Rabbit): > 2,000 mg/kg,
naphtha (petroleum), heavy hydrocracked:
 Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg,
 Acute inhalation toxicity : LC50 (Rat): > 5.24 mg/l
 Exposure time: 4 h
 Test atmosphere: dust/mist

toluene:
 Acute oral toxicity : LD50 (Rat): 5,580 mg/kg,
 Acute inhalation toxicity : LC50 (Rat): 7585 ppm
 Exposure time: 4 h
 Test atmosphere: dust/mist
 Acute dermal toxicity : LD50 (Rabbit): 12,125 mg/kg,

benzene:
 Acute oral toxicity : LD50 (Rat): 2,990 mg/kg,
 Acute inhalation toxicity : LC50 (Rat): 13700 ppm
 Exposure time: 4 h
 Test atmosphere: dust/mist
 Acute dermal toxicity : LD50 (Rabbit): > 8,240 mg/kg,

xylene:
 Acute oral toxicity : LD50 (Rat): 4,300 mg/kg,
 Acute inhalation toxicity : LC50 (Rat): 5000 ppm
 Exposure time: 4 h
 Test atmosphere: dust/mist
 Acute dermal toxicity : LD50 (Rabbit): > 1,700 mg/kg,

Skin corrosion/irritation

Product:
Remarks: Causes skin irritation.

Serious eye damage/eye irritation

Product:
Remarks: No data available

Respiratory or skin sensitisation
No data available

Germ cell mutagenicity

Product:
SAFETY DATA SHEET
NAPHTHA (SOUR)

Germ cell mutagenicity-
Assessment: May cause genetic defects.

No data available

Carcinogenicity

Product:
Carcinogenicity - Assessment: May cause cancer.

Reproductive toxicity

Product:
Reproductive toxicity - Assessment: Suspected of damaging fertility or the unborn child.

STOT - single exposure

Product:
Remarks: May cause drowsiness or dizziness.

STOT - repeated exposure

Product:
Remarks: Causes damage to organs through prolonged or repeated exposure.

No data available

Aspiration toxicity

Product:
May be fatal if swallowed and enters airways.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:
Toxicity to fish: Remarks: No data available
Toxicity to daphnia and other aquatic invertebrates: Remarks: No data available
Toxicity to algae: Remarks: No data available
Toxicity to bacteria: Remarks: No data available

Ecotoxicity

Product:
Toxicity to fish: Remarks: No data available
Toxicity to daphnia and other aquatic invertebrates: Remarks: No data available
Toxicity to algae: Remarks: No data available
Toxicity to bacteria: Remarks: No data available

Internet: www.petro-canada.ca/msds
Trademark of Suncor Energy Inc.
Persistence and degradability

**Product:**
Biodegradability: Remarks: No data available

Bioaccumulative potential
No data available

Mobility in soil
No data available

Other adverse effects
No data available

### SECTION 13. DISPOSAL CONSIDERATIONS

**Disposal methods**
Waste from residues: The product should not be allowed to enter drains, water courses or the soil.
Offer surplus and non-recyclable solutions to a licensed disposal company.
Waste must be classified and labelled prior to recycling or disposal.
Send to a licensed waste management company.
Dispose of as hazardous waste in compliance with local and national regulations.
Dispose of product residue in accordance with the instructions of the person responsible for waste disposal.

### SECTION 14. TRANSPORT INFORMATION

**International Regulations**

**IATA-DGR**
- UN/ID No.: UN 1268
- Proper shipping name: Petroleum distillates, n.o.s.
- Class: 3
- Packing group: I
- Labels: Class 3 - Flammable Liquid
- Packing instruction (cargo aircraft): 361

**IMDG-Code**
- UN number: UN 1268
- Proper shipping name: PETROLEUM DISTILLATES, N.O.S.
- Class: 3
- Packing group: I
- Labels: 3
- EmS Code: F-E, S-E
- Marine pollutant: no

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

TDG
UN number : UN 1268
Proper shipping name : PETROLEUM DISTILLATES, N.O.S.
Class : 3
Packing group : I
Labels : 3
ERG Code : 128
Marine pollutant : no

SECTION 15. REGULATORY INFORMATION

This product has been classified according to the hazard criteria of the Hazardous Products Regulations (HPR) and the SDS contains all of the information required by the HPR.

The components of this product are reported in the following inventories:
DSL On the inventory, or in compliance with the inventory

SECTION 16. OTHER INFORMATION

For Copy of SDS : Internet: www.petro-canada.ca/msds
Canada-wide: telephone: 1-800-668-0220; fax: 1-800-837-1228
For Product Safety Information: 1 905-804-4752
Prepared by : Product Safety: +1 905-804-4752
Revision Date : 2019/02/20

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.