Material Safety Data Sheet

MATERIAL IDENTITY: SHELLSOL® A150

COMPANY ADDRESS: Shell Chemical Company, P.O. Box 4320, Houston, TX 77210-4320, USA

SECTION 1 MATERIAL/COMPANY IDENTIFICATION

SECTION 2 COMPOSITION

<table>
<thead>
<tr>
<th>COMPONENTS</th>
<th>CAS#</th>
<th>CONCENTRATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solvent Naphtha (Petroleum), Heavy Aromatic</td>
<td>64742-94-5</td>
<td>100 %weight</td>
</tr>
</tbody>
</table>

Comments:
Solvent naphtha (petroleum), heavy aromatic is a complex stream of predominately C9 to C16 hydrocarbons; the exact composition and concentrations will vary. Contains naphthalene 5 - 8 %weight.

SECTION 3 HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Appearance & Odor: Colorless liquid. Aromatic hydrocarbon odor.
Health Hazards: Can cause severe lung damage and may be fatal if swallowed. May cause CNS depression.
Physical Hazards: COMBUSTIBLE.

Health Effects

Inhalation:
Breathing of high vapor concentrations may cause central nervous system (CNS) depression resulting in dizziness, light-headedness, headache, nausea and loss of coordination. Continued inhalation may result in unconsciousness and death. Vapors expected to be slightly irritating.

Eye Contact:
May cause temporary discomfort or irritation to the eye.

Skin Contact:
May be slightly irritating to the skin. Prolonged or repeated skin contact can cause defatting and drying of the skin which may result in a burning sensation and a dried, cracked appearance.
Ingestion:
Liquid can directly enter the lungs (aspiration) when swallowed or vomited. Serious lung damage and possibly fatal chemical pneumonia (chemical pneumonitis) can develop if this occurs.

Inhalation:
Move victim to fresh air. If the victim has difficulty breathing or tightness of the chest, is dizzy, vomiting or unresponsive, give 100% oxygen with rescue breathing or CPR as required and transport to the nearest medical facility.

Eye:
Flush eyes with water while holding eyelids open. Rest eyes for 30 minutes. If redness, burning, blurred vision or swelling persist, consult a physician.

Skin:
Wipe off excess material from exposed area. Flush exposed area with water and follow by washing with soap if available. If redness, swelling, pain and/or blisters occur, transport to the nearest medical facility for additional treatment.

Ingestion:
DO NOT induce vomiting. Have victim rinse mouth out with water, then drink sips of water to remove taste from mouth. In general no treatment is necessary unless large quantities are swallowed, however, get medical advice. If the victim is coughing, choking, has shortness of breath, or difficulty breathing, transport to the nearest medical facility for additional treatment. If any of the following delayed signs and symptoms appear within the next 6 hours, transport to the nearest medical facility: fever greater than 101°F, shortness of breath, chest congestion or continued coughing or wheezing. If vomiting occurs spontaneously, keep head below hips to prevent aspiration.

Flash Point:  145°F / 62.78°C
Autoignition Temperature:  896°F / 480°C
Flammability in Air:  0.6 - 6 %volume

Extinguishing Media:
Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames. Do not use a direct stream of water. Material will float and can be re-ignited on surface of water.

Fire Fighting Instructions:
COMBUSTIBLE. Clear fire area of all non-emergency personnel. Do not enter confined fire space without full bunker gear (helmet with face shield, bunker coats, gloves and rubber boots), including a positive pressure, NIOSH approved, self-contained breathing apparatus. Containers exposed to intense heat from fires should be cooled with large quantities of water to prevent weakening of container structure which could result in container rupture.

Protective Measures:
Eliminate potential sources of ignition (no smoking, flares, sparks or flames in immediate area).

Wear appropriate personal protective equipment (refer to Section 8) when responding to spills.
**Spill Management:**
Shut off source of leak if safe to do so. Dike and contain spill. Remove with vacuum trucks or pump to storage/salvage vessels. Soak up residue with an absorbent such as clay, sand or other suitable material and dispose of properly. Flush area with water to remove trace residue. Contain run-off from residue flush and dispose of properly. Prevent entry into waterways, sewer, basements or confined areas. Remove contaminated soil to remove contaminated trace residues. Dispose of in same manner as material. For small spills: Soak up residue with an absorbent such as clay, sand or other suitable material. Place in non-leaking container and seal tightly for proper disposal.

**Disposal:**
Proper disposal should be evaluated based on regulatory status of this material (refer to Section 13), potential contamination from subsequent use and spillage, and regulations governing disposal in the local area.

**Reporting:**
This material is covered by EPA’s Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) Petroleum Exclusion. Therefore, releases to the environment may not be reportable under CERCLA. Notify authorities if any exposures to the general public or environment occurs or is likely to occur.

### SECTION 7
**HANDLING AND STORAGE**

Avoid contact with eyes, skin and clothing. Avoid prolonged or repeated contact with eyes, skin and clothing. Wash thoroughly after handling.

**Handling:**
Surfaces that are sufficiently hot may ignite liquid material.

Keep away from heat, sparks and flame. Extinguish pilot lights, cigarettes and turn off other sources of ignition prior to use and until all vapors have dissipated. Use explosion-proof ventilation to prevent vapor accumulation while in use. Wash with soap and water before eating, drinking, smoking, applying cosmetics, or using toilet facilities. Launder contaminated clothing before reuse. Air-dry contaminated clothing in a well-ventilated area before laundering.

**Storage:**
Keep containers closed when not in use.

### SECTION 8
**EXPOSURE CONTROLS/PERSONAL PROTECTION**

<table>
<thead>
<tr>
<th>Material</th>
<th>Source</th>
<th>TWA</th>
<th>STEL</th>
<th>Ceiling</th>
<th>Notation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Naphthalene</td>
<td>ACGIH - TLV</td>
<td>10 ppm (m)</td>
<td>15 ppm (m)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Naphthalene</td>
<td>OSHA - PEL</td>
<td>10 ppm (v)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Naphthalene</td>
<td>OSHA - PEL-Interim Standard</td>
<td>10 ppm (v)</td>
<td>15 ppm (v)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trimethyl Benzene</td>
<td>ACGIH - TLV</td>
<td>25 ppm (v)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trimethyl Benzene</td>
<td>SHELL -</td>
<td>25 ppm (v)</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>
Shell has adopted as Interim Standards, the OSHA PELs that were established in 1989 and later rescinded.

**Exposure Controls**

The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Appropriate measures include:

- Adequate ventilation to control airborne concentrations below the exposure guidelines/limits.

**Personal Protective Equipment**

**Eye Protection:**
In accordance with good industrial hygiene practices, precautions should be taken to avoid eye contact.

**Skin Protection:**
Use protective clothing which is chemical resistant to this material. Selection of protective clothing depends on potential exposure conditions and may include gloves, boots, suits and other items. The selection(s) should take into account such factors as job task, type of exposure and durability requirements.

**Respiratory Protection:**
If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, an approved respirator must be worn. Respirator selection, use and maintenance should be in accordance with the requirements of the OSHA Respiratory Protection Standard, 29 CFR 1910.134.

Types of respirator(s) to be considered in the selection process include:

Air-Purifying Respirator for Organic Vapors, Supplied-Air Respirator, Self-Contained Breathing Apparatus (SCBA) - for use in environments with unknown concentrations or emergency situations.

### SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

**Appearance & Odor:** Colorless liquid. Aromatic hydrocarbon odor.

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Autoignition Temperature</td>
<td>896 °F</td>
</tr>
<tr>
<td>Boiling Point</td>
<td>359 - 419 °F</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>0.05 [vs. n-Butyl Acetate = 1]</td>
</tr>
<tr>
<td>Flammability in Air</td>
<td>0.6 - 6 %volume</td>
</tr>
<tr>
<td>Flash Point</td>
<td>145 °F [Tagliabue Closed Cup]</td>
</tr>
<tr>
<td>Solubility (in Water)</td>
<td>Negligible</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>0.9 @ 60 °F</td>
</tr>
<tr>
<td>Stability</td>
<td>Stable</td>
</tr>
<tr>
<td>Vapor Density (Air=1)</td>
<td>4.8</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>0.53 mmHg @ 68 °F</td>
</tr>
</tbody>
</table>
Stability:
Material is stable under normal conditions.

Conditions to Avoid:
Avoid heat and open flames.

Materials to Avoid:
Avoid contact with strong oxidizing agents.

Hazardous Decomposition Products:
Thermal decomposition is highly dependent on conditions. A complex mixture of airborne solids, liquids and gases, including carbon monoxide, carbon dioxide and other organic compounds will be evolved when this material undergoes combustion or thermal or oxidative degradation.

SECTION 11  TOXICOLOGICAL INFORMATION

Acute Toxicity

<table>
<thead>
<tr>
<th>Material Tested</th>
<th>Effects</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solvent Naphtha (Petroleum), Heavy Aromatic</td>
<td>Dermal - No deaths*</td>
<td>4 ml/kg (Rat)</td>
</tr>
<tr>
<td>Solvent Naphtha (Petroleum), Heavy Aromatic</td>
<td>Inhalation - No deaths*</td>
<td>710 ppm (v) (Rat) 4 hour(s)</td>
</tr>
<tr>
<td>Solvent Naphtha (Petroleum), Heavy Aromatic</td>
<td>Oral - LD50</td>
<td>10 ml/kg (Rat)</td>
</tr>
</tbody>
</table>

* No deaths at highest tested dose.

Eye Irritation:
slightly irritating [Rabbit]

Skin Irritation:
slightly irritating [Rabbit, 4 hour(s)]

Carcinogenicity:
The National Toxicology Program [NTP] has reported a chronic inhalation study in rats of naphthalene, a minor component of this product. Naphthalene caused severe inflammation and an increase in tumors of the nasal epithelium in both sexes. NTP considered this to be clear evidence of carcinogenic activity of naphthalene in rats. The relevance to the inhalation toxicity of this product in humans is unknown.

Other Information:
Repeated inhalation exposure of rats to a related material at irritating concentrations caused decreased white blood cell counts.
This section will be updated as ecological reviews are completed.

General Recommendations:
If this material becomes a waste, it would not be a hazardous waste by RCRA criteria (40 CFR 261). Place in an appropriate disposal facility in compliance with local regulations.

US Department of Transportation Classification:

Proper Shipping Name: Petroleum Distillates, N.O.S.
Technical Names (s): PETROLEUM NAPHTHA
Identification Number: UN1268
Hazard Class/Division: Combustible Liquid
Packing Group: III

Combustible Liquid: This material is not regulated under 49 CFR if in a container of 119 gallon capacity or less.
Oil: This material is an 'OIL' under 49 CFR Part 130 when transported in a container of 3500 gallon capacity or greater.

Emergency Response Guide # 128

International Air Transportation Association Classification:
This material is not classified as hazardous under IATA regulations.

International Maritime Organization - IMDG:
This material is not classified as hazardous under IMDG regulations.

The regulatory information provided is not intended to be comprehensive. Other federal, state and local regulations may apply to this material.

Federal Regulatory Status

Superfund Amendment & Reauthorization Act (SARA) Title III:

SARA Hazard Categories(311/312):

SARA Toxic Release Inventory(TRI) (313):

1,2,4-Trimethylbenzene (95-63-6) 5 - 11 % weight
Naphthalene (91-20-3) 5 - 8 % weight
Toxic Substances Control Act (TSCA) Inventory Status:
This material is listed on the EPA TSCA Inventory of Chemical Substances.

State Regulatory Status

The following chemicals are specifically listed by individual states; other product specific health and safety data in other sections of the MSDS may also be applicable for state requirements. For details on your regulatory requirements you should contact the appropriate agency in your state.

New Jersey Right-To-Know Chemical List:

1,2,4-Trimethylbenzene (95-63-6) 5 - 11 %weight
1,3,5-Trimethylbenzene (108-67-8) 0.2 - 1 %weight
Naphthalene (91-20-3) 5 - 8 %weight

Pennsylvania Right-To-Know Chemical List:

1,2,4-Trimethylbenzene (95-63-6) 5 - 11 %weight  Environmental Hazard
Naphthalene (91-20-3) 5 - 8 %weight  Environmental Hazard

SECTION 16  OTHER INFORMATION

HMIS Rating (Health, Fire, Reactivity): 1, 2, 0
NFPA Rating (Health, Fire, Reactivity): 1, 2, 0

Revision#: 5
Revision Date: 08/21/2001
Revisions since last change (discussion): Change made to Section 14.

Product Codes: Q7480

The information contained herein is based on data considered accurate. However, no warranty is expressed or implied regarding the accuracy of these data or the results to be obtained from the use thereof.

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