Material Safety Data Sheet
MSDS Number: 7865 - 3

24 Hour Emergency Assistance: CHEMTREC - Domestic: (800) 424-9300
24 Hour Emergency Assistance: CHEMTREC - International: (703) 527-3887
General Assistance Number: (713) 241-4819

SECTION 1 MATERIAL/COMPANY IDENTIFICATION

MATERIAL IDENTITY: SHELLSOL® A100

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

SECTION 2 COMPOSITION

<table>
<thead>
<tr>
<th>COMPONENTS</th>
<th>CAS#</th>
<th>CONCENTRATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solvent Naphtha (Petroleum), Light Aromatic</td>
<td>64742-95-6</td>
<td>100 %weight</td>
</tr>
</tbody>
</table>

Comments:
Solvent naphtha (petroleum), light aromatic is a complex stream of predominately C8 to C10 hydrocarbons; the exact composition and concentrations will vary. Contains naphthalene 0.03 - 0.10 %weight.

SECTION 3 HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Appearance & Odor: Light colored liquid. Aromatic hydrocarbon odor.
Health Hazards: Can cause severe lung damage and may be fatal if swallowed. May be harmful if swallowed. May cause CNS depression.
Physical Hazards: COMBUSTIBLE. Vapors are heavier than air. Vapors may travel across the ground and reach remote ignition sources causing a flashback fire danger.

Health Effects

Inhalation:
Irritating to respiratory system. 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. Prolonged and repeated exposures to high concentrations may cause hearing loss (refer to section 11). Chronic hydrocarbon abuse (for example, sniffing glue or light hydrocarbons such as contained in this material) has been associated with irregular heart rhythms and potential cardiac arrest.

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:
May be harmful if swallowed. 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.

Primary Target Organs:
The following organs and/or organ systems may be damaged by overexposure to this material.
Heart, Auditory System

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, transport to nearest medical facility for additional treatment.

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. DO NOT GIVE LIQUIDS TO A DROWSY, CONVULSING OR UNCONSCIOUS PERSON. If vomiting occurs spontaneously, keep head below hips to prevent aspiration. Transport to nearest medical facility for additional treatment.

Note to Physician:
Light hydrocarbons like this one have been associated with cardiac sensitization in abuse situations. Hypoxia or the injection of adrenaline-like substances enhances these effects. Refer to Section 3.

Flash Point:  111°F / 43.89°C
Autoignition Temperature:  864°F / 462.22°C
Flammability in Air:  1 - 7 %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.

Unusual Fire Hazards:
Vapors are heavier than air. Vapors may travel across the ground and reach remote ignition sources causing a flashback fire danger.

SECTION 6  ACCIDENTAL RELEASE MEASURES

COMBUSTIBLE. Vapors are heavier than air. Vapors may travel across the ground and reach remote ignition sources causing a flashback fire danger.

Protective Measures:
Eliminate potential sources of ignition (no smoking, flares, sparks or flames in immediate area). Stay upwind and keep out of low areas.

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. Use water spray (fog) to reduce vapors or divert vapor cloud drift. 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

Do not taste or swallow. 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. Vapors are heavier than air. Vapors may travel across the ground and reach remote ignition sources causing a flashback fire danger.

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. Static electricity may accumulate and create a fire hazard. Bond and ground handling equipment and transfer containers to prevent sparking.

Storage:
Keep containers closed when not in use.

Ground fixed equipment.

SECTION 8  EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational Exposure Limits

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:

<table>
<thead>
<tr>
<th>Material (o-, m-, p-isomers)</th>
<th>Source</th>
<th>TWA</th>
<th>STEL</th>
<th>Ceiling</th>
<th>Notation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cumene</td>
<td>ACGIH - TLV</td>
<td>50 ppm (v)</td>
<td></td>
<td></td>
<td>Skin</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>Xylene (o-, m-, p-isomers)</td>
<td>ACGIH - TLV</td>
<td>100 ppm (v)</td>
<td>150 ppm (v)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Xylene (o-, m-, p-isomers)</td>
<td>OSHA - PEL</td>
<td>100 ppm (v)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Xylene (o-, m-, p-isomers)</td>
<td>OSHA - PEL-Interim Standard</td>
<td>100 ppm (v)</td>
<td>150 ppm (v)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
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:** Light colored liquid. Aromatic hydrocarbon odor.

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Autoignition Temperature</strong></td>
<td>864 °F</td>
</tr>
<tr>
<td><strong>Boiling Point</strong></td>
<td>320 - 349 °F</td>
</tr>
<tr>
<td><strong>Evaporation Rate</strong></td>
<td>0.2 [vs. n-Butyl Acetate = 1]</td>
</tr>
<tr>
<td><strong>Flammability in Air</strong></td>
<td>1 - 7 %volume</td>
</tr>
<tr>
<td><strong>Flash Point</strong></td>
<td>111 °F [Tagliabue Closed Cup]</td>
</tr>
<tr>
<td><strong>Solubility (in Water)</strong></td>
<td>Negligible</td>
</tr>
<tr>
<td><strong>Specific Gravity</strong></td>
<td>0.88 @ 60 °F</td>
</tr>
<tr>
<td><strong>Stability</strong></td>
<td>Stable</td>
</tr>
<tr>
<td><strong>Vapor Density (Air=1)</strong></td>
<td>4.3</td>
</tr>
<tr>
<td><strong>Vapor Pressure</strong></td>
<td>2 mmHg @ 68 °F</td>
</tr>
<tr>
<td><strong>VOC Content</strong></td>
<td>100 %</td>
</tr>
<tr>
<td></td>
<td>7.3 lb/gal @ 60 °F</td>
</tr>
</tbody>
</table>

### SECTION 10 REACTIVITY AND STABILITY

**Stability:**
Material is stable under normal conditions.

**Conditions to Avoid:**
Prevent vapor accumulation. 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), Light Aromatic</td>
<td>Oral - LD50</td>
<td>4.7 g/kg (Rat)</td>
</tr>
</tbody>
</table>
Solvent Naphtha (Petroleum), Light Aromatic | Dermal - No deaths* | 4 ml/kg (Rat)
---|---|---
Solvent Naphtha (Petroleum), Light Aromatic | Inhalation - No deaths* | 3670 ppm (m) (Rat) 8 hour(s)

* No deaths at highest tested dose.

Eye Irritation:
Draize - 3.1/110 [Rabbit] Material Tested - Solvent Naphtha (Petroleum), Light Aromatic

Skin Irritation:
Slight to moderate irritation Material Tested - Solvent Naphtha (Petroleum), Light Aromatic

Repeat Dose Testing:
While there is no evidence that industrially acceptable levels of light hydrocarbon vapors (e.g., the occupational exposure limit) have produced cardiac effects in humans, animal studies have shown that inhalation of high levels produced cardiac sensitization. Such sensitization may cause fatal changes in heart rhythms, which was shown to be enhanced by hypoxia or the injection of adrenaline-like substances.

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.

Reproductive and Developmental Toxicity:
Animal testing with light aromatic solvents demonstrated embryo/fetal effects but not malformations at concentrations producing maternal toxicity.

Neurotoxicity:
Prolonged and repeated exposures to high concentrations of some volatile hydrocarbon solvents have resulted in hearing loss in rats. Solvent abusers and noise interaction with these solvents in the work environment may cause symptoms of hearing loss. Short term repeated inhalation exposure of humans to m-xylene (200 ppm or greater) was reported to produce slight impairment of vestibular and visual function and reaction time. In these studies, there was no evidence of cumulative effects but some evidence of tolerance or adaptation. Repeated inhalation studies with some similar solvents or components in animals have reported decreased activity typical of central nervous system depression, but no irreversible effects.

Other Information:
Animal data suggest that slight anemia, adaptive liver changes, and kidney toxicity (male rat nephropathy) may be caused by repeated over exposure to some similar solvents. The significance of this to humans is unknown.

SECTION 12
ENVIRONMENTAL FATE AND EFFECTS

This section will be updated as ecological reviews are completed.

SECTION 13
DISPOSAL CONSIDERATIONS

Product Disposal:
Under EPA RCRA (40 CFR 261) if this material becomes a waste material, it would be an ignitable hazardous waste, hazardous waste number D001. Refer to the latest EPA or state regulations regarding proper disposal.

http://www.euapps.shell.com/MSDS/RetrieveMsds?whichView=printer
4/11/2002
US Department of Transportation Classification:

Proper Shipping Name: Petroleum Distillates, N.O.S.
Technical Names (s): Petroleum Naphtha
Identification Number: UN1268
Hazard Class/Division: 3 (Flammable Liquid)
Packing Group: III
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:

Proper Shipping Name: Petroleum Distillates, N.O.S.
Technical Name (s): Petroleum Naphtha
Identification Number: UN1268
Hazard Class/Division: 3 (Flammable Liquid)
Packing Group: III

International Maritime Organization - IMDG:

Proper Shipping Name: Petroleum Distillates, N.O.S.
Technical Name (s): Petroleum Naphtha
Identification Number: UN1268
Hazard Class/Division: 3 (Flammable Liquid)
Packing Group: III

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

Resource Conservation & Recovery Act (RCRA) Classification:
D001 (Ignitable Hazardous Waste).

Superfund Amendment & Reauthorization Act (SARA) Title III:
SARA Hazard Categories(311/312):

SARA Toxic Release Inventory(TRI) (313):

Xylene (1330-20-7) 1 - 3 %weight
1,2,4-Trimethylbenzene (95-63-6) 31 - 40 %weight
Cumene (98-82-8) < 2 %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) 31 - 40 %weight
1,3,5-Trimethylbenzene (108-67-8) 10 - 12 %weight
Cumene (98-82-8) < 2 %weight
Xylene (1330-20-7) 1 - 3 %weight

Pennsylvania Right-To-Know Chemical List:

1,2,4-Trimethylbenzene (95-63-6) 31 - 40 %weight  Environmental Hazard
Cumene (98-82-8) < 2 %weight  Environmental Hazard
Xylene (1330-20-7) 1 - 3 %weight  Environmental Hazard

SECTION 16 OTHER INFORMATION

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

Revision#: 3
Revision Date: 08/21/2001
Revisions since last change (discussion): Change made to Section 14.

Product Codes: Q7390

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.

27673-10323-100R-11/15/2001