MATERIAL SAFETY DATA SHEET

SECTION I

NAME

PRODUCT ▶ SHELL SOL RB
RONSONOL LIGHTER FLUID

SECTION II-A

PRODUCT/INGREDIENT

<table>
<thead>
<tr>
<th>NO.</th>
<th>COMPOSITION</th>
<th>CAS NUMBER</th>
<th>PERCENT</th>
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</thead>
<tbody>
<tr>
<td>P</td>
<td>SHELL SOL RB</td>
<td>MIXTURE</td>
<td>100</td>
</tr>
<tr>
<td>1</td>
<td>SOLVENT NAPHTHA (PETROLEUM), LIGHT ALIPHATIC</td>
<td>64742-89-8</td>
<td>95</td>
</tr>
<tr>
<td>2</td>
<td>SOLVENT NAPHTHA (PETROLEUM), MEDIUM ALIPHATIC</td>
<td>64742-88-7</td>
<td>5</td>
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</tbody>
</table>

* A COMPLEX COMBINATION OF C5-C12 HYDROCARBONS; EXACT COMPOSITION WILL VARY.

SECTION II-B

ACUTE TOXICITY DATA

<table>
<thead>
<tr>
<th>NO.</th>
<th>ACUTE ORAL LD50</th>
<th>ACUTE DERMAL LD50</th>
<th>ACUTE INHALATION LC50</th>
</tr>
</thead>
<tbody>
<tr>
<td>P</td>
<td>NOT AVAILABLE</td>
<td>&gt;4 ML/KG (RAT)</td>
<td>3400 PPM/4H (RAT)</td>
</tr>
<tr>
<td>1</td>
<td>&gt;8 ML/KG (RAT)</td>
<td>&gt;2 ML/KG (RABBIT)</td>
<td>&gt;700 PPM/4H (RAT)</td>
</tr>
</tbody>
</table>

* BASED UPON TESTING OF ESSENTIALLY SIMILAR PRODUCTS.

SECTION III

HEALTH INFORMATION


EYE CONTACT
LIQUID IS MILDLY IRRITATING TO THE EYES. HIGH VAPOR CONCENTRATIONS MAY BE IRRITATING.

SKIN CONTACT
LIQUID IS MILDLY IRRITATING TO THE SKIN. PROLONGED OR REPEATED LIQUID CONTACT CAN RESULT IN DEFATTING AND DRYING OF THE SKIN WHICH MAY RESULT IN SKIN IRRITATION AND DERMATITIS.

INHALATION
VAPORS MAY BE IRRITATING TO THE NOSE, THROAT AND RESPIRATORY TRACT. HIGH VAPOR CONCENTRATIONS MAY PRODUCE CNS DEPRESSION.

INGESTION
INGESTION OF PRODUCT MAY RESULT IN VOMITING. ASPIRATION (BREATHING) OF VOMITUS INTO THE LUNGS MUST BE AVOIDED AS EVEN SMALL QUANTITIES MAY RESULT IN ASPIRATION PNEUMONITIS.
SIGN AND SYMPTOMS
Irritation as noted above. Early to moderate CNS (central nervous system) depression may be evidenced by dizziness, headache, dizziness and nausea; in extreme cases, unconsciousness and death may occur. Aspiration pneumonitis may be evidenced by coughing, labored breathing and cyanosis (bluish skin); in severe cases death may occur.

AGGRAVATED MEDICAL CONDITIONS
Preexisting eye, skin, and respiratory disorders may be aggravated by exposure to this product.

SEE SECTION VI FOR SUPPLEMENTAL INFORMATION.

SECTION IV
OCCUPATIONAL EXPOSURE LIMITS

| NO. | PEL/TWA   | PEL/CEILING | TLV/TWA | ACIGIH | TLV/STEL | OTHER
<table>
<thead>
<tr>
<th></th>
<th></th>
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<tbody>
<tr>
<td>P</td>
<td>NOT ESTABLISHED</td>
<td>300 PPM</td>
<td>400 PPM</td>
<td>400 PPM**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I</td>
<td>100 PPM</td>
<td>100 PPM</td>
<td>75 PPM</td>
<td>150 PPM**</td>
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</tbody>
</table>

*RECOMMEND EXPOSURE LIMITS FOR VM&P NAPHTHA AS A GUIDELINE. 2*EXPOSURE LIMITS FOR STODDARD SOLVENT RECOMMENDED AS A GUIDELINE.  **OSHA PEL/STEL

SECTION V
EMERGENCY AND FIRST AID PROCEDURES

EYE CONTACT
Flush eyes with plenty of water for 15 minutes while holding eyelids open. Get medical attention.

SKIN CONTACT
Remove contaminated clothing/shoes. Flush skin with water. Follow by washing with soap and water. If irritation occurs, get medical attention. Do not reuse clothing until cleaned.

INHALATION
Remove victim to fresh air and provide oxygen if breathing is difficult. Give artificial respiration if not breathing. Get medical attention.

INGESTION
Do not induce vomiting. If vomiting occurs spontaneously, keep head below hips to prevent aspiration of liquid into the lungs. Get medical attention.*

NOTE TO PHYSICIAN
*If more than 0.5 mL per kg has been ingested and vomiting has not occurred, emesis should be induced with supervision. Keep victim's head below hips to prevent aspiration. If symptoms such as loss of gag reflex, convulsions or unconsciousness occur before emesis, gastric lavage using a cuffed endotracheal tube should be considered.

SECTION VI
SUPPLEMENTAL HEALTH INFORMATION

Males rates exposed to prolonged and repeated inhalation to high vapor concentrations of solvents similar to components 1 and 2 showed evidence of kidney damage. The relevance of this information to man is unknown. In one study on a solvent similar to component 1, a low grade anemia was also observed.
SECTION VII
PHYSICAL DATA

BOILING POINT: 224-311
(DEG F) SPECIFIC GRAVITY: 0.74 #
(H2O=1) 25/25 DEG C VAPOR PRESSURE: 4" 
(MM HG) 66 DEG. F
MELTING POINT: NOT AVAILABLE VAPOR DENSITY: NOT AVAILABLE
(DEG F) SOLUBILITY: NEGLIGIBLE (AIR=1)
EVAPORATION RATE (N-BUTYL ACETATE = 1): 2.4* ESTIMATED

APPEARANCE AND ODOR:
COLORLESS LIQUID. HYDROCARBON ODOR.

SECTION VIII
FIRE AND EXPLOSION HAZARDS

FLASH POINT AND METHOD: FLAMMABLE LIMITS /% VOLUME IN AIR
EST. 42 DEG F (TCC) LOWER: 1.0 UPPER: 7.0

EXTINGUISHING MEDIA
USE WATER FOG. FOAM. DRY CHEMICAL OR CO2. DO NOT USE A DIRECT STREAM OF WATER. PRODUCT WILL FLOAT AND CAN BE REIGNITED ON SURFACE OF WATER.

SPECIAL FIRE FIGHTING PROCEDURES AND PRECAUTIONS
WARNING: FLAMMABLE. CLEAR FIRE AREA OF UNPROTECTED 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. COOL FIRE EXPOSED CONTAINERS WITH WATER.

UNUSUAL FIRE AND EXPLOSION HAZARDS
CONTAINERS EXPOSED TO INTENSE HEAT FROM FIRES SHOULD BE COOLED WITH WATER TO PREVENT VAPOR PRESSURE BUILDUP WHICH COULD RESULT IN CONTAINER RUPTURE. CONTAINER AREAS EXPOSED TO DIRECT FLAME CONTACT SHOULD BE COOLED WITH LARGE QUANTITIES OF WATER AS NEEDED TO PREVENT WEAKENING OF CONTAINER STRUCTURE.

SECTION IX
REACTIVITY

STABILITY: STABLE
HAZARDOUS POLYMERIZATION: WILL NOT OCCUR

CONDITIONS AND MATERIALS TO AVOID:
AVOID HEAT. SPARKS. FLAME AND CONTACT WITH STRONG OXIDIZING AGENTS.

HAZARDOUS DECOMPOSITION PRODUCTS
CARBON MONOXIDE AND UNIDENTIFIED ORGANIC COMPOUNDS MAY BE FORMED DURING COMBUSTION.

SECTION X
EMPLOYEE PROTECTION

RESPIRATORY PROTECTION
AVOID PROLONGED OR REPEATED BREATHING OF VAPORS. IF EXPOSURE MAY OR DOES EXCEED OCCUPATIONAL EXPOSURE LIMITS (SEC. IV) USE A NIOSH-APPROVED RESPIRATOR TO PREVENT OVEREXPOSURE. IN ACCORD WITH 29 CFR 1910.134 USE EITHER AN ATMOSPHERE-SUPPLYING RESPIRATOR OR AN AIR-PURIFYING RESPIRATOR FOR ORGANIC VAPORS.

OSHA HAS ESTABLISHED TRANSITIONAL OCCUPATIONAL EXPOSURE LIMITS FOR THIS PRODUCT AND/OR COMPONENTS OF THIS PRODUCT. REFER TO 29 CFR 1910.1000 FOR THESE TRANSITIONAL LIMITS AND REQUIREMENTS FOR MEETING THESE LIMITS.

PROTECTIVE CLOTHING
AVOID CONTACT WITH EYES. WEAR SAFETY GLASSES OR GOGGLES AS APPROPRIATE. AVOID PROLONGED OR REPEATED CONTACT WITH SKIN. WEAR CHEMICAL-RESISTANT GLOVES AND OTHER CLOTHING AS REQUIRED TO MINIMIZE CONTACT.
ADDITIONAL PROTECTIVE MEASURES
USE EXPLOSION-PROOF VENTILATION AS REQUIRED TO CONTROL VAPOR CONCENTRATIONS. AIR-DRY CONTAMINATED CLOTHING IN A WELL VENTILATED AREA, THEN LAUNDER BEFORE REUSING.

SECTION XI  ENVIRONMENTAL PROTECTION

SPILL OR LEAK PROCEDURES
WARNING: FLAMMABLE. ELIMINATE ALL IGNITION SOURCES. HANDLING EQUIPMENT MUST BE GROUNDED TO PREVENT SPARKING. *** LARGE SPILLS *** EVACUATE THE HAZARD AREA OF UNPROTECTED PERSONNEL. WEAR APPROPRIATE RESPIRATOR AND PROTECTIVE CLOTHING. SHUT OFF SOURCE OF LEAK ONLY IF SAFE TO DO SO. DIKE AND CONTAIN. IF VAPOR CLOUD FORMS, WATER FOG MAY BE USED TO SUPPRESS; CONTAIN RUN-OFF. REMOVE WITH VACUUM TRUCKS OR PUMP TO STORAGE/SALVAGE VESSELS. SOAK UP RESIDUE WITH AN ABSORBENT SUCH AS CLAY, SAND OR OTHER SUITABLE MATERIAL; PLACE IN NON-LEAKING CONTAINERS FOR PROPER DISPOSAL. FLUSH AREA WITH WATER TO REMOVE TRACES RESIDUE; DISPOSE OF FLUSH SOLUTIONS AS ABOVE. *** SMALL SPILLS *** TAKE UP WITH AN ABSORBENT MATERIAL AND PLACE IN NON-LEAKING CONTAINERS; SEAL TIGHTLY FOR PROPER DISPOSAL.

SECTION XII  SPECIAL PRECAUTIONS

KEEP LIQUID AND VAPOR AWAY FROM HEAT, SPARKS AND FLAME. SURFACES THAT ARE SUFFICIENTLY HOT MAY IGNITE EVEN LIQUID PRODUCT IN THE ABSENCE OF SPARKS OR FLAME. EXTINGUISH PILOT LIGHTS, CIGARETTES AND TURN OFF OTHER SOURCES OFignition PRIOR TO USE AND UNTIL ALL VAPORS ARE GONE. VAPORS MAY ACCUMULATE AND TRAVEL TO IGNITION SOURCES DISTANT FROM THE HANDLING SITE; FLASH-FIRE CAN RESULT. KEEP CONTAINERS CLOSED WHEN NOT IN USE. USE WITH ADEQUATE VENTILATION.

CONTAINERS, EVEN THOSE THAT HAVE BEENemptied, CAN CONTAIN EXPLOSIVE VAPORS. DO NOT CUT, DRILL, GRIND, WELD OR PERFORM SIMILAR OPERATIONS ON OR NEAR CONTAINERS. DO NOT PRESSURIZE DRUM CONTAINERS TO EMPTY THEM.

STATIC ELECTRICITY MAY ACCUMULATE AND CREATE A FIRE HAZARD. GROUND FIXED EQUIPMENT. BOND AND GROUND TRANSFER CONTAINERS AND EQUIPMENT.

SECTION XIII  TRANSPORTATION REQUIREMENTS

DEPARTMENT OF TRANSPORTATION CLASSIFICATION:
FLAMMABLE LIQUID

D.O.T. PROPER SHIPPING NAME:
PETROLEUM NAPHTHA

OTHER REQUIREMENTS:
UN 1255E. GUIDE SHEET 27.

SECTION XIV  OTHER REGULATORY CONTROLS

THE COMPONENTS OF THIS PRODUCT ARE LISTED ON THE EPA/TSCA INVENTORY OF CHEMICAL SUBSTANCES IN ACCORDANCE WITH SARA TITLE III, SECTION 312. THE ENVIRONMENTAL DATA SHEET (EDS) SHOULD ALWAYS BE COPIED AND SENT WITH THE MSDS.

SECTION XV  STATE REGULATORY INFORMATION

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.
PRODUCT NAME: SHELL SOL RB

STATE LISTED COMPONENT | PERCENT | STATE CODE
------------------------|---------|------------
BENZENE (CAS NO: 71-43-2) | <30 PPM | MA, CA65

CA = CALIFORNIA HAZ. SUBST. LIST; CA65 = CALIFORNIA SAFE DRINKING WATER AND TOXICS ENFORCEMENT ACT LIST; FL = FLORIDA SUBST. LIST; IL = ILLINOIS TOX. SUBST. LIST; MA = MASSACHUSETTS SUBST. LIST; ME = MAINE HAZ. SUBST. LIST; MN = MINNESOTA HAZ. SUBST. LIST; NJ = NEW JERSEY HAZ. SUBST. LIST; PA = PENNSYLVANIA HAZ. SUBST. LIST; RI = RHODE ISLAND HAZ. SUBST. LIST.

THIS PRODUCT CONTAINS A CHEMICAL OR CHEMICALS KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER AND/OR REPRODUCTIVE TOXICITY.

SECTION XVI

SPECIAL NOTES

SEE ENVIRONMENTAL DATA SHEET FOR WASTE DISPOSAL AND OTHER ENVIRONMENTAL INFORMATION. CHANGES FROM PREVIOUS REVISION: DOT PROPER SHIPPING NAME IN SECTION XIII CHANGED.

THE INFORMATION CONTAINED HEREIN IS BASED ON THE DATA AVAILABLE TO US AND IS BELIEVED TO BE CORRECT. HOWEVER, SHELL MAKES NO WARRANTY, EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THESE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF. SHELL ASSUMES NO RESPONSIBILITY FOR INJURY FROM THE USE OF THE PRODUCT DESCRIBED HEREIN.

DATE PREPARED: JUNE 21, 1991

BE SAFE
READ OUR PRODUCT SAFETY INFORMATION AND PASS IT ON (PRODUCT LIABILITY LAW REQUIRES IT)

G. A. VAN GELDER
SHELL OIL COMPANY
PRODUCT SAFETY AND COMPLIANCE
P. O. BOX 4320
HOUSTON, TX 77210