SOLTROL® 220

November 30, 1998

PHONE NUMBERS

PHILLIPS CHEMICAL COMPANY
Emergency:           (918) 661-8118
A Division of Phillips Petroleum Company
Technical Services:  (918) 661-9091
Bartlesville, Oklahoma  74004
For Additional MSDSs: (918) 661-7297

A.  Product Identification

    Synonyms: Not Established
    Chemical Name: C13-C17 Isoalkanes
    Chemical Family: Aliphatic hydrocarbon
    Chemical Formula: Mixture
    CAS Reg. No.: 68551-20-2
    Product No.: AP2000

Canadian Inventory Listing Status:  DSL

All ingredients are listed in the Domestic Substances List (DSL) Impurities are exempt in accordance with Section 3 of the Canadian of Environmental Protection Act (CEPA).

B.  Hazardous Components

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>CAS Number</th>
<th>% By Wt.</th>
<th>OSHA PEL</th>
<th>ACGIH TLV</th>
</tr>
</thead>
<tbody>
<tr>
<td>C13-C17 Isoalkanes</td>
<td>68551-20-2</td>
<td>100</td>
<td>NE</td>
<td>NE</td>
</tr>
</tbody>
</table>

See Section F, Recommended Exposure Limits.

C.  Personal Protection Information

    Ventilation: Use adequate ventilation to control concentration below recommended exposure limits.

    Respiratory Protection: Not generally required. For concentrations exceeding the recommended exposure limit, use NIOSH approved air purifying respirator.

    Eye Protection: Use safety glasses with side shields. For splash protection, use chemical goggles and face shield.

    Skin Protection: Avoid unnecessary skin contamination with material.
Use gloves resistant to the material being used.  
(eg. neoprene or Viton).

NOTE: Personal protection information shown in Section C is based upon 
general information as to normal uses and conditions.  Where 
special or unusual uses or conditions exist, it is suggested that 
the expert assistance of an industrial hygienist or other qualified 
professional be sought.

D. Handling and Storage Precautions

Avoid contact with eyes, skin or clothing.  Avoid breathing vapors, 
mist, fume or dust.  Do not swallow, may be aspirated into lungs.  Wear 
protective equipment and/or garments described in Section C if exposure 
conditions warrant.  Wash thoroughly after handling.  Launder 
contaminated clothing before reuse.  Use with adequate ventilation.

Keep away from heat, sparks and flame.  Store in well-ventilated area.  
Store in tightly closed container.  Bond and ground during transfer.

E. Reactivity Data

Stability: Stable
Conditions to Avoid: Not Applicable
Incompatibility (Materials to Avoid): Oxygen and strong oxidizing agents

Hazardous Polymerization: Will Not Occur
Conditions to Avoid: Not Applicable
Hazardous Decomposition Products: Carbon oxides formed when burned.

F. Health Hazard Data

Recommended Exposure Limits:

The Company recommended exposure is 400 ppm.

Acute Effects of Overexposure:

Eye: May be mildly irritating.

Skin: May be mildly irritating.

Inhalation: May cause headache, dizziness, nausea, unconsciousness.

Ingestion: May irritate the stomach and intestines.  If swallowed, may be 
aspirated resulting in inflammation and possible fluid 
accumulation in the lungs.

Subchronic and Chronic Effects of Overexposure:

Some isoparaffins have produced kidney damage in male rats only.  No 
comparable kidney disease is known to occur in humans.

Other Health Effects:
Health Hazard Categories:

CLASS D: POISONOUS AND INFECTIOUS MATERIAL CATEGORIES

1. Materials Causing Immediate and Serious Toxic Effects
   A. Very Toxic
   B. Toxic

2. Materials Causing Other Toxic Effects
   A. Very Toxic
      1. Chronic Toxic Effects
      2. Teratogen/Embryo Toxin
      3. Carcinogen
      4. Reproductive Toxin
      5. Respiratory Tract Sensitizer
      6. Mutagen
   B. Toxic
      1. Chronic Toxic Effects
      2. Skin or Eye Irritant
      3. Skin Sensitizer
      4. Mutagen

Specify: Does not meet the criteria for hazard classification specified by the Hazardous Products Act Controlled Products Regulations.

Other: Lung-Aspiration Hazard

First Aid and Emergency Procedures:

Eye: Flush eyes with running water for at least fifteen minutes. If irritation or adverse symptoms develop, seek medical attention.

Skin: Wash skin with soap and water for at least fifteen minutes. If irritation or adverse symptoms develop, seek medical attention.

Inhalation: Remove from exposure. If breathing is difficult, give oxygen. If breathing ceases, administer artificial respiration followed by oxygen. Seek immediate medical attention.

Ingestion: Do not induce vomiting. Seek immediate medical attention.

Note to Physician: Gastric lavage using a cuffed endotracheal tube may be performed at your discretion.

G. Physical Data

Appearance: Colorless liquid
Odor: Mild
Boiling Point: 451-536°F (233-280°C)
Vapor Pressure: 0.01 psia @ 100°F (38°C)
Vapor Density (Air = 1): > 1  
Solubility in Water: Negligible  
Specific Gravity (H2O = 1): 0.803 @ 60/60F (15.6/15.6C)  
Percent Volatile by Volume: 100  
Evaporation Rate (Butyl Acetate = 1): < 1  
Viscosity: 4.5 cSt @ 100F (38C)

H. Fire and Explosion Data

Flash Point (Method Used): > 210F (> 99C) (PMCC, ASTM D93)  
Flammable Limits (% by Volume in Air): LEL - Not Established  
UEL - Not Established  
Fire Extinguishing Media: Dry chemical, foam or carbon dioxide (CO2)  
Special Fire Fighting Procedures: Evacuate area of all unnecessary personnel. Use NIOSH approved self-contained breathing apparatus and other protective equipment and/or garments described in Section C if exposure conditions warrant. Shut off source if possible. Water fog or spray may be used to cool exposed containers and equipment. Do not spray water directly on fire product which will float and could be reignited on surface of water.  
Fire and Explosion Hazards: Carbon oxides formed when burned. Highly flammable vapors which are heavier than air may accumulate in low areas and/or spread along ground away from handling site. Flash back along vapor trail is possible.

I. Spill, Leak and Disposal Procedures

Precautions Required if Material is Released or Spilled:  
Evacuate area of all unnecessary personnel. Wear protective equipment and/or garments described in Section C if exposure conditions warrant. Shut off source, if possible and contain spill. Protect from ignition. Keep out of water sources and sewers. Absorb in a dry, inert material (sand, clay, etc). Transfer to disposal drums using non-sparking equipment.  
Waste Disposal (Insure Conformity with all Applicable Disposal Regulations): Incinerate or place in permitted waste management facility.

J. DOT Transportation

Shipping Name: Not Applicable  
Hazard Class: Not Applicable  
ID Number: Not Applicable  
Packing Group: Not Applicable  
Marking: Not Applicable
K. **RCRA Classification - Unadulterated Product**

Prior to disposal, consult your Environmental contact to determine if TCLP (Toxicity Characteristic Leaching Procedure, EPA Test Method 1311) is required. Reference 40 CFR Part 261.

L. **Protection Required for Work on Contaminated Equipment**

Contact immediate supervisor for specific instructions before work is initiated. Wear protective equipment and/or garments described in Section C if exposure conditions warrant.

M. **Hazard Classification**

Does not meet the criteria for hazard classification specified by the Hazardous Products Act Controlled Products Regulations.

N. **Additional Comments**

SARA 313

As of the preparation date, this product did not contain a chemical or chemicals subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

NFPA 704 Hazard Codes - - - - - - - - Signals

<table>
<thead>
<tr>
<th>Health</th>
<th>0</th>
<th>Least - 0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flammability</td>
<td>1</td>
<td>Slight - 1</td>
</tr>
<tr>
<td>Reactivity</td>
<td>0</td>
<td>Moderate - 2</td>
</tr>
<tr>
<td>Special Haz.:</td>
<td>-</td>
<td>High - 3</td>
</tr>
</tbody>
</table>

REFERENCES

ACGIH American Conference of Government Industrial Hygienists
ASTM American Society of Testing and Materials
DOT Department of Transportation, U.S.
EPA Environmental Protection Agency, U.S.
IARC International Agency for Research on Cancer
MSHA Mine Safety and Health Administration, U.S.
NFPA National Fire Protection Association
NIOSH National Institute of Occupational Safety and Health, U.S.
NTP National Toxicology Program, U.S.
OSHA Occupational Safety and Health Administration, U.S.
RCRA Resource Conservation and Recovery Act, U.S.
SARA Superfund Amendments and Reauthorization Act, U.S.
TSCA    Toxic Substances Control Act, U.S.