1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT: Kelthane* 50 WSP Miticide

COMPANY IDENTIFICATION:
Dow AgroSciences
9330 Zionsville Road
Indianapolis, IN  46268

EMERGENCY TELEPHONE NUMBER:
800-992-5994

2. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>No.</th>
<th>Ingredient</th>
<th>CAS REG NO</th>
<th>WEIGHT (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Dicofol</td>
<td>115-32-2</td>
<td>50-52</td>
</tr>
<tr>
<td>2</td>
<td>Silica Gel</td>
<td>63231-67-4</td>
<td>48-50</td>
</tr>
<tr>
<td>3</td>
<td>Sodium lignosulfonate</td>
<td>8061-51-6</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Related reaction products</td>
<td>None</td>
<td></td>
</tr>
</tbody>
</table>

NOTE: The "I", or "Bar", in the WEIGHT (%) column is used to denote two or more components whose weight percents sum to the total shown by the figure either to the right of or immediately above the "Bar".

See Section 8, Exposure Controls / Personal Protection

3. HAZARDS IDENTIFICATION

Primary Routes of Exposure

- Inhalation
- Eye Contact
- Skin Contact
- Dermal Absorption

Overexposure by any route to chlorinated insecticides may cause nervousness and hyperactivity, headache, nausea, vomiting, unusual sensations and fatigue. Convulsions and coma may follow.

Inhalation

Inhalation of dust can cause the following: irritation of nose, throat, and lungs

Eye Contact

Direct contact with material can cause the following: moderate irritation

Skin Contact

Material can cause the following: slight skin irritation and skin sensitization in susceptible individuals. Dicofol may be absorbed through the skin from solvent formulations.
Delayed Effects

Repeated overexposure to the active ingredient in this material can cause the following: kidney damage, liver, damage, and heart damage

4. FIRST AID MEASURES

Inhalation

Move subject to fresh air.

Eye Contact

Flush eyes with water. Consult a physician if irritation persists.

Skin Contact

Wash affected skin areas thoroughly with soap and water. Consult a physician if irritation persists.

Ingestion

If swallowed, give 2 glasses of water to drink. Consult a physician. Never give anything by mouth to an unconscious person.

Note to Physician

Moderately toxic chlorinated hydrocarbon present. Evacuation of the stomach is advisable followed by activated charcoal. Diazepam may be used, if necessary, for the treatment of convulsions. Do not administer sympathomimetic amines (e.g. epinephrine) because chlorinated hydrocarbons may sensitize the heart to catecholamines. Monitor for liver and adrenal dysfunction, and myocardial irritability, the latter independent of administered adrenergic amines.

5. FIRE FIGHTING MEASURES

Flash Point ............................................................. Not Applicable
Auto-ignition Temperature ....................................... >200°C/>392°F
Lower Explosive Limit ............................................. 2 oz/ft3 2002 g/m³
Upper Explosive Limit .............................................. Not Applicable

Unusual Hazards

Pesticide particulates can become airborne.
Combustion generates toxic fumes of the following: hydrogen chloride and chlorine gas
Dusts at sufficient concentrations can form explosive mixtures with air.

Extinguishing Agents

Use the following extinguishing media when fighting fires involving this material: carbon dioxide, dry chemical, and water spray
Personal Protective Equipment

Wear self-contained breathing apparatus (pressure-demand NIOSH approved or equivalent) and full protective gear.

Special Procedures

Contain run-off. Remain upwind. Avoid breathing smoke. Use water spray to cool containers exposed to fire. DO NOT use a solid stream of water. A solid stream of water directed at this material may create a potentially explosive airborne dust mixture.

6. ACCIDENTAL RELEASE MEASURES

Personal Protection

Appropriate protective equipment must be worn when handling a spill of this material. See SECTION 8, Exposure Controls/Personal Protection, for recommendations. If exposed to material during clean-up operations, see SECTION 4, First Aid Measures, for actions to follow. Remove all contaminated clothing promptly. Wash all exposed skin areas with soap and water immediately after exposure. Thoroughly launder clothing before reuse. Do not take clothing home to be laundered.

Procedures

Transfer spilled material to suitable containers for recovery or disposal. Keep dust to a minimum. Avoid use of water; product is highly toxic to aquatic life. Avoid breathing dust. WARNING: KEEP SPILLS AND CLEANING RUNOFFS OUT OF MUNICIPAL SEWERS AND OPEN BODIES OF WATER.

7. HANDLING AND STORAGE

Storage Conditions

Do not store this material near food, feed or drinking water. The maximum recommended storage temperature for this material is 65C/150F.

Do not store this material in containers made of the following: mild steel

Handling Procedures

Do not handle material near food, feed or drinking water.

Avoid high concentrations of dust in air and accumulation of dust on equipment. An airborne dust of this material can create a dust explosion. When handling and processing this material local exhaust ventilation may be required to control dust and reduce exposure to vapors. To prevent dust explosions employ bonding and grounding for operations capable of generating static electricity. Protect all equipment from explosions by following the guidelines in NFPA-68 and NFPA-69. For electrical equipment follow local codes and electrical classification NFPA-70 (the National Electrical Code), class II, division 2, group G.
Other

Completely empty bag into application equipment. Dispose empty bag in a sanitary landfill or by incineration as allowed by state and local authorities. Avoid inhalation of smoke if incinerated.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Limit Information

<table>
<thead>
<tr>
<th>No.</th>
<th>Comp.</th>
<th>Dow AgroSciences</th>
<th>OSHA</th>
<th>ACGIH</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Units</td>
<td>TWA</td>
<td>STEL</td>
<td>TWA</td>
</tr>
<tr>
<td>1</td>
<td>Dicofol</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>2</td>
<td>Silica Gel</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>3</td>
<td>Sodium lignosulfonate</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>4</td>
<td>Related reaction products</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
</tbody>
</table>

End users must follow label instructions when using this product.

Respiratory Protection

A respiratory protection program meeting OSHA 1910.134 and ANSI Z88.2 requirements or equivalent must be followed whenever workplace conditions warrant a respirator's use. None required if airborne concentrations are maintained below the exposure limit listed in 'Exposure Limit Information'.

**Up to 10 times the exposure limit:** Wear a properly fitted NIOSH approved (or equivalent) half-mask, air-purifying respirator.

**Up to 50 times the exposure limit:** Wear a properly fitted NIOSH approved (or equivalent) full-face piece, air-purifying respirator, OR full-face piece, airline respirator in the pressure demand mode.

**Above 50 times the exposure limit or Unknown:** Wear a properly fitted NIOSH approved (or equivalent) self-contained breathing apparatus in the pressure demand mode, OR full-face piece, airline respirator in the pressure demand mode with emergency escape provision.

Air-purifying respirators should be equipped with NIOSH approved (or equivalent) organic vapor cartridges and N100 filters. If oil mist is present, use R100 or P100 filters.
Eye Protection

Use chemical splash goggles (ANSI Z87.1 or approved equivalent). Eye protection worn must be compatible with respiratory protection system employed.

Hand Protection

Chemical-resistant gloves should be worn whenever this material is handled. The glove(s) listed below may provide protection against permeation: Polyvinyl chloride-coated glove or other chemical-resistant rubber-coated glove. Gloves should be removed and replaced immediately if there is any indication of degradation or chemical breakthrough. Rinse and remove gloves immediately after use. Wash hands with soap and water.

Other Protection

Use chemically resistant apron or other impervious clothing to avoid prolonged or repeated skin contact.

Engineering Controls (Ventilation)

Use local exhaust ventilation with a minimum capture velocity of 150 ft/min. (0.75 m/sec.) at the point of dust or mist evolution. Refer to the current edition of Industrial Ventilation: A Manual of Recommended Practice published by the American Conference of Governmental Industrial Hygienists for information on the design, installation, use, and maintenance of exhaust systems.

Other Protective Equipment

Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
<td>Off-white</td>
</tr>
<tr>
<td>State</td>
<td>Powder</td>
</tr>
<tr>
<td>Odor Characteristic</td>
<td>Sweet odor</td>
</tr>
<tr>
<td>pH</td>
<td>7.6 Aqueous slurry</td>
</tr>
<tr>
<td>Viscosity</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Specific Gravity (Water = 1)</td>
<td>0.26 g./cc. Bulk Density</td>
</tr>
<tr>
<td>Vapor Density (Air = 1)</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Melting Point</td>
<td>No Data</td>
</tr>
<tr>
<td>Boiling Point</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Solubility in Water</td>
<td>Dispersible</td>
</tr>
<tr>
<td>Percent Volatility</td>
<td>0%</td>
</tr>
<tr>
<td>Evaporation Rate (BAc = 1)</td>
<td>Not Applicable</td>
</tr>
</tbody>
</table>

The physical and chemical data given in Section 9 are typical values for this product and are not intended to be product specifications.

See Section 5, Fire Fighting Measures
10. STABILITY AND REACTIVITY

Instability

This material is considered stable. However, avoid temperatures above 100°C/212°F to prevent thermal degradation.

Hazardous Decomposition Products

There are no known hazardous decomposition products for this material.

Hazardous Polymerization

Product will not undergo polymerization.

Incompatibility

Avoid contact with the following: acids
Contact with the following will catalyze product deterioration: iron and mild steel

11. TOXICOLOGICAL INFORMATION

Acute Data

<table>
<thead>
<tr>
<th>Route</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral LD50</td>
<td>rat: 3060 mg/kg</td>
</tr>
<tr>
<td>Dermal LD50</td>
<td>rat: &gt;5000 mg/kg</td>
</tr>
<tr>
<td>Inhalation LC50</td>
<td>&gt;4.5 mg/L for 4 hr</td>
</tr>
<tr>
<td>Eye Irritation</td>
<td>rabbit: moderate irritation</td>
</tr>
<tr>
<td>Skin Irritation</td>
<td>rabbit: slight irritation</td>
</tr>
</tbody>
</table>

Subchronic/Chronic Data

The following data pertains to studies conducted with the technical material, 95-97% active ingredient:
Primary effects are liver growth and enzyme induction in rats, mice, and dogs, and adrenal effects (reduced serum cortisol response) in dogs. Kidneys, heart, testes, ovaries, and urinary bladder have been affected at higher doses. The overall NOEL is 5 ppm (0.22 mg/kg/day).
Liver growth, enzyme induction and other changes in the liver, adrenals and urinary bladder were observed at 50 ppm and above in the rat two-year dietary study. There was no evidence of neoplastic changes. The overall NOEL was 5 ppm (0.22-0.27 mg/kg/day) in rats.
Effects on the liver, kidney, and adrenals, and reduced body weights were observed at 125 ppm and above in the mouse three-month dietary study. The overall NOEL was 10 ppm in mice.
Reduced adrenal serum cortisol response and liver effects were observed at 180 ppm in the dog one-year dietary study. The overall NOEL was 30 ppm in dogs.
Carcinogenicity Data

The following data pertains to studies conducted with the technical material, 95-97% active ingredient:
No evidence of carcinogenicity was observed in long-term studies with rats.
A two-year oncogenicity study in mice indicated an increased incidence of hepatocellular adenomas only in
male mice at a dietary concentration level of 264 and 528 ppm.

Mutagenicity Data

The following data pertains to studies conducted with the technical material, 95-97% active ingredient:
Ames mutagenicity: Negative
In vitro rat hepatocyte Unscheduled DNA Synthesis: Negative
Mammalian cell gene-mutation assay in Chinese hamster ovary cells (CHO): Negative
In vivo cytogenetic assay (rat): Negative
In vitro cytogenetic assay (Chinese hamster ovary cells): Negative

Reproductive/Teratology Data

The following data pertains to studies conducted with the technical material, 95-97% active ingredient:
A rat developmental toxicity study indicated a maternal toxicity level of 2.5 mg/kg/day and above; there was
no evidence of a reproductive or developmental effect. The overall NOEL was 0.25 mg/kg/day in rats.
A rabbit developmental toxicity study indicated a maternal toxicity level of 4 mg/kg/day and above, and
abortions were increased at 40 mg/kg/day; there was no evidence of a developmental effect. The overall
NOEL was 0.4 mg/kg/day in rabbits.
A two-generation rat reproduction study indicated reproductive effects (reduced neonatal survival and growth)
at 125 and 250 ppm, and systemic toxicity (effects on liver, adrenals, and ovaries and reduced weight gain) at
25 ppm and above. The reproductive NOEL was 25 ppm; the overall NOEL was 5 ppm in rats.

Sensitization Data

Sensitization data for a compositionally similar material are listed below.

Skin sensitization - guinea pig: Allergic response observed.

Other Toxicity Data

Signs of acute intoxication are generally similar to those for DDT and other chlorinated insecticides.

The following data pertain to studies conducted with the technical material, 95-97% active ingredient:
Acceptable Daily Intake (ADI): 0.0025 mg/kg/day
12. ECOLOGICAL INFORMATION

Environmental Toxicity

- Ring-necked pheasant, 8 Day Dietary LC50: 2126 ppm
- Japanese quail, 8 Day Dietary LC50: 1418 ppm
- Mallard duck, 8 Day Dietary LC50: 1651 ppm
- Bobwhite quail, 8 Day Dietary LC50: 3010 ppm
- Algae (Scenedesmus subspicatus), 96 Hour EC50: 75 µg/l
- Oyster shell (Crassostrea virginica), 96 Hour Deposition EC50: 15 µg/l
- Fiddler crab, 96hr LC50, >water solubility,
- Mysis shrimp (Mysisopsis bahia), 96 Hour LC50: 0.06 mg/l
- Sheepshead minnow (Cyprinodon variegatus), 96 Hour LC50: 0.37 mg/l
- Rainbow trout (Salmo gairdneri), 96 Hour LC50: 0.12 mg/l
- Daphnia magna, 48 Hour EC50: 0.14 mg/l

This material is highly toxic to very highly toxic to fish, aquatic invertebrates, and algae; the overall aquatic NOEL is 0.044 mg/l. Eggshell thinning and reduced offspring survival were noted in the Mallard duck, American kestrel, Ring dove and Screech owl. The NOAEL is 3 ppm. The above Environmental Toxicity data are from studies conducted on the technical material, 95-97% active ingredient.

13. DISPOSAL CONSIDERATIONS

Procedure

For disposal, incinerate this material at a facility that complies with local, state, and federal regulations.

14. TRANSPORT INFORMATION

US DOT Hazard Class ................................................. (CLASS) 9 (MISCELLANEOUS)

15. REGULATORY INFORMATION

Workplace Classification

This product is considered hazardous under the OSHA Hazard Communication Standard (29CFR 1910.1200).

This product is subject to regulation under the Canadian Pest Control Products Act (P.C.P. Act). Therefore, this product is excluded from the supplier labeling and material safety data sheet requirements as specified in Section 12 of the Hazardous Products Act.

SARA TITLE 3: Section 311/312 Categorizations (40CFR 370)

This product is a hazardous chemical under 29CFR 1910.1200, and is categorized as a delayed health hazard.
SARA TITLE 3: Section 313 Information (40CFR 372)

This product contains a chemical, which is listed in Section 313 at or above de minimis concentrations. The following listed chemicals are present: (Quantity present is found elsewhere on this MSDS.)
- Dicofol (115-32-2)

CERCLA Information (40CFR 302.4)

This material is regulated under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and the Superfund Amendments and Reauthorization Act (SARA) Title III Section 304. This material is or contains chemical(s) listed in 40 CFR Table 302.4 or non-designated RCRA ICR substance(s). (Non-designated ICR substances apply to materials that will not be reused.) The Reportable Quantity(s) (RQ) are listed below. Releases in excess of its reportable quantity must be reported to the National Response Center (1-800-424-8802) and to the appropriate state and local emergency response organizations.
Dicofol (115-32-2) 10lbs.

Waste Classification

When a decision is made to discard this material as supplied, it does not meet RCRA’s characteristic definition of ignitability, corrosivity, or reactivity, and is not listed in 40 CFR 261.33. The toxicity characteristic (TC), however, has not been evaluated by the Toxicity Characteristic Leaching Procedure (TCLP).

United States

This product is subject to regulation under the US Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) and is therefore exempt from U.S. Toxic Substances Control Act (TSCA) Inventory listing requirements.

16. OTHER INFORMATION

MSDS STATUS: New
Document Code: D03-849-001