

# MATERIAL SAFETY DATA SHEET



Emergency Phone: 800-992-5994  
Dow AgroSciences LLC  
Indianapolis, IN 46268

Date: 6/1/01  
Product Code:

## MACH\* 2 LIQUID TURF INSECTICIDE

### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Mach\* 2 Liquid Turf Insecticide

**COMPANY IDENTIFICATION:**

Dow AgroSciences  
9330 Zionsville Road  
Indianapolis, IN 46268

**EMERGENCY TELEPHONE NUMBER:**

800-992-5994

### 2. COMPOSITION/INFORMATION ON INGREDIENTS

<u>No</u>		<u>CAS REG NO</u>	<u>WEIGHT (%)</u>
1	RH-0345 A.I. ....	112226-61-6	21-24
2	Propylene glycol ....	57-55-6	76-79
3	Sodium lignosulfonate ....	8061-51-6	
4	Related reaction products ....	None	
5	Water ....	7732-18-5	

See Section 8, Exposure Controls / Personal Protection

### 3. HAZARDS IDENTIFICATION

Primary Routes of Exposure

- Inhalation
- Skin Contact
- Eye Contact
- Dermal Absorption

Inhalation

Inhalation of vapor or mist is possibly harmful.

Eye Contact

Direct contact with material can cause the following: possible irritation

Skin Contact

Prolonged or repeated skin contact can cause the following: possible skin irritation  
The active ingredient can be absorbed through intact skin.

Ingestion

Material can cause the following: neurotoxic effects

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Delayed Effects

Repeated overexposure to the active ingredient in this material can cause the following: blood changes, liver damage

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**4. FIRST AID MEASURES**

Inhalation

Move subject to fresh air.

Eye Contact

Flush eyes with a large amount of water for at least 15 minutes. Consult a physician if irritation persists.

Skin Contact

Wash affected skin areas thoroughly with soap and water. Consult a physician if irritation persists. Remove and wash contaminated clothing thoroughly. Do not take clothing home to be laundered.

Ingestion

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

Note to Physician

If swallowed, careful evacuation of the stomach is advisable.

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**5. FIRE FIGHTING MEASURES**

Flash Point .....	>100°C/>212°F TCC (Propylene glycol)
Auto-ignition Temperature .....	No Data
Lower Explosive Limit .....	Not Applicable
Upper Explosive Limit .....	Not Applicable

Unusual Hazards

Pesticide particulates can become airborne.  
Combustion generates toxic fumes of the following: hydrogen chloride, nitrogen oxides

Extinguishing Agents

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

Personal Protective Equipment

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

Special Procedures

Remain upwind. Avoid breathing smoke. Use water spray to cool containers exposed to fire. Contain run-off.

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## **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

Contain spills immediately with inert materials (e.g. sand, earth). Transfer liquids and solid diking material to separate suitable containers for recovery or disposal.

CAUTION: Keep spills and cleaning runoff out of municipal sewers and open bodies of water.

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## **7. HANDLING AND STORAGE**

### Storage Conditions

Do not store this material near food, feed or drinking water. The minimum recommended storage temperature for this material is 0C/32F. The maximum recommended storage temperature for this material is 43C/110F.

### Handling Procedures

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

### Other

Triple rinse (or equivalent) and puncture empty container. Dispose empty container in a sanitary landfill or by incineration as allowed by state and local authorities. Avoid inhalation of smoke if incinerated.

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

### Exposure Limit Information

<u>No</u>		<u>CAS REG NO</u>	<u>WEIGHT (%)</u>
1	RH-0345 A.I. ....	112226-61-6	21-24
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4	Related reaction products ....	None	
5	Water ....	7732-18-5	

<u>Comp. No.</u>	<u>Units</u>	<u>Dow AgroSciences</u>		<u>OSHA</u>		<u>ACGIH</u>	
		<u>TWA</u>	<u>STEL</u>	<u>TWA</u>	<u>STEL</u>	<u>TWA</u>	<u>STEL</u>
1	mg/m3	1.3 Skin	3.9 Skin	None	None	None	None
2	ppm	175	None	None	None	None	None
3		None	None	None	None	None	None
4		None	None	None	None	None	None
5		None	None	None	None	None	None

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Respiratory Protection

A respiratory protection program meeting OSHA 1910.134 and ANSI Z88.2 requirements 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 1000 ppm organic vapor:** Wear a MSHA/NIOSH approved (or equivalent) half-mask, air-purifying respirator.

**Above 1000 ppm organic vapor or Unknown:** Wear a MSHA/NIOSH approved (or equivalent) self-contained breathing apparatus in the positive pressure mode, OR, MSHA/NIOSH approved (or equivalent) full-face piece airline respirator in the positive pressure mode with emergency escape provisions. Air-purifying respirators should be equipped with MSHA/NIOSH approved (or equivalent) cartridges for protection against pesticides.

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. Gloves of other chemically resistant materials may not provide adequate protection: Neoprene, Butyl rubber. 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 100 ft/min. (0.5 m/sec.) at the point of vapor 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.

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**9. PHYSICAL AND CHEMICAL PROPERTIES**

Color .....	Tan
State .....	Liquid
pH .....	5 to 7
Viscosity .....	300 to 1100 CPS
Specific Gravity (Water = 1) .....	1.0 to 1.2 Approximate
Vapor Density (Air = 1) .....	< 1.0 Water
Vapor Pressure .....	17 mm Hg @ 20°C/68°F Water
Melting Point .....	0°C/32°F Water
Boiling Point .....	100°C/212°F Water
Solubility in Water .....	Dispersible
Percent Volatility .....	70 to 72 % Water and solvents
Evaporation Rate (BAc = 1) .....	< 1.0 Water

See Section 5, Fire Fighting Measures

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## **10. STABILITY AND REACTIVITY**

### Instability

This material is considered stable.

### Hazardous Decomposition Products

Thermal decomposition may yield the following: hydrogen chloride, isobutylene, oxides of nitrogen

### Hazardous Polymerization

Product will not undergo polymerization.

### Incompatibility

Avoid contact with strong oxidizing agents.

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## **11. TOXICOLOGICAL INFORMATION**

### Acute Data

Oral LD50 - rat: >5000 mg/kg

Dermal LD50 - rabbit: >2000 mg/kg

Skin irritation - rabbit: practically non-irritating

Eye Irritation - rabbit: no irritation

The following data pertains to studies conducted with the technical material, 90-96% active ingredient:

2-Week Dietary Study - dog: produced clinical signs indicative of acute neurotoxicity at dietary concentrations of 2000 ppm or greater, but not at a dietary concentration of 1000 ppm.

Single oral (40 mg/kg/day) or repeated oral (20 mg/kg/day) exposures to RH-0345 technical produced clinical signs indicative of acute neurotoxicity on laboratory animals (dog, rabbit and mouse).

### Subchronic/Chronic Data

The following data pertains to studies conducted with the technical material, 90-96% active ingredient:

In 90-day dietary toxicity studies in the rat and dog, the observed NOELs were 75 ppm (5.7 mg/kg/day) and 100 ppm (3.8 mg/kg/day), respectively. Toxicity to the liver and hemopoietic system was observed in both species.

### Mutagenicity Data

The following data pertains to studies conducted with the technical material, 90-96% active ingredient:

Ames mutagenicity: Negative

In vitro cytogenetic assay (Chinese hamster ovary cells): Negative

Mammalian cell gene-mutation assay in Chinese hamster ovary cells (CHO): Negative

In Vivo Cytogenetic Assay (Micronucleus Assay in Mouse): Negative

### Reproductive/Teratology Data

The following data pertains to studies conducted with the technical material, 90-96% active ingredient:

In a rat developmental toxicity study (oral gavage), the NOEL for maternal and fetal effects was 30 mg/kg/day. At 180 mg/kg/day, minimal decreases in fetal body weight and two fetal ossification sites in the presence of maternal toxicity were observed.

In a rabbit developmental toxicity study (oral gavage), the NOEL for maternal effects was 10 mg/kg/day. No evidence of developmental effects were observed up to and including doses of 120 mg/kg/day (highest dose tested).

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Sensitization Data

Delayed Contact Hypersensitivity - guinea pig: No allergic response observed.

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**12. ECOLOGICAL INFORMATION**

Environmental Toxicity

- Honeybee, LD50: > 100 µg/bee
- Earthworm, LC50: 1000 mg/kg; No Observed Effect Concentration (NOEC)
- Daphnia magna, LC50: 4.5 mg/l
- Bluegill sunfish (Lepomis macrochirus), LC50: > 8.4 mg/l
- Rainbow trout (Salmo gairdneri), LC50: > 8.6 mg/l
- Mallard duck, Dietary LC50: > 5000 ppm
- Bobwhite quail, Dietary LC50: 4522 ppm
- Bobwhite quail, Oral LD50: > 2250 mg/kg
- Bobwhite quail, Lowest Observed Effect Concentration (LOEC): 1050 ppm
- Bobwhite quail, Reproduction NOEC: 628 ppm
- Mallard duck, Lowest Observed Effect Concentration (LOEC): 628 ppm
- Mallard duck, Reproduction NOEC: 308 ppm
- Daphnia magna, Reproduction NOEC: 52 µg/l
- Daphnia magna, Lowest Observed Effect Concentration (LOEC): 110 µg/l
- Daphnia magna, Maximum Acceptable Toxicant Concentration (MATC): < 0.11 ppm

The above Environmental Toxicity data are from studies conducted on the technical material, 90-96% active ingredient.

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**13. DISPOSAL CONSIDERATIONS**

Procedure

Incinerate liquid and contaminated solids in accordance with local, state, and federal regulations.

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**14. TRANSPORT INFORMATION**

US DOT Hazard Class ..... NON-REGULATED

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**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 does not contain a chemical, which is listed in Section 313 at or above de minimis concentrations.

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CERCLA Information (40CFR 302.4)

Releases of this material to air, land, or water are not reportable to the National Response Center under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) or to state and local emergency planning committees under the Superfund Amendments and Reauthorization Act (SARA) Title III Section 304.

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.

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**16. OTHER INFORMATION**

**MSDS STATUS:** New

The Information Herein Is Given In Good Faith, But No Warranty, Express or Implied, Is Made. Consult Dow AgroSciences for Further Information