



EFAL AGRI

OF THE EFAL CHEMICAL INDUSTRIES LTD. GROUP

8, Hamlach St., P.O.B. 8213 Netanya 42293, Israel
Tel: +972-9-8656454 Fax: +972-9-8654278
E-MAIL: info@efal.com Web site: www.efal.com

MATERIAL SAFETY DATA SHEET

Efal-Agri
P.O. Box 8213,
Netanya, 42293, Israel.

In case of emergency, Call
972-9-865-6454

1. PRODUCT IDENTIFICATION

Product Name : **MEADOW PLANT GROWTH REGULATOR**
Signal Word : Caution
Active Ingredient (%) : Paclobutrazol Technical 25% CAS No : 76738-62-0
Chemical Name : (R*.R*)-beta-[4-chlorophenyl)methyl]-alpha(1,1-dimethylethyl)-
1H-1-2,4-triazole 1-ethanol
Chemical Class : A triazole plant growth regulator

2. COMPOSITION / INFORMATION ON INGREDIENTS

Ingredient	Weight	Exposure Limit	Ref.
Pactobutrazol *	25%	None	
Propylene Glycol	5%	None	
Other Ingredients**	70%	None	

* Active ingredient

** Other ingredients which are maintained as trade secrets, are any substances other than an active ingredient contained in this product. Some of these may be hazardous, but their identity is withheld because they are considered trade secrets. The hazards associated with the other ingredients are addressed in this document. Specific information on other ingredients for the management of exposures, spills, or safety assessments can be obtained by a treating physician or nurse by calling

3. HAZARDS IDENTIFICATION

Symptoms of Acute Exposure
none

Hazardous Decomposition Products
Can decompose at high temperatures forming toxic gases.

Physical Properties
Appearance : Off-white/buff/beige liquid
Odor : Not available

Unusual Fire, Explosion and Reactivity Hazards
During a fire, irritating and possibly toxic gases may be generated by thermal decomposition or combustion

4. FIRST AID MEASURES

PRODUCT NAME : MEADOW PLANT GROWTH REGULATOR

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Have the product container, label or Material Safety Data Sheet with you when calling a poison control center or doctor, or going for treatment.

Ingestion : If swallowed, call a poison control center or doctor immediately for treatment advice. Have the person sip a glass of water if able to swallow. Do not include vomiting unless told to do so after calling a poison control center or doctor. Do not give anything by mouth to an unconscious person.

Eye Contact : If in eyes : Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

Skin Contact : If on skin or clothing : Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

Inhalation : If inhaled : Move person to fresh air. If person is not breathing call an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call poison control center or doctor for further treatment advice.

Notes to Physician :

There is no specific antidote if this product is ingested
Treat symptomatically.

Medical Condition Likely to be Aggravated by Exposure

None known

5. FIRE FIGHTING MEASURES

Fire and Explosion

Flash Point (Test Method) : Does not flash
Flammable Limits (% in Air) : Lower : % Not Applicable Upper : % Not Applicable
Autoignition Temperature : Not Available
Flammability : Not Applicable

Unusual Fire, Explosion and Reactivity Hazards

During a fire, irritating and possibly toxic gases may be generated by thermal decomposition or combustion

In case of Fire

Use dry chemical, foam or CO₂ extinguishing media. Wear full protective clothing and self-contained breathing apparatus. Evacuate nonessential personnel from the area to prevent human exposure to fire, smoke, fumes or products of combustion. Prevent use of contaminated buildings, area and equipment until decontaminated. Water runoff can cause environmental damage. If water is used to fight fire, dike and collect runoff

6. ACCIDENTAL RELEASE MEASURES

In case of Spill or Leak

Control the spill at its source. Contain the spill to prevent it from spreading, contaminating soil, or entering sewage and drainage systems or any body of water. Clean up spills immediately, observing precautions outlined in Section 8. If a solid, sweep up material and place in a compatible disposal container. If a liquid, cover entire spill with absorbing material and place into compatible container. Scrub area with hard water detergent. Pick up wash liquid with additional absorbent and place into compatible disposal container. Once all material is cleaned up and placed in a disposal container, seal container and arrange for disposition.



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7. HANDLING AND STORAGE

Store the material in a well-ventilated, secure area out of reach of children and domestic animals. Do not store food, beverages or tobacco products in the storage area. Prevent eating, drinking, tobacco use, and cosmetic application in area where there is a potential for exposure to the material. Wash thoroughly with soap and water after handling.

8. EXPOSURE CONTROL/PERSONAL PROTECTION

**THE FOLLOWING RECOMMENDATIONS FOR EXPOSURE CONTROL/PERSONAL PROTECTION ARE INTENDED FOR THE MANUFACTURE, FORMULATION AND PACKAGING OF THE PRODUCT.
FOR COMMERCIAL APPLICATIONS AND ON-FARM APPLICATIONS CONSULT THE PRODUCT LABEL**

- Ingestion : Prevent eating, drinking, tobacco usage and cosmetic application in areas where there is a potential for exposure to the material. Wash thoroughly with soap and water after handling.
- Eye Contact : Where eye contact is likely, use chemical splash goggles. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.
- Skin Contact : Where contact is likely, wear chemical-resistant (such as nitrile or butyl) gloves, coveralls, socks and chemical-resistant footwear. For overhead exposure, wear chemical-resistant headgear.
- Inhalation : Respiration / Ventilation : If operating conditions result in airborne concentrations of this material, the use of an approved respirator is recommended. Use adequate ventilation to keep the airborne concentration of this material below the recommended exposure standards.
Use process enclosures, local-exhaust ventilation, or other engineering controls to keep airborne levels below exposure limits.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance :	Off-white/buff/beige liquid
Odor	Not available
Melting Point :	Not available
Boiling Point	212°F
Specific Gravity/Density	1.09 g/mL
pH	Not available
<u>Solubility in H₂O</u>	
Paclobutrazol Technical :	26 mg / L @ 68°F (20°C)
<u>Vapor Pressure</u>	
Paclobutrazol Technical	1.0E-06 Pa @ 68°F (20°C)



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10 STABILITY AND REACTIVITY

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Stability :	Stable under standard conditions
Hazardous Polymerization :	Will not occur
Conditions to Avoid :	None known
Materials to Avoid :	Oxidizing agents
Hazardous Decomposition Products :	Can decompose at high temperature forming toxic gases

11 TOXICOLOGICAL INFORMATION

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Acute Toxicity/Irritation Studies (Finished Products)

Ingestion :	<u>Practically Non-Toxic</u> Oral (LD50 Rat) :	> 2,000 mg/kg body weight
Dermal :	<u>Practically Non-Toxic</u> Dermal (LD50 Rat) :	> 2,000 mg/kg body weight
Inhalation :	<u>Practically Non-Toxic</u> Inhalation (LD50 Rat) :	
Eye Contact :	Non Irritating for eyes (Rabbit)	
Skin Contact :	Non-Irritating for skin (Rabbit)	
Skin Sensitization :	Non sensitizing by contact with skin (Guinea-pig)	

Neurotoxicity

Paclobutrazol
Technical :

Reproductive Effects

Paclobutrazol In the process of being identified and acquired
Technical :

Chronic/Subchronic Toxicity Studies

Paclobutrazol	- 21-day dermal (rabbit): NOEL is 10 mg/kg/day, LEL is 100 mg/kg/ day
Technical :	- 90-day feeding (rat): NOEL is 250 ppm, LEL is 1,250 ppm - One year feeding (dog): NOEL is 15 mg/kg/day, LEL is 75 mg/kg/day - Teratology (rat): NOEL (maternal toxicity) is greater than 100 mg/kg/day (highest dose tested). NOEL (fetal effects) is 10 mg/kg/day. - Teratology (rabbit): Within limitations of study (low fertility), NOEL (maternal toxicity) is 25 mg/kg/day. LEL is 75 mg/kg/day. - Mutagenicity: Paclobutrazol does not cause mutagenic effects. - Metabolism: Results from rat and dog studies indicate that paclobutrazol and its metabolites are rapidly eliminated. - Major routes of exposure: Mixers, loaders, and applicators would receive the most exposure via skin/eye contact and inhalation.

Other Toxicity Information :

The health hazard assessment is based on the results of animal toxicity testing and reports of accidental human exposures.



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Toxicity of Other Components :

Propylene Glycol

Reported to cause central nervous system depression (anesthesia, dizziness, confusion), headache and nausea. Also eye irritation may occur with lacrimation but no residual discomfort or injury. Prolonged contact to skin may cause mild to moderate irritation and possible allergic reactions. Chronic dietary exposure caused kidney and liver injury in experimental animals.

Inert Ingredients

CNS, skin, eye, kidney, liver

Propylene Glycol :

12 ECOLOGICAL INFORMATION

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Summary of Effects

Paclobutrazol Technical :

This material is toxic to fish and wildlife, Toxic to aquatic organisms

Eco-Acute Toxicity

Paclobutrazol

Green Algae 96 hours EbC50 7.2 mg/l

Technical :

Eco-Chronic Toxicity

Paclobutrazol

Not available

Technical :

Environmental Fate

Paclobutrazol Technical :

No data available for the formulation. The information presented here is for the active ingredient, Paclobutrazol. A thorough review of environmental information is not possible in this document.

Soil/Environment: Soil DT50 0.5-1 y in general; in calcareous clay loam (pH 8.8, 14% o.m.), DT50 <42 D; in course sandy loam (pH 6.8, 4% o.m., DT50 > 140d.

13 DISPOSAL CONSIDERATION

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Disposal

End users must dispose of any unused product as per the label recommended. Do not reuse product containers. Dispose of product containers, waste containers, and residues according to local state, and feral health and environmental regulations.

Characteristic Waste : Not Applicable

Listed Waste : Not Applicable

14 TRANSPORT INFORMATION

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DOT Classification

Non regulated Plant Growth Regulator



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Technical Shipping Name :

Plant Growth Inhibitor, Modifier, or Regulator Paclabutrazol 25% solution

UN Number : Not Applicable

Comments

None

15 REGULATORY INFORMATION

EPCRA SARA Title III Classification

Section 33/312 Hazard Classes : Acute Health Hazard
Chronic Health Hazard

CERCLA/SARA 302 Reportable Quantity (RQ)

None

RCRA Hazardous Waste Classification (40 CFR 261)

Not Applicable

TSCA Status

Exempt from TSCA subject to FIFRA

16 OTHER INFORMATION

NFPA Hazard Ratings

Health : 1
Flammability : 1
Instability : 0

HMIS Hazard Ratings

Health : 1
Flammability : 1
Reactivity : 0

0	Minimal
1	Slight
2	Moderate
3	Serious
4	Extreme

For non-emergency questions about this product call :
972-9-865-6454

The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, expressed or implied, is made with respect to the information contained herein.