

Symbol System Chemical Management

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Understanding Resistance Management Symbols for Improved Management

Several years ago, a worldwide effort was started to educate user groups on resistance management by providing a simple number symbol system that classified each Fungicide, Insecticide, and Herbicide. This was achieved by grouping the pesticidal Modes of Action (MOA) and their Target Sites. The Mode of Action is the biochemical mechanism by which the product interferes with the pest to disrupt normal growth. These are often associated with the Target Site of Action or the physical location in the pest where the pesticide is active. The end product is a simple to use numeric classification chart for the current active ingredients sold today.

What to Look For

The US EPA has requested chemical manufacturers to voluntarily include a pesticides group number on its product labels. These group symbols are in an easy to read format and standardized across the US. The following is an example of what you will see on products in the future.



How to Use This information

The basic purpose of this grouping system is to reduce the development of pest resistance to the products being used to manage them. The following points are offered:

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Example of a product containing one active ingredient

Group 11 Fungicide

Example of a product containing two active ingredients

Group 1 M5 Fungicide

Product Reference Guide - Fungicides

Group #	Active Ingredient	Resistance Group	Trade Name
1	Thiophanate-Methyl	Methyl Benzimidazole	Cleary's 3336
2	Iprodione	Dicarboximides	Chipco 26GT
2	Vinclozolin	Dicarboximides	Curalan
3	Myclobutanil	DMI	Eagle
3	Propiconazole	DMI	Banner Maxx
3	Triadimefon	DMI	Bayleton
4	Mefenoxam	Phenylamides	Subdue Maxx
7	Boscalid	Carboxamides	Emerald
7	Flutolanil	Carboxamides	ProStar
11	Azoxystrobin	QoI: includes strobilurins	Heritage
11	Pyraclostrobin	QoI: includes strobilurins	Insignia
11	Trifloxystrobin	QoI: includes strobilurins	Compass
12	Fludioxonil	Phenylpyrrole	Medallion
14	PCNB	Aromatic Hydrocarbons	Turficide
14	Chloroneb	Aromatic Hydrocarbons	Teremec SP
19	Polyoxin D Zinc	Polyoxins	Endorse
28	Propamocarb	Carbamate Fungicides	Banol
33	Fosetyl-Al	Phosphonates	Signature
M3	Mancozeb	Multi-site Activity	Protect
M3	Thiram	Multi-site Activity	Spotrete
M5	Chlorothalonil	Multi-site Activity	Daconil
1 + M5	Thiophanate-Methyl + Chlorothalonil	Multi-site Activity + Methyl Benzimidazole	Spectro 90
1 + 2	Thiophanate-Methyl + Iprodione	Methyl Benzimidazole + Dicarboximides	26/36
3 + 11	Propiconazole + Azoxystrobin	DMI + QoI	Headway
3 + 11	Propiconazole + Trifloxystrobin	DMI + QoI	Tartan
3 + 12 + M5	Propiconazole + Fludioxonil + Chlorothalonil	DMI + Phenylpyrrole + Multi Site Activity	Instrata

Product Reference Guide - Insecticides

Group #	Active Ingredient	Resistance Group	Trade Name
1A	Carbaryl	Carbamates	Seven SL
1B	Trichlorfon	Organophosphates	Dylox
1B	Chlorpyrifos	Organophosphates	Dursban Pro
2B	Fipronil	Phenylpyrazoles	Ceasefire
3	Deltamethrin	Pyrethroids	DelaGard
3	Lambda-cyhalothrin	Pyrethroids	Scimitar GC
3	Bifenthrin	Pyrethroids	Talstar
3	Beta-Cyfluthrin	Pyrethroids	Tempo Ultra
4A	Clothianidin	Neonicotinoids	Arena
4A	Imidacloprid	Neonicotinoids	Merit
4A	Thiamethoxam	Neonicotinoids	Meridian
18	Halofenozide	Diacylhydrazines	Mach 2
3 + 4A	Bifenthrin + Imidacloprid	Pyrethroids + Neonicotinoids	Allectus GC

Symbol System—

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+ Review your current program, add the group codes after each product, and look for patterns in your product use.

+ Avoid using similar group numbers in a tank mix or in sequential applications.

+ Do not use group symbols alone to make resistance management decisions. Read the product label for specific resistance management strategies.

Regardless of your approach, it is the user's responsibility to understand the best management practices that maximize product performance and resistance management. Many manufacturers have long been leading advocates in this area and has often stressed the importance of using and changing multiple Modes of Action (MOA) for effective disease control and resistance management.

Additional information is also available to help at the following websites:

+ Fungicide - www.frac.info/publications.html + Insecticide - www.irac-online.org

SPECIMEN LABEL

3336 WP

TURF & ORNAMENTAL SYSTEMIC FUNGICIDE IN WATER SOLUBLE BAGS

For prevention and control of turf diseases and the diseases of annual and perennial flowers, bedding plants, foliage plants, ground covers, plus deciduous and evergreen trees and shrubs.

GROUP 1 FUNGICIDE

ACTIVE INGREDIENTS:
Triiphanate-methyl (dimethyl 4,4'-o-phenylenebis(3-thioallophanate)) 50%
OTHER INGREDIENTS 50%
TOTAL 100%

KEEP OUT OF REACH OF CHILDREN

CAUTION

STATEMENT OF FIRST AID

- **IF INHALED:** Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice.
- **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 further treatment advice.
- **IF IN EYES:** Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.
- **IF SWALLOWED:** Call poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the poison control center or doctor. Do not give anything by mouth to an unconscious person.
- Have the product container or label with you when calling a poison control center or doctor, or when going for treatment.



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