

# PESTICIDE STANDARD WRITTEN NOTIFICATION

## FOR SCHOOLS, DAY CARE PROGRAMS, AND SCHOOL-AGE CHILDCARE PROGRAMS

- The school, day care center, and/or school-age childcare program is responsible for sending this standard written notification form to employees, pupils, parents etc. to insure that they receive this information at least 2 working days prior to any pesticide use.
- It is recommended that the Pest Management Professional use this ready-to-copy standard written notification form for the purpose of providing pesticide use information to the school, day care center, and/or school-age childcare program. The Pest Management Professional should save this form for copying.

**School:**

\_\_\_\_\_   
 Name of School , Day care center, and/or School age childcare program

**Pest Management Company:**

(Please Print)

\_\_\_\_\_   
 Name

\_\_\_\_\_   
 Address

**Pest Management Professional:**

(Please Print)

\_\_\_\_\_   
 License number

### A. List the Approximate Dates on which the pesticide use shall commence and conclude

**Beginning Date** \_\_\_\_\_

**Ending Date** \_\_\_\_\_

### B. Record the specific location of the anticipated pesticide use


### C. Pesticide Information (Pest Management Professional should be specific as is possible when listing product(s) to be used)

<b>Pesticide Product Name</b>	<b>Pesticide Type</b>	<b>EPA Registration #</b>	<b>Description/Purpose of treatment and/or application</b>
1.			
2.			
3.			
4.			
5.			

This standard written notification must be accompanied by the following 2 documents. These materials are available from the DAR web page [www.mass.gov/agr](http://www.mass.gov/agr). Follow the links to the Children's Protection page.

- Chemical Specific Fact Sheet(s)
- Consumer Information Bulletin for school, day care center, and/or school-age childcare program.

## NEW CHEMICAL FACT SHEET

### 1. DESCRIPTION OF THE CHEMICAL

Generic Name: (N{[[[3,5-dichloro-2-fluoro-4-(1,1,2,3,3,3-hexafluoropropoxy) phenyl] amino] carbonyl}-2,6-difluorobenzamide))

Common Name: Noviflumuron

Trade Name: Recruit III

EPA Shaughnessy Code (OPP Chemical Code): 118204

Chemical Abstracts Service (CAS) Number: 121451-02-3

Year of Initial Registration:

Pesticide Type: Insecticide

Chemical Family: Fluorinated Benzophenyl Urea

Producer: Dow AgroSciences

### 2. USE PATTERNS AND FORMULATIONS

Application Sites: In ground around structures and interior and exterior surfaces  
Buildings and crawl spaces, fences, utility poles, decking,  
landscape decorations, trees or other features that could be  
damaged by termite foraging and feeding activity.

Type and Methods of Application: Above and below ground bait stations.

Types of Formulations: 96% a.i. Technical; 50% Manufacturing Concentrate; 0.5%  
In ground bait and 0.5% Above ground bait stations.

Target Pests: Termites.

### 3. SCIENCE FINDINGS

#### SUMMARY STATEMENT

Technical grade Noviflumuron has very mild or no acute toxic effects. It is classified as Toxicity Category IV in all acute studies. Noviflumuron is a mild ocular and dermal irritant, but does not produce skin sensitization. Developmental NOAELs and LOAELs for both rats and

rabbits occurred at either the same dose levels or were above the NOAELs [ $\geq 1000$  mg/kg/day-the limit dose] and LOAELs [not determined] for maternal toxicity. Noviflumuron was not shown to be mutagenic in a battery of tests.

The toxicology data base is complete and no additional studies are required.

Based on the use pattern as a termite bait, a soft malleable bait matrix contained in a rigid plastic housing, there is low concern for acute risks to non-endangered and endangered freshwater species. Acute risks to endangered and non-endangered birds are not expected based on the use pattern. General and widespread exposure to non-target insects, terrestrial plants and mammals are expected to be low based on the use pattern. Thus, this registration will have no effect on endangered species.

Noviflumuron for use as a termite bait is classified as a Reduced Risk Pesticide.

## CHEMICAL CHARACTERISTICS

### Technical Grade

Physical:	Powder
Color:	White
Odor:	None
Melting Point:	156.2°C
Molecular Formula:	$C_{17}H_7Cl_2F_9N_2O_3$
Molecular Weight:	529.15g/mole
Vapor Pressure:	$7.19 \times 10^{-16}$ Pa @ 25°C
Henry's Law Constant:	$6.0 \times 10^{-7}$ Pam <sup>3</sup> /mole (20°C)
Log K <sub>ow</sub> :	4.94 (86,000)
Solubility:	0.194 mg/L
Dissociation Constant:	Molecule does not contain reversibly ionizable Functional groups

## HUMAN HEALTH ASSESSMENT

### ACUTE TOXICITY

#### Technical Grade

- \* Acute Oral - Rat: LD<sub>50</sub> >5000 mg/kg (Limit Test) in males and females.  
Toxicity Category IV
- \* Acute Dermal - Rabbit: LD<sub>50</sub> >5000 mg/kg (Limit Test) in males and females.  
Toxicity Category IV
- \* Acute Inhalation - Rat: LC<sub>50</sub> >5.24 mg/L.  
Toxicity Category IV
- \* Primary Eye Irritation - Rabbit: Mild irritant - irritation subsided in all animals within 24

hours.

Toxicity Category IV

\* Primary Skin Irritation - Rabbit: Mild irritant - irritation subsided within 72 hours of removing patch.

Toxicity Category IV

\* Dermal Sensitization - Guinea Pig: Not a dermal sensitizer.

#### Manufacturing Use Concentrate

\* Acute Oral - Rat: LD<sub>50</sub> >5000 mg/kg (Limit Test) in males and females.

Toxicity Category IV

\* Acute Dermal - Rat: LD<sub>50</sub> >5000 mg/kg (Limit Test) in males and females.

Toxicity Category IV

\* Acute Inhalation - Rat: LC<sub>50</sub> > 0.92 mg/L in males and females.

Toxicity Category III

\* Primary Eye Irritation - Rabbit: No signs of ocular irritation.

Toxicity Category IV

\* Primary Dermal Irritation - Rabbit: No signs of dermal irritation.

Toxicity Category IV

\* Dermal Sensitization - Guinea Pig: Not a dermal sensitizer.

#### MUTAGENICITY

##### Technical

\* Salmonella typhimurium & Escherichia coli/Mammalian Microsome Reverse Mutation Assay

Not mutagenic

\* In Vivo Mouse Micronucleus Assay

Not mutagenic

\* Forward Gene Mutation Assay in Chinese Hamster Ovary (CHO) Cells

Not mutagenic

\* In Vitro Mammalian Chromosome Aberrations in Primary Rat Lymphocytes

Not mutagenic

\* In Vitro Mammalian Chromosome Aberrations in Primary Rat Lymphocyte Cultures

Not mutagenic

## SUBACUTE TOXICITY

### Technical Grade

#### \* 4 Week Dietary Study in Rats

In a subchronic toxicity study, Noviflumuron (99.6% a.i.; Lot/Batch no. DECO-615-112) was administered to 5 Fischer-344 rats/sex/dose in the diet at dose levels of 0, 1, 10, 100, 500 or 1000 mg/kg bw/day (0, 1.0, 10.4, 101.4, 512.6, 1029.1 mg/kg/day for males and 0, 1.1, 10.9, 105.1, 520.6, 1055.6 mg/kg/day for females) for 4 weeks. There were no compound-related effects on mortality, clinical signs, body weights, body weight gains, gross pathology, hematology, clinical chemistry or urinalysis parameters.

There appeared to be a treatment related effect on food consumption in males in the 1000 mg/kg/day group during the latter part of the study (days 23-28). All males in the 1000 mg/kg/day group consumed less diet than any of the controls (13.1-15.0 g/animal/day), and 2 of 5 males in the 1000 mg/kg/day group consumed less than half that amount (5.1 and 5.5 g/animal/day). Absolute liver weights were significantly increased at 500 and 1000 mg/kg/day in both sexes (males: 118 and 128% of controls, respectively; females: 124 and 125% of controls, respectively). Relative liver weights were also increased in males at 500 and 1000 mg/kg/day (116 and 125% of controls, respectively), and in females in the 500 and 1000 mg/kg/day groups (118 and 120% of controls, respectively). Microscopic examination of the liver revealed very slight centrilobular hepatocellular hypertrophy in all 5 male and 5 female rats in the 1000 mg/kg/day and in all 5 females in the 500 mg/kg/day group. The changes in liver weight correlate fairly well with the increased incidence of centrilobular hepatocellular hypertrophy in animals in the 500 and 1000 mg/kg/day groups, and are considered to be treatment related. However, the liver changes are considered to be an adaptive response, rather than an adverse response. **The LOAEL is 1029 mg/kg/day based on decreased food consumption in males. The NOAEL is 513 mg/kg/day.**

#### \* 28 Day Dietary Toxicity Study in Mice

In a subchronic toxicity study, Noviflumuron (98.4% a.i.; Lot/Batch no. F0031-148; TSN102332) was administered to 5 CD-1 mice/sex/dose in the diet at dose levels of 0, 10, 100, 500 or 1000 mg/kg/day (0, 10.8, 110, 538, 1060 mg/kg/day for males and 0, 11.2, 113, 504, 1140 mg/kg/day for females) for 28 days. There were no compound-related effects on mortality, clinical signs, body weights, body weight gains, food consumption, ophthalmology, hematology, clinical chemistry or gross pathology.

Absolute liver weights were significantly increased in males and females in the 100 (127 and 112% of controls, respectively), 500 (122 and 124% of controls, respectively), and 1000 (130 and 126% of controls, respectively) mg/kg/day. Similarly, relative liver weights were significantly increased in males at 100, 500 and 1000 mg/kg/day (120, 122 and 133% of controls,

respectively), and in females at 500 and 1000 mg/kg/day (123 and 118% of controls, respectively). Treatment related liver lesions were observed in males at 500 and 1000 mg/kg/day and females at 1000 mg/kg/day. Microscopic examination revealed hepatocellular hypertrophy with altered tinctorial properties (centrilobular/midzonal to panlobular) in males at 500 and 1000 mg/kg/day and very slight vacuolization (consistent with fatty change) of the periportal hepatocytes in males at 500 and 1000 mg/kg/day and in females at 1000 mg/kg/day. **The LOAEL is 110 mg/kg/day based on increased liver weights in both sexes, progressing to liver toxicity at higher dose levels. The NOAEL for this study is 10.8 mg/kg/day.**

\* 90 Day Oral(feeding) Toxicity Study in Dogs

In a 90-day oral (feeding) toxicity study, Noviflumuron (98.4% a.i., batch/lot# F0031-148) was administered to 4 beagle dogs/sex/dose in the diet at dose levels of 0, 0.003, 0.3 or 3% (equivalent to 0, 0.931, 115, or 1040 mg/kg/day for males and 0, 1.06, 113, or 1150 mg/kg/day for females).

There were no treatment-related changes with respect to mortality, clinical signs of toxicity, body weights, body weight gains, food consumption, ophthalmology, clinical chemistry or urinalysis. The erythrocyte count was decreased in males and females in the 0.3 and 3.0% feeding groups at 6- (82-89% of controls) and 13-weeks (82-96% of controls). The erythrocyte count was decreased in males and females in the 3% dietary (recovery) group at 13 weeks (91% of controls). Males in the 0.3 and 3% dietary groups had treatment related decreases in mean hemoglobin concentration (87-91% of controls) and hematocrit (89-94% of controls) at 6 and 13 weeks. Males and females in the 0.3 and 3.0% dietary groups had an increase in MCV (107-110% of controls at 6- and 13 weeks. [Analysis of the changes in red blood cell parameters was conservative, but considered appropriate, based on the absence of long-term studies, or another 90-day study.] Males receiving 3.0% in the diet had a shift from lymphocytes to neutrophils in analysis of the WBC differential count at 6- and 13 weeks. At the end of the 28-day recovery period, the erythrocyte counts, hemoglobin and hematocrit returned to normal levels. The MCV was still elevated at the end of the 28-day recovery period in the 3.0% dietary group. A very slight increase in polychromasia was observed in one female in the 0.3% dietary group, and in three males and one female in the 3.0% dietary group. Very slight bone marrow hyperplasia was observed in 4 males and 4 females in the 0.3% dietary group, and in 1 male and 1 female in the 3.0% dietary group. In addition, slight bone marrow hyperplasia was observed in 3 males and 3 females in the 3.0% dietary group. In the recovery phase group, 3 males and 2 females in the 3.0% dietary group exhibited "very slight" bone marrow hyperplasia, and 1 female exhibited slight bone marrow hyperplasia. The observance of bone marrow hyperplasia in the 2 highest dose groups was indicative of a regenerative response to the decrease in erythrocytic parameters. **The LOAEL is 0.3% Noviflumuron in the diet (corresponding to 115 mg/kg/day in males and 113 mg/kg/day in females), based on changes in red blood cell parameters (hematocrit, hemoglobin, RBC and MCV) and compensatory bone marrow hyperplasia. The NOAEL is 0.003% Noviflumuron in the diet (corresponding to 1 mg/kg/day in males and females).**

\* Oral Gavage Developmental Toxicity Study in Rabbits

In a developmental toxicity study, Noviflumuron (98% a.i., lot/reference number: F0031-

68/TSN101708) was administered to 25 time-mated female New Zealand rabbits/dose in by gavage at dose levels of 0, 250, 500 or 1000 mg/kg bw/day from days 7-27 of gestation.

There were no treatment-related maternal effects noted at the highest dose tested of 1000 mg/kg bw/day. The maternal LOAEL was not determined. The maternal NOAEL is greater than or equal to 1000 mg/kg bw/day (HDT).

There were no treatment-related developmental effects noted at the highest dose tested of 1000 mg/kg bw/day. The developmental LOAEL was not determined. The developmental NOAEL is greater than or equal to 1000 mg/kg bw/day (HDT).

\* Oral Gavage Developmental Toxicity Study in Rats

In a developmental toxicity study, Noviflumuron (98% a.i., lot/reference number: F0031-68/TSN101708) was administered to 25 time-mated female CD rats/dose by gavage at dose levels of 0, 250, 500 or 1000 mg/kg bw/day from days 6-20 of gestation.

There were no treatment-related maternal effects noted at the highest dose tested of 1000 mg/kg bw/day. The maternal LOAEL was not determined. The maternal NOAEL is greater than or equal to 1000 mg/kg bw/day (HDT).

There were no treatment-related developmental effects noted at the highest dose tested of 1000 mg/kg bw/day. The developmental LOAEL was not determined. The developmental NOAEL is greater than or equal to 1000 mg/kg bw/day (HDT).

## OCCUPATIONAL AND RESIDENTIAL EXPOSURE

### Occupational:

Only a qualitative exposure assessment was performed for the following reasons:

- \* The end-use product is enclosed in a plastic station except when the PCO adds water for moisture and looks for termites;
- \* The end-use product contains impregnated material with 0.5% ai;
- \* The vapor pressure is very low ( $5.4 \times 10^{-12}$  mm Hg at 25°C);
- \* The acute toxicity categories for all routes were low;
- \* There is little or no anticipated exposure for handlers; and
- \* This is a reduced exposure method of termite control, preferable to more toxic spray applications.

The target MOEs are 100 for short-/intermediate-term exposure and 1,000 for long-term exposure. No exposure data were available that reflect the use/installation of this specific type of termite control system. However, for characterization purposes, a preliminary and conservative

estimation of exposure was made using data from a proprietary study of dermal and inhalation exposure during production of a termiticide barrier product (i.e., an impregnated polymer film sheet that is placed beneath the foundation of buildings during construction). When the exposure data were adjusted for percent active ingredient and duration of exposure (i.e., the study lasted 2 hours, while it was conservatively assumed that the PCOs install/monitor stations for 8 hrs/day), and compared to the NOAEL of 10.8 mg/kg/day, a total MOE of 8,000 is obtained. Based on these conclusions, the target MOEs are 100 for short-/intermediate-term exposure, and 1,000 for long-term exposure. The conservatively estimated MOE is well above the targets; this confirms the qualitative assessment indicating that this use pattern for Noviflumuron is not of concern.

#### Residential:

No residential exposure is anticipated. While this product may be used in residential settings, it is only sold to trained pest control operators for installation and monitoring. When installed, the Noviflumuron-impregnated matrix is enclosed within the devices, which prevents post application dermal exposure. Because the vapor pressure is very low ( $5.4 \times 10^{-12}$  mm Hg @ 25°C), inhalation post application exposure is also not expected.

#### ECOLOGICAL EFFECTS CHARACTERISTICS

- \* Avian Acute Oral: Practically Non-toxic  
Bobwhite quail:  $LD_{50} = >2000$  mg ai/kg-bw
- \* Avian Dietary: Slightly Toxic  
Bobwhite quail:  $LC_{50} = 4100$ mg ai/kg-diet
- \* Avian Dietary: Practically Non-toxic  
Mallard duck:  $LC_{50} = > 5300$  mg ai/kg-diet
- \* Freshwater Fish: Moderately Toxic  
Bluegill: 96-hr  $LC_{50} = 1.63$   
Rainbow trout: 96-hr  $LC_{50} = 1.77$
- \* Freshwater Invertebrates: Very Highly Toxic  
Daphnia Magna: 48-hr  $EC_{50} = 308$  (294,374)

#### ENVIRONMENTAL FATE

- \* Hydrolysis:  
Noviflumuron is stable in sterile aqueous buffered solutions at pH 5 and 7.  
Noviflumuron has a calculated half-life of 19 days in a pH 9 solution.
- \* Aerobic Soil Metabolism:



Noviflumuron degraded with half-lives ranging from 202 to 399 days in three different U.S. soils.

\* Batch Equilibrium:

Noviflumuron was immobile in four U.S. soils. Adsorption  $K_d$  values ranged from 1,614-1,994 for the Indiana loam soil, 859-1,437 for the Indiana sand soil, 4,013-7,828 for the North Dakota loam soil, and 3,008-3,755 for the North Dakota clay soil indicating high adsorption potential. Corresponding  $K_{oc}$  values ranged from 159,776-197,432 for the Indiana loam soil, 53,673-89,783 for the Indiana sand soil, 211,237-412,004 for the North Dakota loam soil, and 376,061-469,335 for the North Dakota clay soil.

**CONTACT PERSON:**

Joseph M. Tavano Biologist, PM-10  
Insecticide Branch , Registration Division (7505C)  
Office of Pesticide Programs  
U.S. EPA, Ariel Rios Building  
1200 Pennsylvania Avenue NW  
Washington, DC 20460

Office Location and Telephone Number:

Rm. 222, Crystal Mall # 2  
1921 Jefferson Davis Highway  
Arlington, VA 22202  
(703) 305-6411

Electronic copies of the this fact sheet are available on the Internet. See <http://www.epa.gov/opprd001/factsheets/>

Printed copies of this fact sheet can be obtained from EPA's National Center for Environmental Publications and Information (EPA/NCEPI), PO Box 42419, Cincinnati, OH 45242-2419, telephone 1-800-490-9198; fax 513-489-8695.

For more information about EPA's pesticide registration program, please contact the Registration Division (7505C), OPP, US EPA, Washington, DC 20460, telephone 703-305-5446.

For information about the health effects of pesticides, or for assistance in recognizing and managing pesticide poisoning symptoms, please contact the National Pesticides Telecommunications Network (NPTN). Call toll-free 1-800-858-7378, from 6:30 a.m. to 4:30 p.m. Pacific Time, or 9:30 a.m. to 7:30 p.m. Eastern Standard Time, seven days a week.

# THE COMMONWEALTH OF MASSACHUSETTS

EXECUTIVE OFFICE OF ENERGY AND ENVIRONMENTAL AFFAIRS



## Department of Agricultural Resources

251 Causeway Street, Suite 500, Boston, MA 02114  
617-626-1700 fax: 617-626-1850 [www.mass.gov/agr](http://www.mass.gov/agr)



### THE ACT PROTECTING CHILDREN AND FAMILIES FROM HARMFUL PESTICIDES OF 2000

#### Massachusetts Pesticide Enforcement Consumer Information Bulletin FOR SCHOOLS, DAYCARE CENTERS AND SCHOOL AGE CHILD CARE PROGRAMS

The Massachusetts Pesticide Control Act requires parents, staff, and children to receive this Consumer Information bulletin whenever pesticide applications are being made on the property of your school, daycare center or school age child care program. This bulletin is being provided to you along with a Standard Written Notification form and a Pesticide Specific Factsheet.

#### **Why am I receiving this information and what should I do when I receive it?**

The purpose of the Standard Written Notification is to provide you with information about pesticide applications which are taking place on the property of your school, day care center or school age child care program. The bulletin provides information about precautions you can take to minimize exposure to any pesticides. The Pesticide Specific Factsheets provide information about the properties of the pesticides being used.

#### **Who applies pesticides in my school, daycare center or school age child care program?**

Commercial pest management professionals, facilities managers, grounds personnel or custodians. Regardless of the approach used, the person who applies the pesticides must have a current and valid Pesticide Bureau Applicator license. Check the standard written notification form for the applicator's license number.

#### **How do I know when pesticides are being applied?**

Employees, supervised children and their guardians must receive standard written notification at least two working days prior to the application of pesticides outdoors on the property. The standard written notification form, which accompanies this bulletin, includes:

- approximate dates when the application shall commence and conclude;
- specific location of the application;
- product name, type and EPA Registration number of the pesticide;
- a Pesticide Specific Fact Sheet;
- a description of the purpose of the application and
- this Consumer Information Bulletin

The notification must also be posted in a common area of the facility at least two working days before the outdoor application is to commence and at least 72 hours after the application. Treated areas will be posted with clear and conspicuous warning signs along the perimeter. This information will be supplied to the school by the licensed pesticide applicator.

**Are applications of pesticides safe?**

All pesticides must be treated with caution. They are intended to be specifically poisonous to target pest insects, weeds, mold, fungus etc. - and may also be harmful to other living things including humans. Some degree of risk is always posed by their use. Because of this inherent risk, a number of regulatory and non-regulatory mechanisms have evolved to deal with those risks. Included among these mechanisms are pesticide regulations such as those enforced by Massachusetts Pesticide Enforcement; licensing and training of pesticide applicators; improved pesticide application methods; and the use of Integrated Pest Management (IPM).

**What precautions can I take to minimize my exposure to pesticide applications?**

There are several precautions that can be taken to reduce potential exposure to pesticides. These precautions will vary depending on where and how the pesticides are applied. Chemicals may be ingested, inhaled and absorbed through the skin. Know where the pesticide will be applied and how you might come into contact with it. Use common sense. The licensed pesticide applicator is required to post yellow signs to indicate a pesticide application on school grounds. These are some suggested general precautions. Ask the licensed pesticide applicator for other suggestions or directions specific to the work being done.

**For outdoor applications:**

- be familiar with the small yellow signs which applicators are required to post when a pesticide is applied outdoors to turf. Stay off the field until the flags are removed.
- if you are sensitive to chemicals, avoid the area of pesticide application for 72 hours.
- ensure that pets are kept away from the area of pesticide application

**For indoor applications:**

- cover or refrigerate edible products.
- remove or cover toys, clothes, and bedding from areas to be treated.
- remove pets including their food and water bowls and toys from the area to be treated.
- ventilate as much as possible during and, following an indoor pesticide application, open the windows.
- do not walk on treated areas and carpets until completely dry. Ask about drying times.

**What types of pesticides will be applied?**

Pesticide applicators may apply pesticides in several forms for control of insects and weeds. Dusts, aerosol sprays, sprays, baits, and fogs are all common forms in which pesticides exist and are used. For control of termites, the soil around the building may be impregnated with a pesticide. To control weeds, pesticides may be used as granules or sprays. Mechanical traps may also be used to control rodents.

In Massachusetts schools daycare centers and school age child care programs have to develop special pest management plans called Integrated Pest Management (IPM) plans. IPM is an approach to pest management which relies on a combination of common sense practices, including pesticides, for preventing and controlling pests. All plans are required to be submitted to the Department of Agricultural Resources. Check the MDAR website to see if your school has submitted its plan. <http://massnrc.org/ipm/index.html>

**What if I have a question or problem?**

Questions about what pesticides will be applied and why, and specific information about the application should be referred to the licensed pesticide applicator doing the work.

The Massachusetts Department of Agricultural Resources, Pesticide Enforcement is responsible for enforcing the pesticide regulations and laws. Contact Pesticide Enforcement at 617-626-1781. Additional information can be found at the Pesticide Programs website: <http://www.mass.gov/agr/pesticides/>

Updated August 2011

# Specimen Label

**Recruit HD termite bait must be used in conjunction with a service provided by a pest management professional licensed by the state to apply termite control products.**



# Recruit<sup>®</sup> HD

## Termite Bait

®Trademark of Dow AgroSciences LLC

**A durable termite bait for use in an integrated management system for protection of structures against subterranean termites**

Active Ingredient: noviflumuron ..... 0.5%  
Other Ingredients ..... 99.5%  
Total ..... 100.0%

EPA Reg. No. 62719-608

### Environmental Hazards

This product is highly toxic to aquatic invertebrates and possibly to fish. Do not allow the bait or its noviflumuron contents to be washed into a body of water containing aquatic life, such as a pond or stream. Do not use, handle or tamper with the bait in a manner inconsistent with this label.

### Directions for Use

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. Read all Directions for Use carefully before applying.

### Storage and Disposal

Do not contaminate water, food or feed by storage or disposal.  
**Pesticide Storage:** Store in original container in a dry storage area.  
**Pesticide Disposal:** Product not disposed of by use according to label directions shall be wrapped in paper and placed in a trash can.  
**Container Handling:** Do not break open, cut into or remove protective wrapper from product until ready for use.

### General Information

Recruit<sup>®</sup> HD termite bait contains an insect growth regulator (IGR) noviflumuron that prevents successful molting and development of subterranean termites. This disruption of development causes a decline of the termite colony to the point where the colony can no longer sustain itself and is eliminated.

Recruit HD is used in the Sentricon<sup>®</sup> Colony Elimination System for prevention and elimination of subterranean termite colonies, including *Coptotermes*, *Reticulitermes*, and *Heterotermes* spp., and is intended to form the basis of an on-going program providing structural protection against subterranean termites. Use of this termite baiting system involves the installation of Recruit HD for delivery of noviflumuron coupled with concurrent monitoring and baiting of the site. When Recruit HD is inspected and replenished per label instructions, it provides on-going prevention and elimination of termite colonies.

Target sites for this system can include buildings, fences, utility poles, decking, landscape plantings and trees, or other features that could be damaged by termite feeding and foraging activity. Recruit HD can be used on the inside or outside of foundation walls of crawl space areas, or through access holes made through concrete and asphalt if adequate soil is not accessible and such action is warranted. Recruit HD may be used

in lieu of a pre-construction termiticide (chemical barrier) treatment as a means of preventing termite infestation of new structures.

### Installation of Recruit HD

Install Sentricon stations around the target site at intervals not to exceed 20 feet where soil access is not restricted. If the structural foundation is known to have been previously treated with a soil-applied termiticide, do not install Sentricon stations in the soil closer than 18 inches from the foundation.

Based upon the professional evaluation of the installer, install additional Sentricon stations in areas conducive to termite activity in proximity to the structure. Examples of areas to be evaluated include:

- locations near visible termite activity (foraging tubes; termite infested plants, wood, and other materials)
- bath traps
- moist soil in shaded areas
- irrigation sprinkler heads
- roof downspouts and other moist areas
- planting beds or other areas with plant root systems

If present, remove shrink wrap from Recruit HD. Place Recruit HD in each Sentricon station upon station installation. Recruit HD may also be placed in previously installed Sentricon stations upon removal of the existing monitoring device or bait.

### Service of Recruit HD

The purpose of the service phase is to detect the presence of subterranean termites or signs of termite activity in Recruit HD to monitor for termites, to aid Recruit HD replacement, and to confirm colony elimination. This procedure does not attract termites from other locations.

Recruit HD is inspected manually for detection of termites, termite activity, or to identify the need to replace Recruit HD. If Recruit HD is more than 1/3 depleted, replace it with new Recruit HD. If possible, gently tap the termites from the used Recruit HD into the Sentricon station containing the new Recruit HD, being careful to not injure the termites. Introduce these termites after the new Recruit HD has been installed into the Sentricon station.

Sentricon stations containing Recruit HD are inspected and serviced on at least an annual basis. When annual service is being provided, an annual inspection date must be assigned for each structure. Stations must be inspected and serviced at intervals not exceeding 30 days beyond the annual inspection date unless unfavorable conditions exist. Unfavorable conditions include frozen or water-saturated soil or normal seasonal decline in subterranean termite foraging activity that may temporarily disrupt feeding on Recruit HD. Do not allow more than fifteen months to elapse between inspections. Seasonal effects on termite activity vary geographically, but feeding activity typically declines during periods when the local historical average daily temperature falls below 50°F. Inspection and servicing may be suspended during these periods; however, do not allow more than fifteen months to elapse between inspections. Refer to National Weather Service data or contact Dow AgroSciences for information regarding local historical average daily temperature.

### Terms and Conditions of Use

If terms of the following Warranty Disclaimer, Inherent Risks of Use and Limitation of Remedies are not acceptable, return unopened package at once to the seller for a full refund of purchase price paid. Otherwise, to the extent permitted by law, use by the buyer or any other user constitutes acceptance of the terms under Warranty Disclaimer, Inherent Risks of Use and Limitation of Remedies.

### Warranty Disclaimer

Dow AgroSciences warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated on the label when used in strict accordance with the directions, subject to the inherent risks set forth below. To the extent permitted by law, Dow AgroSciences MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER EXPRESS OR IMPLIED WARRANTY.

### Inherent Risks of Use

It is impossible to eliminate all risks associated with use of this product. Lack of performance or other unintended consequences may result because of such factors as use of the product contrary to label instructions (including conditions noted on the label, such as unfavorable temperatures, soil conditions, etc.), abnormal conditions (such as excessive rainfall, drought, tornadoes, hurricanes), presence of other materials, the manner of application, or other factors, all of which are beyond the control of Dow AgroSciences or the seller. To the extent permitted by law, all such risks shall be assumed by buyer.

---

## Limitation of Remedies

---

To the extent permitted by law, the exclusive remedy for losses or damages resulting from this product (including claims based on contract, negligence, strict liability, or other legal theories), shall be limited to, at Dow AgroSciences' election, one of the following:

1. Refund of purchase price paid by buyer or user for product bought, or
2. Replacement of amount of product used.

To the extent permitted by law, Dow AgroSciences shall not be liable for losses or damages resulting from handling or use of this product unless Dow AgroSciences is promptly notified of such loss or damage in writing.

To the extent permitted by law, in no case shall Dow AgroSciences be liable for consequential or incidental damages or losses.

The terms of the Warranty Disclaimer, Inherent Risks of Use and Limitation of Remedies cannot be varied by any written or verbal statements or agreements. No employee or sales agent of Dow AgroSciences or the seller is authorized to vary or exceed the terms of the Warranty Disclaimer or Limitation of Remedies in any manner.

®Trademark of Dow AgroSciences LLC

**Produced for**  
**Dow AgroSciences LLC**  
**9330 Zionsville Road**  
**Indianapolis, IN 46268**

Label Code: D02-377-003  
Replaces Label: D02-377-002  
LOES Number: 010-02242

EPA accepted 04/27/11

### Revisions:

1. Deleted directions for new structures in Florida.
2. Revised Service section.

# SAFETY DATA SHEET

## DOW AGROSCIENCES LLC

**Product name:** RECRUIT™ HD Bait Device

**Issue Date:** 03/19/2018

**Print Date:** 02/06/2020

DOW AGROSCIENCES LLC encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

---

### 1. IDENTIFICATION

---

**Product name:** RECRUIT™ HD Bait Device

**Recommended use of the chemical and restrictions on use**

**Identified uses:** End use insecticide product

#### COMPANY IDENTIFICATION

DOW AGROSCIENCES LLC  
9330 ZIONSVILLE RD  
INDIANAPOLIS IN 46268-1053  
UNITED STATES

**Customer Information Number:**

800-992-5994  
info@corteva.com

#### EMERGENCY TELEPHONE NUMBER

**24-Hour Emergency Contact:** 800-992-5994

**Local Emergency Contact:** 352-323-3500

---

### 2. HAZARDS IDENTIFICATION

---

#### Hazard classification

This material is hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29CFR 1910.1200.

Reproductive toxicity - Category 2

Effects on or via lactation

#### Label elements

**Hazard pictograms**



Signal word: **WARNING!**

**Hazards**

Suspected of damaging fertility or the unborn child.  
May cause harm to breast-fed children.

**Precautionary statements****Prevention**

Obtain special instructions before use.  
Do not handle until all safety precautions have been read and understood.  
Do not breathe dust or mist.  
Avoid contact during pregnancy/ while nursing.  
Wash skin thoroughly after handling.  
Do not eat, drink or smoke when using this product.  
Wear protective gloves/ protective clothing/ eye protection/ face protection.

**Response**

IF exposed or concerned: Get medical advice/ attention.

**Storage**

Store locked up.

**Disposal**

Dispose of contents/ container to an approved waste disposal plant.

**Other hazards**

No data available

---

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

---

This product is a mixture.

<b>Component</b>	<b>CASRN</b>	<b>Concentration</b>
Noviflumuron	121451-02-3	0.5%
Cellulose	9004-34-6	67.6%
Octadecanoic acid, calcium salt	1592-23-0	2.0%
Balance	Not available	29.9%

---

**4. FIRST AID MEASURES**

---

**Description of first aid measures****General advice:**

If potential for exposure exists refer to Section 8 for specific personal protective equipment.

**Inhalation:** Move person to fresh air. If person is not breathing, call an emergency responder or ambulance, then give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask etc). Call a poison control center or doctor for treatment advice.

**Skin contact:** 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.

**Eye contact:** Flush eyes with plenty of water; remove contact lenses after the first 1-2 minutes then continue flushing for several minutes. Only mechanical effects expected. If effects occur, consult a physician, preferably an ophthalmologist.

**Ingestion:** No emergency medical treatment necessary.

**Most important symptoms and effects, both acute and delayed:** Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

**Indication of any immediate medical attention and special treatment needed**

**Notes to physician:** No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient. Have the Safety Data Sheet, and if available, the product container or label with you when calling a poison control center or doctor, or going for treatment.

---

## 5. FIREFIGHTING MEASURES

---

**Suitable extinguishing media:** Water. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers.

**Unsuitable extinguishing media:** No data available

**Special hazards arising from the substance or mixture**

**Hazardous combustion products:** During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Carbon monoxide. Carbon dioxide.

**Unusual Fire and Explosion Hazards:** Pneumatic conveying and other mechanical handling operations can generate combustible dust. To reduce the potential for dust explosions, do not permit dust to accumulate. Dense smoke is produced when product burns.

**Advice for firefighters**

**Fire Fighting Procedures:** Keep people away. Isolate fire and deny unnecessary entry. Soak thoroughly with water to cool and prevent re-ignition. Cool surroundings with water to localize fire zone. Hand held dry chemical or carbon dioxide extinguishers may be used for small fires. Contain fire water run-off if possible. Fire water run-off, if not contained, may cause environmental damage. Review the "Accidental Release Measures" and the "Ecological Information" sections of this (M)SDS.

**Special protective equipment for firefighters:** Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers,



boots, and gloves). If protective equipment is not available or not used, fight fire from a protected location or safe distance.

---

## 6. ACCIDENTAL RELEASE MEASURES

---

**Personal precautions, protective equipment and emergency procedures:** Spilled material may cause a slipping hazard. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

**Environmental precautions:** Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

**Methods and materials for containment and cleaning up:** Contain spilled material if possible. Small spills: Sweep up. Collect in suitable and properly labeled containers. Large spills: Contact Dow AgroSciences for clean-up assistance.

---

## 7. HANDLING AND STORAGE

---

**Precautions for safe handling:** Keep out of reach of children. Do not swallow. Avoid breathing dust or mist. Avoid contact with eyes, skin, and clothing. Wash thoroughly after handling. Keep container closed. Use with adequate ventilation. Good housekeeping and controlling of dusts are necessary for safe handling of product.

**Conditions for safe storage:** Store in a dry place. Store in original container. Do not store near food, foodstuffs, drugs or potable water supplies.

---

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

---

### Control parameters

If exposure limits exist, they are listed below. If no exposure limits are displayed, then no values are applicable.

Component	Regulation	Type of listing	Value/Notation
Noviflumuron	Dow IHG	TWA	0.1 mg/m <sup>3</sup>
Cellulose	ACGIH	TWA	10 mg/m <sup>3</sup>
	OSHA Z-1	TWA total dust	15 mg/m <sup>3</sup>
	OSHA Z-1	TWA respirable fraction	5 mg/m <sup>3</sup>
	ACGIH	TWA	10 mg/m <sup>3</sup>
Octadecanoic acid, calcium salt	ACGIH	TWA	10 mg/m <sup>3</sup>

RECOMMENDATIONS IN THIS SECTION ARE FOR MANUFACTURING, COMMERCIAL BLENDING AND PACKAGING WORKERS. APPLICATORS AND HANDLERS SHOULD SEE THE PRODUCT LABEL FOR PROPER PERSONAL PROTECTIVE EQUIPMENT AND CLOTHING.

### Exposure controls

**Engineering controls:** Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure

limit requirements or guidelines, general ventilation should be sufficient for most operations. Local exhaust ventilation may be necessary for some operations.

### Individual protection measures

**Eye/face protection:** Use safety glasses (with side shields). If there is a potential for exposure to particles which could cause eye discomfort, wear chemical goggles.

#### Skin protection

**Hand protection:** Use gloves chemically resistant to this material when prolonged or frequently repeated contact could occur. Examples of preferred glove barrier materials include: Polyvinyl chloride ("PVC" or "vinyl"). Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

**Other protection:** Wear clean, body-covering clothing.

**Respiratory protection:** Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. For most conditions, no respiratory protection should be needed; however, in dusty atmospheres, use an approved particulate respirator.

The following should be effective types of air-purifying respirators: Particulate filter.

---

## 9. PHYSICAL AND CHEMICAL PROPERTIES

---

### Appearance

Physical state	Granules.
Color	Tan
Odor	Sweet
Odor Threshold	No data available
pH	6.36 1% pH Electrode
Melting point/range	No data available
Freezing point	No data available
Boiling point (760 mmHg)	Not applicable
Flash point	<b>closed cup</b> Not applicable
Evaporation Rate (Butyl Acetate = 1)	No data available
Flammability (solid, gas)	No data available
Lower explosion limit	No data available
Upper explosion limit	No data available
Vapor Pressure	No data available
Relative Vapor Density (air = 1)	No data available
Relative Density (water = 1)	No data available

<b>Water solubility</b>	No data available
<b>Partition coefficient: n-octanol/water</b>	No data available
<b>Auto-ignition temperature</b>	No data available
<b>Decomposition temperature</b>	No data available
<b>Kinematic Viscosity</b>	No data available
<b>Explosive properties</b>	No
<b>Oxidizing properties</b>	No significant increase (>5C) in temperature.
<b>Liquid Density</b>	Not applicable
<b>Bulk density</b>	0.54 g/ml
<b>Molecular weight</b>	No data available

NOTE: The physical data presented above are typical values and should not be construed as a specification.

---

## 10. STABILITY AND REACTIVITY

---

**Reactivity:** No data available

**Chemical stability:** Thermally stable at typical use temperatures.

**Possibility of hazardous reactions:** Polymerization will not occur.

**Conditions to avoid:** Some components of this product can decompose at elevated temperatures.

**Incompatible materials:** Avoid contact with: Strong oxidizers.

**Hazardous decomposition products:** Decomposition products depend upon temperature, air supply and the presence of other materials.

---

## 11. TOXICOLOGICAL INFORMATION

---

*Toxicological information appears in this section when such data is available.*

### Acute toxicity

#### Acute oral toxicity

Very low toxicity if swallowed. Harmful effects not anticipated from swallowing small amounts.

As product: Single dose oral LD50 has not been determined.  
LD50, Rat, > 5,000 mg/kg Estimated.

#### Acute dermal toxicity

Prolonged skin contact is unlikely to result in absorption of harmful amounts.

As product: The dermal LD50 has not been determined.  
LD50, Rabbit, > 5,000 mg/kg Estimated.

**Acute inhalation toxicity**

No adverse effects are anticipated from single exposure to dust. Based on the available data, respiratory irritation was not observed.

As product: The LC50 has not been determined.

**Skin corrosion/irritation**

Brief contact is essentially nonirritating to skin.

**Serious eye damage/eye irritation**

Solid or dust may cause irritation or corneal injury due to mechanical action.

**Sensitization**

For the active ingredient(s):

Did not cause allergic skin reactions when tested in guinea pigs.

For respiratory sensitization:

No relevant data found.

**Specific Target Organ Systemic Toxicity (Single Exposure)**

Evaluation of available data suggests that this material is not an STOT-SE toxicant.

**Specific Target Organ Systemic Toxicity (Repeated Exposure)**

For the active ingredient(s):

Based on available data, repeated exposures are not anticipated to cause significant adverse effects.

For the major component(s):

Based on available data, repeated exposures are not anticipated to cause significant adverse effects.

**Carcinogenicity**

For the active ingredient(s): Has caused cancer in laboratory animals. Dose levels producing these effects were many times higher than any dose levels expected from exposure due to use.

For the major component(s): Did not cause cancer in laboratory animals.

**Teratogenicity**

For the active ingredient(s): Did not cause birth defects or any other fetal effects in laboratory animals.

For the major component(s): Did not cause birth defects or any other fetal effects in laboratory animals.

**Reproductive toxicity**

For the active ingredient(s): In animal studies, has been shown to interfere with reproduction. In animal studies, has been shown to interfere with fertility.

For the major component(s): In animal studies, cellulose has been shown to interfere with fertility and reproduction as a result of nutritional deficiencies associated with extremely high dietary concentrations of cellulose.

**Mutagenicity**

For the active ingredient(s): In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.

For the major component(s): In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.

**Aspiration Hazard**

Based on physical properties, not likely to be an aspiration hazard.

**COMPONENTS INFLUENCING TOXICOLOGY:****Noviflumuron****Acute inhalation toxicity**

No adverse effects are anticipated from single exposure to dust. Based on the available data, respiratory irritation was not observed.

LC50, Rat, male and female, 4 Hour, dust/mist, > 5.24 mg/l No deaths occurred at this concentration.

**Cellulose****Acute inhalation toxicity**

The LC50 has not been determined.

**Octadecanoic acid, calcium salt****Acute inhalation toxicity**

Dust may cause irritation to upper respiratory tract (nose and throat).

The LC50 has not been determined.

**Balance****Acute inhalation toxicity**

The LC50 has not been determined.

---

---

**12. ECOLOGICAL INFORMATION**

---

*Ecotoxicological information appears in this section when such data is available.*

**Toxicity****Noviflumuron****Acute toxicity to fish**

Material is very highly toxic to aquatic organisms on an acute basis (LC50/EC50 <0.1 mg/L in the most sensitive species).

LC50, *Lepomis macrochirus* (Bluegill sunfish), semi-static test, 96 Hour, > 2.0 mg/l, OECD Test Guideline 203 or Equivalent

LC50, *Oncorhynchus mykiss* (rainbow trout), semi-static test, 96 Hour, > 2.00 mg/l, OECD Test Guideline 203 or Equivalent

**Acute toxicity to aquatic invertebrates**

EC50, *Daphnia magna* (Water flea), flow-through test, 48 Hour, 0.0003 mg/l, OECD Test Guideline 202 or Equivalent

**Acute toxicity to algae/aquatic plants**

ErC50, Pseudokirchneriella subcapitata (green algae), 72 Hour, Growth rate inhibition, > 0.75 mg/l

**Toxicity to bacteria**

EC50, activated sludge, 3 Hour, > 1.9 mg/l, OECD 209 Test

**Toxicity to Above Ground Organisms**

Material is practically non-toxic to birds on an acute basis (LD50 > 2000 mg/kg).  
Material is slightly toxic to birds on a dietary basis (LC50 between 1001 and 5000 ppm).  
oral LD50, Colinus virginianus (Bobwhite quail), 14 d, > 2,000 mg/kg  
dietary LC50, Colinus virginianus (Bobwhite quail), 10 d, 4,100 mg/kg  
oral LD50, Apis mellifera (bees), 48 Hour, > 100micrograms/bee  
contact LD50, Apis mellifera (bees), 48 Hour, > 100micrograms/bee

**Toxicity to soil-dwelling organisms**

LC50, Eisenia fetida (earthworms), 14 d, > 10,000 mg/kg

**Cellulose**

**Acute toxicity to fish**

Material is practically non-toxic to aquatic organisms on an acute basis  
(LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).  
LC50, Fish, 96 Hour, > 100 mg/l

**Acute toxicity to algae/aquatic plants**

EC50, Algae, 96 Hour, Growth rate inhibition, > 100 mg/l

**Toxicity to bacteria**

LC50, Bacteria, > 100 mg/l

**Octadecanoic acid, calcium salt**

**Acute toxicity to fish**

The LC50 value is above the water solubility.  
The EC50 value is above the water solubility.  
LC50, Oryzias latipes (Japanese medaka), 96 Hour, estimated > 100 mg/l, OECD Test Guideline 203 or Equivalent

**Acute toxicity to aquatic invertebrates**

EC50, Daphnia magna (Water flea), 48 Hour, estimated > 100 mg/l, OECD Test Guideline 202

**Acute toxicity to algae/aquatic plants**

EyC50, Pseudokirchneriella subcapitata (algae), 72 Hour, Cell yield inhibition, estimated > 100 mg/l, OECD Test Guideline 201  
ErC50, Pseudokirchneriella subcapitata (algae), 72 Hour, Growth rate, estimated > 100 mg/l, OECD Test Guideline 201

**Balance**

**Acute toxicity to fish**

No relevant data found.

**Persistence and degradability**

**Noviflumuron**

**Biodegradability:** No relevant information found.

**Theoretical Oxygen Demand:** 1.03 mg/mg

**Photodegradation**

**Atmospheric half-life:** 14.34 Hour

**Method:** Estimated.

**Cellulose**

**Biodegradability:** Biodegradation rate may increase in soil and/or water with acclimation.

**Theoretical Oxygen Demand:** 1.18 mg/mg

**Octadecanoic acid, calcium salt**

**Biodegradability:** Material is expected to be readily biodegradable.

**Theoretical Oxygen Demand:** 2.74 mg/mg

**Balance**

**Biodegradability:** No relevant data found.

**Bioaccumulative potential**

**Noviflumuron**

**Bioaccumulation:** Bioconcentration potential is high (BCF > 3000 or Log Pow between 5 and 7).

**Partition coefficient: n-octanol/water(log Pow):** 4.94 Estimated.

**Cellulose**

**Bioaccumulation:** No bioconcentration is expected because of the relatively high molecular weight (MW greater than 1000).

**Octadecanoic acid, calcium salt**

**Bioaccumulation:** No data available for this product.

**Balance**

**Bioaccumulation:** No relevant data found.

**Mobility in soil**

**Noviflumuron**

Expected to be relatively immobile in soil (Koc > 5000).

**Cellulose**

No data available.

**Octadecanoic acid, calcium salt**

No data available.

**Balance**

No relevant data found.

---

### 13. DISPOSAL CONSIDERATIONS

---

**Disposal methods:** If wastes and/or containers cannot be disposed of according to the product label directions, disposal of this material must be in accordance with your local or area regulatory authorities. This information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. If the material as supplied becomes a waste, follow all applicable regional, national and local laws.

---

### 14. TRANSPORT INFORMATION

---

#### DOT

Not regulated for transport

#### Classification for SEA transport (IMO-IMDG):

<b>Proper shipping name</b>	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.(Noviflumuron)
<b>UN number</b>	UN 3077
<b>Class</b>	9
<b>Packing group</b>	III
<b>Marine pollutant</b>	Noviflumuron
<b>Transport in bulk according to Annex I or II of MARPOL 73/78 and the IBC or IGC Code</b>	Consult IMO regulations before transporting ocean bulk

#### Classification for AIR transport (IATA/ICAO):

<b>Proper shipping name</b>	Environmentally hazardous substance, solid, n.o.s.(Noviflumuron)
<b>UN number</b>	UN 3077
<b>Class</b>	9
<b>Packing group</b>	III

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.



---

## 15. REGULATORY INFORMATION

---

### Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312

Reproductive toxicity

### Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

### Pennsylvania Worker and Community Right-To-Know Act:

The following chemicals are listed because of the additional requirements of Pennsylvania law:

Components	CASRN
Cellulose	9004-34-6

### California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986)

This product contains no listed substances known to the State of California to cause cancer, birth defects or other reproductive harm, at levels which would require a warning under the statute.

### United States TSCA Inventory (TSCA)

This product contains chemical substance(s) exempt from U.S. EPA TSCA Inventory requirements. It is regulated as a pesticide subject to Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) requirements.

### Federal Insecticide, Fungicide and Rodenticide Act

EPA Registration Number: 62719-608

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

---

## 16. OTHER INFORMATION

---

### Hazard Rating System

#### NFPA

	Health	Flammability	Instability
<b>  </b>	0	1	0

### Revision

Identification Number: 323156 / A211 / Issue Date: 03/19/2018 / Version: 4.0

DAS Code: GF-2024

Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

**Legend**

ACGIH	USA. ACGIH Threshold Limit Values (TLV)
Dow IHG	Dow Industrial Hygiene Guideline
OSHA Z-1	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
TWA	Time Weighted Average (TWA):

**Full text of other abbreviations**

AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

**Information Source and References**

This SDS is prepared by Product Regulatory Services and Hazard Communications Groups from information supplied by internal references within our company.

DOW AGROSCIENCES LLC urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with

all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.

US

# Specimen Label

**Recruit IV AG termite bait must be used in conjunction with a service provided by a pest management professional licensed by the state to apply termite control products.**



**Dow AgroSciences**



®Trademark of The Dow Chemical Company ("Dow") or an affiliated company of Dow

**A termite bait for use as an above-ground delivery system for elimination of subterranean termite colonies**

Active Ingredient: noviflumuron..... 0.5%  
Other Ingredients..... 99.5%  
Total..... 100.0%

**Do not tamper with bait material.**

EPA Reg. No. 62719-454

## Environmental Hazards

This product is highly toxic to aquatic invertebrates and possibly to fish. Do not allow the bait or its noviflumuron contents to be washed into a body of water containing aquatic life, such as a pond or stream. Do not use, handle or tamper with the bait container in a manner inconsistent with this label.

## Directions for Use

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

Read all Directions for Use carefully before applying.

## Storage and Disposal

Do not contaminate water, food, or feed by storage or disposal.

**Pesticide Storage:** Store in original container in a dry storage area.

**Pesticide Disposal:** Product not disposed of by use according to label directions should be wrapped in paper and placed in a trash can.

**Container Handling:** Do not break open, cut into or remove protective wrapper from product until ready for use.

## Product Information

Recruit® IV AG termite bait is an above-ground station and delivery system for the Sentricon® System and may be used to eliminate subterranean termite colonies. Recruit IV AG contains the insect growth regulator (IGR) noviflumuron that prevents successful molting and development of subterranean termites. This disruption of development causes a decline of the termite colony to the point where the colony can no longer sustain itself and is eliminated.

Recruit IV AG is used against structurally damaging species of subterranean termites, including *Coptotermes*, *Reticulitermes*, and *Heterotermes* spp. Target sites for use of this product include interior and exterior surfaces of buildings and crawl spaces, fences, utility poles, decking, landscape decorations, trees, or other features that could be damaged by termite feeding and foraging activity.

When used alone as a control system, stations with Recruit IV AG must be inspected on at least a quarterly basis so that bait remains available. Recruit IV AG may also be used as a spot treatment without a specified

inspection interval if used in conjunction with the in-ground installation of the Sentricon® System.

If using the station hard cover, access to additional bait matrix at a specific target site may be provided by "stacking" stations with Recruit IV AG one on top of another. Stations may be stacked during the initial installation or during a subsequent inspection if one-third to one-half of the bait matrix has been consumed and active feeding continues. Details of this process are provided in the Installation of Supplemental Stations with Recruit IV AG section of this label. When feeding in the stations has stopped, the stations with Recruit IV AG can be removed. Do not re-use Recruit IV AG.

When Recruit IV AG, is used in conjunction with other termite control methods, including soil barrier treatments, an in-ground installation of Sentricon® must be made. However, applications and treatments with other termite control methods in the areas through which termites must pass to reach an installation of Recruit IV AG will prevent feeding and should be delayed until the entire baiting process is completed.

## Food Handling Establishments

Recruit IV AG may be installed in both food and non-food areas of all types of food handling establishments, i.e., food service, food processing, and food manufacturing establishments. This includes restaurants, grocery stores, bakeries, bottling plants, canneries, meat and poultry processing plants, and grain mills.

## Inspection of Structures

Thorough inspection of the site to be protected is required to determine if subterranean termites are present and accessible. Treatment sites may include the interior and exterior surfaces of buildings and crawl spaces, fences, utility poles, decking, landscape decorations, trees, and other features that could be damaged by termite foraging and feeding activity.

Recruit IV AG is effective only when applied to areas where termites are active and direct access to the station is possible. Installation of Recruit IV AG does not attract termites. Areas suitable for placement of Recruit IV AG include interior and exterior surfaces where:

- Live termites are visually observed in mud tubes or subsurface galleries;
- Feeding activity is detected using an acoustic emission detector or other detection technology; or
- Termite mud tubes, feeding damage, or emergence holes have recently appeared.

The surface area for installation of Recruit IV AG should be large enough to allow the station to be firmly attached to the structure.

## Installation of Recruit IV AG

The flexible station with Recruit IV AG consists of a flexible package containing the bait matrix and two cover options, either a hard cover or flexible cover. The cover allows for inspection of the bait station after installation. The flexible cover allows the station to fit in and around corners, over ornate molding and into smaller areas than the hard cover. The hard cover provides additional protection of the flexible station when needed. The hard cover option also allows for stations to be easily stacked and contains breakout points in the mounting surfaces surrounding the access window which may be removed to avoid damaging mud tubes or to provide better contact with the mounting surface.

Termites may abandon a station that allows light, air movement, drying of the matrix, or invasion by ants or other predators. Proper attachment and sealing of the station housing to the structure is critical.

## Bait and Surface Preparation

1. Inspect the site to which the station with Recruit IV AG will be attached to determine if the surface is suitable for attachment and best cover option.
2. Once suitable areas for placement are identified, some surface preparation may be necessary before installation of Recruit IV AG. In areas where there are no obvious subsurface mud tubes, feeding damage, or emergence holes, but termite feeding activity is detected, holes approximately 3/8-inch in diameter may be drilled to intercept feeding galleries within the area to be covered by the bait station. Be careful not to scrape off or disturb surface mud tubes during the drilling process
3. Moisten the bait matrix before securing the station in place. To moisten, open the flexible station and add sufficient water or a sugar-containing sports performance drink to thoroughly moisten the bait matrix. Knead the matrix contents until the wetting agent has been fully absorbed. Once the wetting agent is absorbed, expose the bait matrix by creating access points for entry of termites in the flexible station. Regardless of whether installing the flexible station directly on to a target site or into the hard cover placed over a target site, the opened side with access points must be exposed and in contact with the mounting surface where termite activity is present.

### Installing the Flexible Station with the Flexible Cover

1. Break the mud tube or if necessary, drill 3/8" hole to intercept feeding galleries.
2. Affix the flexible station to the target site so that it sits over the opening in the mud tube or area of termite activity. Take special care not to crush or block the mud tube from entering the station. Suitable attachment materials include screws, tape, non-volatile adhesives, latex-based caulk, or other appropriate materials. **(Note:** Avoid use of adhesives or caulking materials with volatile solvents that can temporarily repel termites.)
3. Place the flexible cover over the flexible station so that the station is completely covered and affix to site. As when affixing the station, care should be taken to not crush or block the mud tube from entering the station when affixing the cover.

### Installing the Flexible Station with the Hard Cover

1. Break the mud tube or if necessary, drill 3/8" hole to intercept feeding galleries.
2. Affix the flexible station to the target site so that it sits over the opening in the mud tube or area of termite activity. Take special care not to crush or block the mud tube from entering the station. Suitable attachment materials include screws, tape, non-volatile adhesives, latex-based caulk, or other appropriate materials. **(Note:** Avoid use of adhesives or caulking materials with volatile solvents that can temporarily repel termites.)
3. Align the back open side of the hard cover so that it fits over the installed flexible station. Ensure the entire flexible station is covered and secure the hard cover to the surface.
  - a. Appropriate use of breakout points where surface mud tubes intersect the edges of the hard cover will allow secure attachment without crushing the mud tubes.
  - b. Securely attach the hard cover to the structure. Suitable attachment materials include screws, tape, non-volatile adhesives, latex-based caulk, or other appropriate materials. **(Note:** Avoid use of adhesives or caulking materials with volatile solvents that can temporarily repel termites.) Apply adhesive caulking material to the surfaces of the hard cover which contact the mounting surface, but do so only after the final mounting position has been determined and, if necessary, breakout points have been removed. The method of attachment should not interfere with removing the cover to inspect the bait or add a supplementary station.
4. Alternatively, the hard cover may be installed first as in step 3 and the flexible station inserted after installation.
  - a. When mounting the hard cover to surfaces containing surface mud tubes, a segment of each tube within the area to be covered should be removed as described in Step 1. This opening provides termites with direct access to the bait when inserted into the cover.

### Inspection of Recruit IV AG

To inspect Recruit IV AG, expose the bait matrix. If termites are active in the station and the matrix appears to be at least 1/3 to 1/2 consumed, a new station should be installed or a supplemental station should be added. If the bait matrix is degraded, it should be removed and replaced with a new station.

If the entire contents of the bait station are consumed before replenishment, termites may forage elsewhere. When used alone as a control system, stations with Recruit IV AG must be inspected on at least a quarterly basis. During inspection, check bait stations for secure attachment to the mounting surface and reinforce if necessary.

### Installation of Supplemental Stations with Recruit IV AG

Stations installed with the Recruit IV AG hard cover can accommodate the addition of a supplemental station by "stacking" a new station and hard cover on top of an existing one. Stacking allows uninterrupted feeding without disturbing the termites in the original station. Moisture may be added to the supplemental station before installation as described in the Installation of Recruit IV AG section of this label.

- Remove the top cover from the existing hard cover. After moistening as noted in Step 2 of Bait Preparation, expose bait matrix so termites can readily access the bait in the stacked station.
- Affix the new station and hardcover into place on top of the existing station and hard cover.

Up to two stations (original plus 1) may be stacked at one location. If it is necessary to continue baiting after two stations have been stacked, remove the second station, leaving the original station in place and add the new station on top of it.

Inspect supplemental stations as described in the Inspection of Recruit IV AG section of this label.

---

### Terms and Conditions of Use

---

If terms of the following Warranty Disclaimer, Inherent Risks of Use, and Limitation of Remedies are not acceptable, return unopened package at once to the seller for a full refund of purchase price paid. Otherwise, to the extent permitted by law, use by the buyer or any other user constitutes acceptance of the terms under Warranty Disclaimer, Inherent Risks of Use and Limitations of Remedies.

---

### Warranty Disclaimer

---

Dow AgroSciences warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated on the label when used in strict accordance with the directions, subject to the inherent risks set forth below. TO THE EXTENT PERMITTED BY LAW, Dow AgroSciences MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER EXPRESS OR IMPLIED WARRANTY.

---

### Inherent Risks of Use

---

It is impossible to eliminate all risks associated with use of this product. Lack of performance or other unintended consequences may result because of such factors as use of the product contrary to the label instructions abnormal conditions (such as excessive rainfall, drought, etc.), presence of other materials, the manner of application, or other factors, all of which are beyond the control of Dow AgroSciences or the seller. To the extent permitted by law, all such risks shall be assumed by the user.

---

### Limitation of Remedies

---

To the extent permitted by law, the exclusive remedy for losses or damages resulting from the use of this product (including claims based on contract, negligence, strict liability, or other legal theories), shall be limited to, at Dow AgroSciences' election, one of the following:

1. Refund of purchase price paid by buyer or user for product bought, or
2. Replacement of amount of product used.

To the extent permitted by law, Dow AgroSciences shall not be liable for losses or damages resulting from handling or use of this product unless Dow AgroSciences is promptly notified of such loss or damage in writing. To the extent permitted by law, in no case shall Dow AgroSciences be liable for consequential or incidental damages or losses.

The terms of the Warranty Disclaimer, Inherent Risks of Use, and Limitation of Remedies cannot be varied by any written or verbal statements or agreements. No employee or sales agent of Dow AgroSciences or the seller is authorized to vary or exceed the terms of the Warranty Disclaimer or Limitation of Remedies in any manner.

®Trademark of The Dow Chemical Company ("Dow") or an affiliated company of Dow

**Produced for**  
**Dow AgroSciences LLC**  
**9330 Zionsville Road**  
**Indianapolis, IN 46268**

Label Code: D02-003-007  
Replaces Label: D02-003-006  
LOES Number: 010-02104

EPA accepted 04/09/14

### Revisions:

1. Updates to Product Information, Installation of Recruit IV AG, and Inspection of Recruit IV AG sections.

# SAFETY DATA SHEET

## DOW AGROSCIENCES LLC

**Product name:** RECRUIT™ IV AG Termite Bait

**Issue Date:** 05/15/2015

**Print Date:** 06/03/2015

DOW AGROSCIENCES LLC encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

---

## 1. IDENTIFICATION

---

**Product name:** RECRUIT™ IV AG Termite Bait

**Recommended use of the chemical and restrictions on use**

**Identified uses:** End use insecticide product

### COMPANY IDENTIFICATION

DOW AGROSCIENCES LLC  
9330 ZIONSVILLE RD  
INDIANAPOLIS IN 46268-1053  
UNITED STATES

**Customer Information Number:**

800-992-5994

[info@dow.com](mailto:info@dow.com)

### EMERGENCY TELEPHONE NUMBER

**24-Hour Emergency Contact:** 800-992-5994

**Local Emergency Contact:** 352-323-3500

---

## 2. HAZARDS IDENTIFICATION

---

### Hazard classification

This material is hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29CFR 1910.1200.

Reproductive toxicity - Category 2

Effects on or via lactation

### Label elements

**Hazard pictograms**



Signal word: **WARNING!**

**Hazards**

Suspected of damaging fertility or the unborn child.  
May cause harm to breast-fed children.

**Precautionary statements****Prevention**

Obtain special instructions before use.  
Do not handle until all safety precautions have been read and understood.  
Do not breathe dust or mist.  
Avoid contact during pregnancy/ while nursing.  
Wash skin thoroughly after handling.  
Do not eat, drink or smoke when using this product.  
Use personal protective equipment as required.

**Response**

IF exposed or concerned: Get medical advice/ attention.

**Storage**

Store locked up.

**Disposal**

Dispose of contents/ container to an approved waste disposal plant.

**Other hazards**

no data available

---

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

---

**Chemical nature:** Mixture

This product is a mixture.

<b>Component</b>	<b>CASRN</b>	<b>Concentration</b>
Noviflumuron	121451-02-3	0.5%
Cellulose	9004-34-6	99.0%
Balance	Not available	0.5%

---

**4. FIRST AID MEASURES**

---

**Description of first aid measures**

**General advice:** If potential for exposure exists refer to Section 8 for specific personal protective equipment.

**Inhalation:** No emergency medical treatment necessary.

**Skin contact:** 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.

**Eye contact:** Flush eyes with plenty of water; remove contact lenses after the first 1-2 minutes then continue flushing for several minutes. Only mechanical effects expected. If effects occur, consult a physician, preferably an ophthalmologist.

**Ingestion:** No emergency medical treatment necessary.

**Most important symptoms and effects, both acute and delayed:** Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

**Indication of any immediate medical attention and special treatment needed**

**Notes to physician:** No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient. Have the Safety Data Sheet, and if available, the product container or label with you when calling a poison control center or doctor, or going for treatment.

---

## 5. FIREFIGHTING MEASURES

---

**Suitable extinguishing media:** Water. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers.

**Unsuitable extinguishing media:** no data available

**Special hazards arising from the substance or mixture**

**Hazardous combustion products:** During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Nitrogen oxides. Carbon monoxide. Carbon dioxide.

**Unusual Fire and Explosion Hazards:** None known.

**Advice for firefighters**

**Fire Fighting Procedures:** Keep people away. Isolate fire and deny unnecessary entry. Soak thoroughly with water to cool and prevent re-ignition. Cool surroundings with water to localize fire zone. Contain fire water run-off if possible. Fire water run-off, if not contained, may cause environmental damage. Review the "Accidental Release Measures" and the "Ecological Information" sections of this (M)SDS.

**Special protective equipment for firefighters:** Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). If protective equipment is not available or not used, fight fire from a protected location or safe distance.

---

## 6. ACCIDENTAL RELEASE MEASURES

---

**Personal precautions, protective equipment and emergency procedures:** Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.



**Environmental precautions:** Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information. Spills or discharge to natural waterways is likely to kill aquatic organisms.

**Methods and materials for containment and cleaning up:** Contain spilled material if possible. Small spills: Sweep up. Collect in suitable and properly labeled containers. Large spills: Contact Dow AgroSciences for clean-up assistance. See Section 13, Disposal Considerations, for additional information.

---

## 7. HANDLING AND STORAGE

---

**Precautions for safe handling:** Keep out of reach of children. Do not swallow. Avoid contact with eyes, skin, and clothing. Avoid breathing dust or mist. Wash thoroughly after handling. Use with adequate ventilation. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

**Conditions for safe storage:** Store in a dry place. Store in original container. Do not store near food, foodstuffs, drugs or potable water supplies.

---

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

---

### Control parameters

Exposure limits are listed below, if they exist.

Component	Regulation	Type of listing	Value/Notation
Noviflumuron	Dow IHG	TWA	0.1 mg/m <sup>3</sup>
Cellulose	ACGIH	TWA	10 mg/m <sup>3</sup>
	OSHA Z-1	TWA total dust	15 mg/m <sup>3</sup>
	OSHA Z-1	TWA respirable fraction	5 mg/m <sup>3</sup>

RECOMMENDATIONS IN THIS SECTION ARE FOR MANUFACTURING, COMMERCIAL BLENDING AND PACKAGING WORKERS. APPLICATORS AND HANDLERS SHOULD SEE THE PRODUCT LABEL FOR PROPER PERSONAL PROTECTIVE EQUIPMENT AND CLOTHING.

### Exposure controls

**Engineering controls:** Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations.

### Individual protection measures

**Eye/face protection:** Use safety glasses (with side shields). If there is a potential for exposure to particles which could cause eye discomfort, wear chemical goggles.

#### Skin protection

**Hand protection:** Use gloves chemically resistant to this material when prolonged or frequently repeated contact could occur. Examples of preferred glove barrier materials include: Polyvinyl chloride ("PVC" or "vinyl"). Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

**Other protection:** Wear clean, body-covering clothing.

**Respiratory protection:** Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. For most conditions no respiratory protection should be needed; however, if discomfort is experienced, use an approved air-purifying respirator.

The following should be effective types of air-purifying respirators: Particulate filter.

---

## 9. PHYSICAL AND CHEMICAL PROPERTIES

---

### Appearance

<b>Physical state</b>	Granules.
<b>Color</b>	White
<b>Odor</b>	Odorless
<b>Odor Threshold</b>	no data available
<b>pH</b>	Not applicable
<b>Melting point/range</b>	No test data available
<b>Freezing point</b>	Not applicable
<b>Boiling point (760 mmHg)</b>	Not applicable
<b>Flash point</b>	<b>closed cup</b> Not applicable
<b>Evaporation Rate (Butyl Acetate = 1)</b>	no data available
<b>Flammability (solid, gas)</b>	no data available
<b>Lower explosion limit</b>	Not applicable
<b>Upper explosion limit</b>	Not applicable
<b>Vapor Pressure</b>	Not applicable
<b>Relative Vapor Density (air = 1)</b>	Not applicable
<b>Relative Density (water = 1)</b>	No test data available
<b>Water solubility</b>	No test data available
<b>Partition coefficient: n-octanol/water</b>	no data available
<b>Auto-ignition temperature</b>	Not applicable
<b>Decomposition temperature</b>	No test data available
<b>Kinematic Viscosity</b>	no data available
<b>Explosive properties</b>	no data available
<b>Oxidizing properties</b>	no data available
<b>Molecular weight</b>	no data available

NOTE: The physical data presented above are typical values and should not be construed as a specification.

---

---

## 10. STABILITY AND REACTIVITY

---

**Reactivity:** no data available

**Chemical stability:** Stable at ambient temperatures.

**Possibility of hazardous reactions:** Polymerization will not occur.

**Conditions to avoid:** Active ingredient decomposes at elevated temperatures.

**Incompatible materials:** Avoid contact with: Strong bases. Strong oxidizers.

**Hazardous decomposition products:** Decomposition products depend upon temperature, air supply and the presence of other materials. Decomposition products can include and are not limited to: Carbon monoxide. Carbon dioxide. Hydrogen halides. Nitrogen oxides.

---

---

## 11. TOXICOLOGICAL INFORMATION

---

*Toxicological information appears in this section when such data is available.*

### Acute toxicity

#### Acute oral toxicity

Very low toxicity if swallowed. Harmful effects not anticipated from swallowing small amounts.

As product: Single dose oral LD50 has not been determined.  
LD50, Rat, > 3,160 mg/kg Estimated.

#### Acute dermal toxicity

Prolonged skin contact is unlikely to result in absorption of harmful amounts.

The dermal LD50 has not been determined. For the active ingredient(s):  
LD50, Rabbit, > 5,000 mg/kg Estimated.

#### Acute inhalation toxicity

As product: The LC50 has not been determined.

### Skin corrosion/irritation

Brief contact is essentially nonirritating to skin.

### Serious eye damage/eye irritation

Solid or dust may cause irritation or corneal injury due to mechanical action.

### Sensitization

For the active ingredient(s):

Did not cause allergic skin reactions when tested in guinea pigs.

For the major component(s):

No relevant data found.

For respiratory sensitization:

No relevant data found.

**Specific Target Organ Systemic Toxicity (Single Exposure)**

Available data are inadequate to determine single exposure specific target organ toxicity.

**Specific Target Organ Systemic Toxicity (Repeated Exposure)**

For the active ingredient(s):

For the major component(s):

Based on available data, repeated exposures are not anticipated to cause significant adverse effects.

**Carcinogenicity**

For the active ingredient(s): Has caused cancer in laboratory animals. Dose levels producing these effects were many times higher than any dose levels expected from exposure due to use.

For the major component(s): Did not cause cancer in laboratory animals.

**Teratogenicity**

For the active ingredient(s): For the major component(s): Did not cause birth defects or any other fetal effects in laboratory animals.

**Reproductive toxicity**

In animal studies, cellulose has been shown to interfere with fertility and reproduction as a result of nutritional deficiencies associated with extremely high dietary concentrations of cellulose. For the active ingredient(s): In animal studies, has been shown to interfere with reproduction. In animal studies, has been shown to interfere with fertility.

**Mutagenicity**

Similar cellulose were negative in both in vitro and animal genetic toxicity studies. For the active ingredient(s): In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.

**Aspiration Hazard**

Based on physical properties, not likely to be an aspiration hazard.

**COMPONENTS INFLUENCING TOXICOLOGY:**

**Noviflumuron**

**Acute inhalation toxicity**

No adverse effects are anticipated from single exposure to dust. Based on the available data, respiratory irritation was not observed.

LC50, Rat, male and female, 4 Hour, dust/mist, > 5.24 mg/l No deaths occurred at this concentration.

**Cellulose**

**Acute inhalation toxicity**

No adverse effects are anticipated from single exposure to dust.

The LC50 has not been determined.

**Balance**

**Acute inhalation toxicity**

The LC50 has not been determined.

---

## 12. ECOLOGICAL INFORMATION

---

*Ecotoxicological information appears in this section when such data is available.*

### Toxicity

#### Noviflumuron

##### **Acute toxicity to fish**

Material is very highly toxic to aquatic organisms on an acute basis (LC50/EC50 <0.1 mg/L in the most sensitive species).

LC50, Lepomis macrochirus (Bluegill sunfish), semi-static test, 96 Hour, > 2.0 mg/l, OECD Test Guideline 203 or Equivalent

LC50, Oncorhynchus mykiss (rainbow trout), semi-static test, 96 Hour, > 2.00 mg/l, OECD Test Guideline 203 or Equivalent

##### **Acute toxicity to aquatic invertebrates**

EC50, Daphnia magna (Water flea), flow-through test, 48 Hour, 0.0003 mg/l, OECD Test Guideline 202 or Equivalent

##### **Acute toxicity to algae/aquatic plants**

ErC50, Pseudokirchneriella subcapitata (green algae), 72 Hour, Growth rate inhibition, > 0.75 mg/l

##### **Toxicity to bacteria**

EC50, activated sludge, 3 Hour, > 1.9 mg/l, OECD 209 Test

##### **Toxicity to Above Ground Organisms**

Material is practically non-toxic to birds on an acute basis (LD50 > 2000 mg/kg).

Material is slightly toxic to birds on a dietary basis (LC50 between 1001 and 5000 ppm).

oral LD50, Colinus virginianus (Bobwhite quail), 14 d, > 2,000 mg/kg

dietary LC50, Colinus virginianus (Bobwhite quail), 10 d, 4,100 mg/kg

oral LD50, Apis mellifera (bees), 48 Hour, > 100micrograms/bee

contact LD50, Apis mellifera (bees), 48 Hour, > 100micrograms/bee

##### **Toxicity to soil-dwelling organisms**

LC50, Eisenia fetida (earthworms), 14 d, > 10,000 mg/kg

#### Cellulose

##### **Acute toxicity to fish**

Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).

LC50, Fish., 96 Hour, > 100 mg/l

##### **Acute toxicity to algae/aquatic plants**

EC50, Algae, 96 Hour, Growth rate inhibition, > 100 mg/l

##### **Toxicity to bacteria**

LC50, Bacteria, > 100 mg/l

#### Balance

##### **Acute toxicity to fish**

No relevant data found.

**Persistence and degradability**

**Noviflumuron**

**Biodegradability:** No relevant information found.

**Theoretical Oxygen Demand:** 1.03 mg/g

**Photodegradation**

**Atmospheric half-life:** 14.34 Hour

**Method:** Estimated.

**Cellulose**

**Biodegradability:** Biodegradation rate may increase in soil and/or water with acclimation.

**Theoretical Oxygen Demand:** 1.18 mg/mg

**Balance**

**Biodegradability:** No relevant data found.

**Bioaccumulative potential**

**Noviflumuron**

**Bioaccumulation:** Bioconcentration potential is high (BCF > 3000 or Log Pow between 5 and 7).

**Partition coefficient: n-octanol/water(log Pow):** 4.94 Estimated.

**Cellulose**

**Bioaccumulation:** No bioconcentration is expected because of the relatively high molecular weight (MW greater than 1000).

**Balance**

**Bioaccumulation:** No relevant data found.

**Mobility in soil**

**Noviflumuron**

Expected to be relatively immobile in soil (Koc > 5000).

**Cellulose**

No data available.

**Balance**

No relevant data found.

---

---

### 13. DISPOSAL CONSIDERATIONS

---

**Disposal methods:** If wastes and/or containers cannot be disposed of according to the product label directions, disposal of this material must be in accordance with your local or area regulatory authorities. This information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and

physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. If the material as supplied becomes a waste, follow all applicable regional, national and local laws.

---

## 14. TRANSPORT INFORMATION

---

### DOT

Not regulated for transport

### Classification for SEA transport (IMO-IMDG):

Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.(Noviflumuron)
UN number	UN 3077
Class	9
Packing group	III
Marine pollutant	Noviflumuron
Transport in bulk according to Annex I or II of MARPOL 73/78 and the IBC or IGC Code	Consult IMO regulations before transporting ocean bulk

### Classification for AIR transport (IATA/ICAO):

Proper shipping name	Environmentally hazardous substance, solid, n.o.s.(Noviflumuron)
UN number	UN 3077
Class	9
Packing group	III

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

---

## 15. REGULATORY INFORMATION

---

### OSHA Hazard Communication Standard

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

### Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312

Acute Health Hazard

**Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313**

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

**California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986)**

This product contains no listed substances known to the State of California to cause cancer, birth defects or other reproductive harm, at levels which would require a warning under the statute.

**Pennsylvania (Worker and Community Right-To-Know Act): Pennsylvania Hazardous Substances List and/or Pennsylvania Environmental Hazardous Substance List:**

The following product components are cited in the Pennsylvania Hazardous Substance List and/or the Pennsylvania Environmental Substance List, and are present at levels which require reporting.

<b>Components</b>	<b>CASRN</b>
Cellulose	9004-34-6

**Pennsylvania (Worker and Community Right-To-Know Act): Pennsylvania Special Hazardous Substances List:**

To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

**United States TSCA Inventory (TSCA)**

This product contains chemical substance(s) exempt from U.S. EPA TSCA Inventory requirements. It is regulated as a pesticide subject to Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) requirements.

**Federal Insecticide, Fungicide and Rodenticide Act**

EPA Registration Number: 62719-454

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

---

**16. OTHER INFORMATION**

---

**Hazard Rating System**

**NFPA**

<b>Health</b>	<b>Fire</b>	<b>Reactivity</b>
0	0	0

**Revision**

Identification Number: 101197613 / A211 / Issue Date: 05/15/2015 / Version: 7.0

DAS Code: GF-1235

Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

**Legend**

ACGIH	USA. ACGIH Threshold Limit Values (TLV)
Dow IHG	Dow Industrial Hygiene Guideline



OSHA Z-1	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
TWA	8-hour, time-weighted average

**Information Source and References**

This SDS is prepared by Product Regulatory Services and Hazard Communications Groups from information supplied by internal references within our company.

DOW AGROSCIENCES LLC urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.