

INFORMATION SHEET

65-002-IS
Apr 2007

GRO-SAFE® ACTIVATED CARBON A SOIL AMENDMENT

GRO-SAFE is a specially prepared activated carbon designed to reduce the available level of most organic pesticide residues in soil. This results in a soil environment more suitable for plant growth. However, proper procedures for handling and using GRO-SAFE must be followed to insure maximum effectiveness. It is the purpose of this information sheet to provide these guidelines.

Instructions For Use

GRO-SAFE will reduce the available level of most organic pesticides in soil. However, it is considered ineffective for inorganic pesticides such as arsenates, lead compounds, sodium chlorate, sulfur, borax, etc. and water soluble organic pesticides, such as but not limited to aminotriazole, MSMA, and DSMA.

GRO-SAFE is biologically inactive. The suggested application, recommendations and instructions in this sheet are reliable to the best of our knowledge. However, users should make their own tests to determine the suitability of GRO-SAFE for their own particular purpose.

Mixing Instructions-General

It is important that GRO-SAFE be properly mixed and applied to avoid the inherent problems associated with a dry, very fine powder. For application convenience, it is recommended that GRO-SAFE be applied as a water slurry. To minimize dusting, always add GRO-SAFE to water slowly, keeping the bag as close to the water surface as possible.

For Small Areas

A sprinkling can or garden sprayer may be used. Because of limited agitation available on a garden sprayer, it is recommended the slurry be premixed and poured through a screen to assure complete mixing. Stir or agitate frequently during application.

For Large Areas and Banding Using Power Sprayers

1. Use spray equipment designed for concentrated wettable powders. This includes centrifugal pumps, piston pumps with ceramic cylinders and hardened stainless steel nozzles capable of handling abrasive powders.
2. Consult standard commercial literature, your GRO-SAFE distributor, or NORIT Americas Inc. for the choice of nozzles, pressures, and other conditions to achieve the desired dosage. All spray equipment should be calibrated prior to applying GRO-SAFE.
3. Make sure spray equipment, tubing, screen and nozzles are completely clean. Physical examination of screens and nozzles is recommended. Remove the screens if practical.
4. The final spray mixture should contain 1 lb of GRO-SAFE in each gallon of water. More dilute slurries can be used if desired.
5. Add sufficient water to begin moderate agitation. Simultaneously add the balance of required water and GRO-SAFE. Continue agitation until a uniform mixture is obtained.
6. Maintain moderate agitation while spraying.

For Root Dip Application

Prepare a 1 lb per gallon mixture by putting 2/3 of the required amount of water into a wide mouth container such as a water pail,

and slowly add the total required amount of GRO-SAFE. Stir gently and add balance of water. Stir frequently when using.

For Dry Application from Spreader

Although not normally recommended, GRO-SAFE may be applied from a spreader designed for the application of finely ground powders. Consult the manufacturer's literature for the proper setting. Do not allow GRO-SAFE to stand in the spreader before applying. Settling may cause compacting and bridging, which could result in erratic application. The spreader should be calibrated to assure accurate application. Do not apply on a windy day as the product may be blown to undesired areas.

GRO-SAFE Properties

GRO-SAFE is a specially prepared powdered activated carbon. It must meet rigorous QC requirements to optimize its effectiveness to reduce pesticides and to facilitate application with standard spray equipment. The critical properties of GRO-SAFE are:

Particle size, less than 100 mesh, %	99
less than 325 mesh, %	95
Apparent density, g/mL	0.5
Molasses decolorizing efficiency	85

Food and Feed Crops

Since traces of illegal pesticides have been found in crops grown in pesticide-contaminated soil, the necessity of proper and sufficient application of GRO-SAFE is of extreme importance. Therefore, GRO-SAFE is not to be used on food or feed crops without first contacting a GRO-SAFE distributor or NORIT Americas Inc. for instructions.

Conditions of Sale and Warranty

It is impossible to eliminate all the risks inherent in pesticide residues in soil. Factors beyond NORIT Americas Inc. and/or distributor's control such as weather, temperatures, humidity, soil conditions, the use of GRO-SAFE and/or application, existing excessive pesticide residue or the presence of pesticide combinations, may limit the effectiveness of a GRO-SAFE treatment. Depending upon the type and amount of pesticide remaining in the soil following treatment with GRO-SAFE, crop, or animal injury or other unintentional injury may occur. NORIT Americas Inc. offers the product subject to the understanding that Buyer assumes all such risks. Buyer should make his own tests to determine the suitability of this product for Buyer's particular purposes.

NORIT Americas Inc. warrants that GRO-SAFE activated carbon conforms to the chemical and physical description on the container. THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, AND NORIT AMERICAS INC. EXPRESSLY DISCLAIMS ANY WARRANTY OF MERCHANTABILITY OR FITNESS OF THE MATERIAL FOR ANY PARTICULAR PURPOSE.

Buyer agrees in purchasing this product that Buyer's exclusive remedy and NORIT Americas Inc. sole liability shall be limited to a refund of the purchase price or replacement of all materials shown to be otherwise than as warranted, and NORIT Americas Inc. shall not be otherwise liable for damages, including indirect or consequential damages, whether rising out of breach of warranty, negligence or other causes.

In no case should GRO-SAFE be used to employ a pesticide in a manner inconsistent with its label.

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APPLICATION	RECOMMENDATION	INSTRUCTIONS FOR NON-FOOD CROP
A. FOR REDUCING CONTAMINATION 1. Spills	GRO-SAFE can be used on spills of organic pesticides, herbicides, insecticides some petroleum products and hydraulic fluids.	Use 100 lbs of GRO-SAFE to every lb of active material spilled, but no less than 2 lbs of GRO-SAFE per 150 square feet (600 lbs/acre) of contaminated area. a.) If the active material has not been diluted with water at the time of the spill, apply GRO-SAFE directly from the GRO-SAFE container as a dry powder. b.) If the active material has been diluted with water, apply GRO-SAFE in a slurry form with a sprinkler can or common sprayer equipment. GRO-SAFE must be worked into the contaminated soil, preferably to a depth of 6 inches. With severe spills, it may be necessary to remove some of the contaminated soil prior to the application of GRO-SAFE.
2. Sprayer Cleaning	GRO-SAFE can be used in cleaning spray equipment after pesticide application.	For large sprayers first wash the system with water containing 1 cup of detergent for each 50 gallons of wash water, circulate through entire system and drain . Fill the tank ½ full of fresh water. Add 1 lb of GRO-SAFE for each 50 gallons of wash water. Now add balance of water to fill tank completely. Recirculate the wash water for 15 minutes, then flush it through the spray nozzles for another 10 minutes. Drain the system and flush with fresh water until all evidence of GRO-SAFE has disappeared from the rinse water.
3. Turf Herbicides	Turf areas that have been treated with pre-emergent crab grass and other herbicides can be reseeded earlier than normal by treating them with GRO-SAFE.	Whenever it is desirable to terminate the effect of a pre-emergent herbicide, apply GRO-SAFE slurry at a rate of 1 lb in 1 gallon of water for each 150 square feet. Water the slurry into the soil. Make sure that the grass is washed free of heavy carbon deposits. Where possible, it is desirable to rake the carbon into the soil thoroughly. The area can be seeded 24 hrs after treatment with GRO-SAFE.
4. Crop Rotation	It is often desirable to plant a herbicide sensitive crop in soil previously treated with herbicide, or in soil where harmful residue remains. GRO-SAFE can be used to reduce the effects of such undesirable residues.	The application varies with type of crop and the amount of residue. In general, 100 lbs of GRO-SAFE per acre is used for each lb of active material applied to the soil with a minimum rate of 300 lbs/acre. For the most economical method of application, a band treatment can be used. Spray a band of GRO-SAFE slurry wide enough to cover the root zone directly over the seed row. Suggested rate will be 300 lbs/acre of GRO-SAFE in the banded area. Band width and rate may vary with different crops. GRO-SAFE has to be worked into the soil to be effective. A depth of 6 inches is generally preferred. For Food and Feed crops refer to Caution Statement.
B. FOR PLANT PROTECTION 1. Bare Root Transplanting	GRO-SAFE can be used to protect the root system of transplants from possible trace herbicides in the soil that could injure the plant during the critical period after planting.	Dip roots of plants thoroughly in a slurry of 1 lb of GRO-SAFE per gallon of water. Transplant while roots are wet. Normally 1 lb of GRO-SAFE will treat up to 500 small plants. As an alternate method, use GRO-SAFE in the transplant water at a dosage rate of 1/8 - ¼ lb per gallon.
2. Ball & Burlap Transplanting	Watering of freshly planted stock results in residual pesticides from surrounding soil being leached into the root zone. This can be reduced significantly by forming a protective barrier of GRO-SAFE around the root system.	Pour a portion of the recommended amount of GRO-SAFE (either dry or in a slurry) over the ball. Distribute the remainder of GRO-SAFE slurry throughout soil used to fill the hole. a.) Balls 12 inches or less in diameter use ½ lb of GRO-SAFE. b.) Use an additional ½ lb of GRO-SAFE for each six inches in diameter of the ball over 12 inches.
3. Protective Barrier Shrubs, Trees & Plants	Established shrubs and trees can be protected with GRO-SAFE from long term leaching from surrounding soil.	Incorporate GRO-SAFE slurry (1 lb per gallon of water) into a barrier trench 3-6 inches deep on all sides from which leaching is expected. Use 1 lb of GRO-SAFE per 10 linear feet. Repeat as required.
4. Seed Protection	GRO-SAFE when applied as a layer over seed rows will protect the seeds from subsequent herbicide treatment.	Spray a band of GRO-SAFE slurry wide enough to cover the root zone directly over the seed row. Suggested rate is 300 lbs/acre of GRO-SAFE in the banded area. Band width and rate may vary with different crops and/or pesticides. For Food and Feed crops refer to Caution Statement.
C. FOR ENHANCING GERMINATION AND EARLY GROWTH OF GRASS SEED	Even in the absence of known herbicide problems, GRO-SAFE can assist in establishing grass coverage. In the majority of studies, complete grass coverage was achieved in approximately half the time when using GRO-SAFE.	Prepare the seed bed in the normal manner. Apply a broadcast application of 100 to 300 lbs/acre of GRO-SAFE. Incorporate the GRO-SAFE into the soil and proceed with the seeding operation.
D. FOR SODDING	Knitting of transplanted sod to the soil is often retarded by normal stress conditions, presence of herbicides, etc. Dramatic acceleration of knitting is frequently achieved with GRO-SAFE.	Prepare the soil in the normal manner. Apply 100 to 600 lbs/acre of GRO-SAFE. Incorporate GRO-SAFE in the soil and continue with the sodding operation.