



# GlyKamba™

## BroadSpectrum Herbicide

### MATERIAL SAFETY DATA

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#### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

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PRODUCT NAME: GlyKamba™ Broad Spectrum Herbicide

Date: 2/22/2002

MSDS Number: 003

EPA Registration No: 71368-30

Nufarm Americas Inc., 1333 Burr Ridge Parkway Suite 125A Burr Ridge, IL 60521-0866 ☐

FOR CHEMICAL EMERGENCY, SPILL LEAK, FIRE, EXPOSURE, OR ACCIDENT

Emergency Phone (Chemtrec): (800) 424-9300

Medical Emergencies: (877) 325-1840

For Product Use Information: (800) 852-5234

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#### 2. COMPOSITION/INFORMATION ON INGREDIENTS

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<u>Component</u>	<u>CAS No.</u>	<u>% by weight</u>
Active Ingredients:		
Glyphosate, N-(phosphonomethyl) glycine, in the form of its isopropylamine salt	38641-94-0	23.3
Dicamba, 3,6-dichloro-O-anisic acid, in the form of its isopropylamine salt *	1918-00-9	4.1
Surfactant and Other Ingredients *	+	72.6

\* Hazardous chemical(s) under the criteria of the OSHA Hazard Communication Standard (29 CFR 1910.1200).

+ The specific chemical identity is being withheld because it is trade secret information.

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#### 3. HAZARDS IDENTIFICATION

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##### EMERGENCY OVERVIEW

Appearance and Odor: amber to gold solution

##### WARNING STATEMENTS

Keep out of reach of children

DANGER! PELIGRO!

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle.

(If you do not understand the label, find someone to explain it to you in detail.)

CORROSIVE. CAUSES IRREVERSIBLE EYE DAMAGE.

HARMFUL IF SWALLOWED OR INHALED.

If swallowed, may cause irritation of mouth and throat.

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Do not get in eyes or on clothing.  
Avoid breathing vapor or spray mist.

#### POTENTIAL HEALTH EFFECTS

Likely Routes of Exposure: inhalation and skin contact

EYE CONTACT: This product causes eye burns which may impair vision permanently.

SKIN CONTACT: No more than slightly toxic or slightly irritating based on toxicity studies. However, this material may cause an allergic skin reaction based on toxicity studies.

INHALATION: No more than slightly toxic if inhaled.

INGESTION: No more than slightly toxic based on toxicity studies. Significant adverse health effects are not expected to develop if only small amounts (less than a mouthful) are swallowed. Ingestion of a large amount (greater than a mouthful) of a similar formulation has been reported to produce gastrointestinal discomfort with irritation of the mouth, nausea, vomiting and diarrhea.

Refer to Section 11 for toxicological information.

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#### 4. FIRST AID MEASURES

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IF IN EYES: Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove any contact lenses. Get medical attention.

IF ON SKIN: Immediately flush with plenty of water while removing contaminated clothing. As soon as possible, wash skin thoroughly with soap and water. If irritation persists, call a physician. Launder clothing before reuse.

IF INHALED: Remove individual to fresh air. Seek medical attention if breathing difficulty develops.

IF SWALLOWED: This product will cause gastrointestinal tract irritation. Immediately dilute by swallowing a large quantity of milk or water. Call a physician. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. Avoid alcohol.

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#### 5. FIRE FIGHTING MEASURES

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FLASH POINT: None

METHOD: Tag Closed Cup

HAZARDOUS PRODUCTS OF COMBUSTION: None

EXTINGUISHING MEDIA: In case of fire, use water spray (fog), foam, dry chemical, or CO2.

UNUSUAL FIRE AND EXPLOSION HAZARDS: None

FIRE FIGHTING EQUIPMENT: Fire fighters and others exposed to products of combustion should wear self-contained breathing apparatus. Equipment should be thoroughly decontaminated after use.

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#### 6. ACCIDENTAL RELEASE MEASURES

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Observe all protection and safety precautions when cleaning up spills - See Exposure Controls/Personal Protection, Section 8. Liquid spills on floor or other impervious surfaces should be contained or diked and then absorbed with attapulgite, bentonite or

other absorbent clays. Collect contaminated absorbent, place in a metal drum and dispose of in accordance with instructions provided in Section 13 of this MSDS. Thoroughly scrub floor or other impervious surface with a strong industrial type detergent and rinse with water.

Liquid spills that soak into the ground should be dug up, placed in metal drums and disposed of in accordance with instructions provided under DISPOSAL, Section 13 of this MSDS. Leaking containers should be separated from non-leaking containers and either the container or its contents transferred to a drum or other non-leaking container and disposed of in accordance with instructions provided under DISPOSAL, Section 13 of this MSDS. Any recovered spilled liquid should be disposed of using a similar method.

Refer to Section 13 for disposal information and Sections 14 and 15 for reportable quantity information.

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## 7. HANDLING AND STORAGE

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**HANDLING:** Do not get in eyes, on skin or on clothing. Avoid breathing vapor or spray mist. Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Do not apply directly to water or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwaters. Emptied container retains vapor and product residue. Observe all labeled safeguards until container is destroyed. **DO NOT CUT OR WELD ON OR NEAR THIS CONTAINER.**

**STORAGE:** Store above 40 degrees F (4.4 degrees C) to keep product in solution. If crystals form, place in a warm room (72 degrees F, 22 degrees C) allow the product to reach room temperature and roll or shake periodically until crystals have dissolved. Keep container closed to prevent spills and contamination. For bulk containers, see container label for alternate storage information. Do not contaminate water, food, or feed by storage or disposal. Do not store near fertilizers, seeds, insecticides or fungicides. Product is stable under normal conditions of storage and handling. Heated facilities are not required.

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## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

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**EYE PROTECTION:** Wear chemical safety goggles to prevent eye contact during mixing/transfer operations or other activities when there is potential for eye contact.

**SKIN PROTECTION:** Wear appropriate protective clothing and chemical resistant gloves to prevent skin contact. Applicators and other handlers must wear: long-sleeved shirt and long pants; shoes plus socks, and protective eyewear. Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

**RESPIRATORY PROTECTION:** Avoid breathing mist. This product is not likely to pose an airborne exposure concern when handled and used in accordance with label instructions. In the event of abnormal exposure conditions, use NIOSH approved equipment. In work situations where an air purifying respirator is appropriate to be used, use of a full face respirator equipped with purifying elements for protection against organic vapor and dust/mist approved for pesticides is recommended. Full facepiece replaces the need for chemical goggles. Observe respirator use limitations specified by the manufacturers. Respiratory protection programs must comply with 29 CFR 1910.134.

For Application of Product Diluted in accordance with label instructions: Respirators are not required for applications of use - dilutions of GlyKamba™ Broad Spectrum Herbicide.

**VENTILATION:** Provide natural or mechanical ventilation to minimize exposure. If practical, use local mechanical ventilation at sources of air contamination such as open process equipment.

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AIRBORNE EXPOSURE LIMITS:

<u>Product/Component</u>	<u>OSHA PEL</u>	<u>ACGIH TLV</u>
GlyKamba™ Broad Spectrum Herbicide	None established	None established
Glyphosate IPA	None established	None established
Dicamba	None established	None established
Surfactant	None established	None established
Ethylene glycol	None established	100 mg/m3 (ceiling)

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9. PHYSICAL AND CHEMICAL PROPERTIES

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Appearance: amber to gold solution  
pH: 4.0 to 4.7 (5 grams diluted to 100 ml with distilled water)  
Specific Gravity: 1.125 at 25/15.6 degrees C

NOTE: These physical data are typical values based on material tested but may vary from sample to sample. Typical values should not be construed as a guaranteed analysis of any specific lot or as specifications for the product.

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10. STABILITY AND REACTIVITY

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STABILITY: Stable under normal conditions of warehouse storage. Heated facilities are not required. Store above 40 degrees F to keep product in solution. See Section 7 for storage information.

HAZARDOUS DECOMPOSITION PRODUCTS: None

HAZARDOUS POLYMERIZATION: Does not occur

INCOMPATIBILITY: This product and spray solutions of this product should be mixed, stored and applied only in stainless steel, aluminum, fiberglass, plastic and plastic-lined steel containers. DO NOT MIX, STORE OR APPLY THIS PRODUCT OR SPRAY SOLUTIONS OF THIS PRODUCT IN GALVANIZED OR UNLINED STEEL (EXCEPT STAINLESS STEEL) CONTAINERS OR SPRAY TANKS. This product or spray solutions of this product react with such containers and tanks to produce hydrogen gas which may form a highly combustible gas mixture. This gas mixture could flash or explode, causing serious personal injury, if ignited by open flame, spark, welder's torch, lighted cigarette or other ignition source.

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11. TOXICOLOGICAL INFORMATION

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Data from laboratory studies with this material are summarized below:

Oral Toxicity:	Slightly Toxic,	LD50 (rat) = 4078 mg/kg,	FIFRA Category III
Dermal Toxicity	Practically Nontoxic,	LD50 (rat) > 5000 mg/kg,	FIFRA Category IV
Inhalation Toxicity	Slightly Toxic,	4-hr LC50 (rat) = 0.95 mg/liter,	FIFRA Category III
Eye Irritation	Severely Irritating/Corrosive (rabbit),		FIFRA Category I
Skin Irritation	Slightly Irritating (rabbit), PII = 0.63/8.0,		FIFRA Category IV
Dermal Sensitization potential (guinea pig)	was negative		

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### Components

Data from studies and from the available literature on components in this product are discussed below:

#### Isopropylamine Salt of Glyphosate

Data from studies with a formulation comprised of 62% isopropylamine salt of glyphosate (MON 0139) indicate the following:

In repeat dosing studies (6-month), dogs fed MON 0139 exhibited slight body weight changes. Following repeated skin exposure (3-week) to MON 0139, skin irritation was the primary effect in rabbits.

Additional toxicity information is available on glyphosate, the active herbicidal ingredient of MON 0139. Following repeated exposures (90-days) to glyphosate in their feed, decreased weight gains were noted at the highest test level in mice, while no treatment-related effects occurred in rats. Following repeated skin exposure (3 weeks) to glyphosate, slight skin irritation was the primary effect observed in rabbits. No skin allergy was observed in guinea pigs following repeated skin exposure. There was no evidence of effects on the nervous system, including delayed effects in chickens (repeat oral doses) or cholinesterase inhibition in rats (single oral doses). Reduced body weight gain and effects on liver tissues were observed with long-term (2-year) feeding of glyphosate to mice at high-dose levels. Reduced body weight gain and eye changes were observed at the high-dose level in one long-term (2 year) feeding study with rats, while no treatment-related effects occurred in a second study. No adverse effects were observed in feeding studies with dogs. Glyphosate did not produce tumors in any of these studies. Based on the results from the chronic studies, EPA has classified glyphosate in category E (evidence of non-carcinogenicity for humans). No birth defects were noted in rats and rabbits given glyphosate orally during pregnancy, even at amounts which produced adverse effects on the mothers. Glyphosate was fed continuously to rats at very high dose levels for 2 successive generations. Toxicity was reported in offspring from the high dose, a level which also produced adverse effects on the mothers. In a 3 generation study conducted at lower dose levels, no effects were seen on the ability of male or female rats to reproduce. Glyphosate has produced no genetic changes in a variety of standard tests using animals and animal or bacterial cells..

#### 3,6-Dichloro-o-Anisic Acid (Dicamba in free acid form)

Dicamba was slightly toxic orally (rats) or after skin application (rabbits) and practically nontoxic after inhalation (rats). It was slightly irritating to rabbit skin and corrosive to rabbit eyes. In repeat dosing studies, rats fed dicamba exhibited decreased body weights and food consumption and liver effects. Following repeated skin exposure (3 weeks) to dicamba, skin irritation was the primary effect in rabbits. Skin allergy was observed in guinea pigs following repeated skin exposure. No adverse effects were reported in long-term feeding studies with rats (2-years), while an initial decrease in food consumption was the only effect reported in dogs (1-year). Dicamba did not produce tumors in any of these long-term studies with rats, or in a long-term (89-104 weeks) feeding study with mice. No birth defects were reported in rats or rabbits given dicamba orally during pregnancy, even at amounts which produced adverse effects on the mothers and their offspring. No effects were seen on the ability of male or female rats to reproduce when given dicamba for 3 generations. Dicamba has generally produced no genetic changes in standard tests using animals and animal cells. Both positive and negative responses have been reported in assays using bacterial cells.

#### Surfactant

The surfactant component of GlyKamba™ Broad Spectrum Herbicide is reported to cause irritation to the eyes, skin and respiratory tract and may contribute to the irritation potential reported for this herbicide. Prolonged skin contact may cause more severe irritation and discomfort, with related local redness (erythema) and possible swelling (edema). Ingestion may produce gastrointestinal irritation, nausea, vomiting and diarrhea. Single-dose (acute) toxicity studies indicate that this material is moderately toxic orally (rats) and after skin application (rabbits). It is slightly irritating to rabbit skin and moderately irritating to rabbit eyes.

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## 12. ECOLOGICAL INFORMATION

Nufarm has not conducted environmental toxicity tests with this product. Available data for the components of GlyKamba™ Broad Spectrum Herbicide and similar formulations suggest that this product would be slightly to moderately toxic to aquatic organisms and practically non-toxic to avian species and honeybees.

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### 13. DISPOSAL CONSIDERATIONS

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This material when discarded is not a hazardous waste as that term is defined by the Resource, Conservation and Recovery Act (RCRA), 40 CFR 261. Wastes resulting from the use of this product that cannot be used or chemically reprocessed should be incinerated or disposed of in a landfill approved for pesticide disposal or in accordance with applicable Federal, State and local procedures.

Emptied container retains product residue. Observe all labeled safeguards until container is destroyed. Dispose of containers as follows: Plastic Jugs: Triple rinse container. Then puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke. Bulk Containers: Triple rinse emptied bulk containers. Then offer for recycling or reconditioning or dispose of in a manner approved by State and local authorities.

Consult your attorney or appropriate regulatory officials for information on such disposal. Do not contaminate water, food, or feed by storage or disposal.

Do not store near fertilizers, seeds, insecticides or fungicides.

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### 14. TRANSPORT INFORMATION

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The data provided in this section is for information only. Please apply the appropriate regulations to properly classify your shipment for transportation.

This product is not hazardous under the applicable DOT, ICAO/IATA or IMDG regulations.

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### 15. REGULATORY INFORMATION

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TSCA Inventory: All components are listed.

SARA Hazard Notification

Hazard Categories Under Title III Rules (40 CFR 370): Immediate, Delayed

Section 302 Extremely Hazardous Substances: Not applicable

Section 313 Toxic Chemical(s): ethylene glycol, dicamba; see section 2 for more information

CERCLA Reportable Quantity: Packages of 24,630 lbs. or more contain a 1000 lb. RQ of dicamba

Release of more than 24,630 pounds of this product to the environment in a 24-hour period requires notification to the National Response Center (800-424-8802 or 202-426-2675).

Refer to Section 2 for OSHA Hazardous Chemical(s) and Section 13 for RCRA classification.

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### 16. OTHER INFORMATION

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Reason for revision: Revised Section 2 & 14

Supersedes MSDS dated: March 8, 2000

This Material Safety Data Sheet (MSDS) serves different purposes than and DOES NOT REPLACE OR MODIFY THE EPA-APPROVED PRODUCT LABELING (attached to and accompanying the product container). This MSDS provides important health, safety, and environmental information for employers, employees, emergency responders and others handling large quantities of the product in activities generally other than product use, while the labeling provides that information specifically for product use in the ordinary course.

Use, storage and disposal of pesticide products are regulated by the EPA under the authority of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) through the product labeling, and all necessary and appropriate precautionary, use, storage, and disposal information is set forth on that labeling. It is a violation of federal law to use a pesticide product in any manner not prescribed on the EPA-approved label.

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