MATERIAL SAFETY DATA SHEET

BROMACIL/DIURON 40/40 **Version: 1** **Date Issued: 10/17/05**

SECTION 1 CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Company: Alligare, LLC
13 North 8th Street
Opelika, AL 36801
Product Information: 888-255-4427
Product Name: Bromacil/Diuron 40/40
Product Registration Number: 81927-3
Product use: Herbicide

FOR MEDICAL EMERGENCIES, CONTACT the National Pesticide Information Center 1-800-858-7378
FOR CHEMICAL EMERGENCY: Spill, leak, fire, exposure, or accident, call CHEMTREC 1-800-424-9300

SECTION 2 COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name:	CAS No.	Weight %	TLV
Bromacil (5-bromo-3-sec-butyl-6-methyluracil)	314-40-9	40	10 mg/m3, 8 hr. TWA, A3
Diuron (3- (3,4-dichlorophenyl) -1, 1-dimethylurea	330-54-1	40	10 mg/m3, 8 hr. TWA, A4
Inert Ingredients		20	

SECTION 3 HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

CAUTION: Harmful if swallowed or absorbed through skin. Causes moderate eye irritation. Avoid contact with eyes, skin or clothing.

Based on animal data, skin contact with this product may cause skin irritation with discomfort or rash.
Based on animal data, eye contact with this product may cause eye irritation with tearing or blurring of vision.
Based on animal data, repeated or excessive exposures by ingestion may cause abnormal liver function; spleen effects; and red blood cell effects with headache, weakness, cyanosis (bluish discoloration of the skin) possibly progressing to dizziness, incoordination, shortness of breath, increased pulse rate and loss of consciousness.
Individuals with preexisting diseases of the liver or bone marrow may have increased susceptibility to the toxicity of excessive exposures.
Toxicology tests with these active ingredients in which tumors were observed utilized study designs that incorporated excessive exposures over the lifetime of laboratory animals. Levels of human exposure under normal use are many times lower than the no-effect levels in these animal studies.

The following components are listed by IARC, NP, OSHA or ACGIH as carcinogens:

	IARC	NTP	OSHA	ACGIH
Bromacil				A3
Diuron				A4

SECTION 4 FIRST AID MEASURES

IF IN EYES: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for further treatment advice.
IF SWALLOWED: call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the poison control center or doctor.
IF ON SKIN OR CLOTHING: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

NOTE TO PHYSICIAN: Absorption of this product may lead to the formation of methemoglobin which, in sufficient concentration, causes cyanosis. Thorough cleaning of the entire contaminated area including scalp and nails, is of the

utmost importance. Moderate cyanosis can be treated by supportive measures such as bed rest and oxygen inhalation. Severe cyanosis may require intravenous injection of methylene blue, one milligram per kilogram of body weight. Cyanocobalamin (Vitamin B12), one milligram intramuscularly, may speed recovery. Intravenous fluids and blood transfusions may be indicated in very severe exposure. Methylene blue is contraindicated if the patient has confirmed or suspected glucose-6-phosphate dehydrogenase deficiency. Ascorbic acid has been suggested in such cases.

SECTION 5 FIRE FIGHTING MEASURES

AUTOIGNITION:	420ºC (788ºF)
FLAMMABLE PROPERTIES:	May be ignited by heat or open flame.
EXTINGUISHING MEDIA:	Water spray, foam, dry chemical, CO2.
EXPLOSION HAZARDS:	Like most organic powders or crystals, under severe dusting conditions, this material may form explosive mixtures in air.
FIRE FIGHTING PROCEDURES:	Evacuate personnel to a safe area. Wear self-contained breathing apparatus. Wear full protective equipment. Cool tank/container with water spray. Runoff from fire control may be a pollution hazard. If area is heavily exposed to fire and if conditions permit, let fire burn itself out, since water may increase the contamination hazard.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Dike spill. Shovel or sweep up. Do not return to container for reuse. Scoop into bags or boxes with plastic or aluminum shovel. If spill area is on ground near valuable plants or trees, remove top 2 inches of soil after initial cleanup.

SECTION 7 HANDLING AND STORAGE

Avoid breathing dust. Avoid breathing vapors or mist. Avoid contact with eyes, skin, or clothing. Wash thoroughly after handling. Wash clothing after use. Do not store or consume food, drink, or tobacco in areas where they may become contaminated with this material.

USERS SHOULD: 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. Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

Keep away from heat, sparks, and flames.

Store in original container only. Keep container tightly closed. Store in a cool, dry place. Do not contaminate water, other pesticides, fertilizer, food, or feed in storage. Do not store or consume food, drink or tobacco in areas where they may become contaminated with this material.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: Use with adequate ventilation. Keep container tightly closed. Maintain exposure below acceptable limits.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE:	Beige powder
pH:	8.57
SOLUBILITY IN WATER:	Wettable powder
DENSITY:	0.591 g/mL (pour); 0.698 g/mL (tap)

SECTION 10 STABILITY AND REACTIVITY

STABILITY: Stable at normal temperatures and storage conditions.

POLYMERIZATION: Not known to occur.
INCOMPATIBILITY: None reasonably foreseeable.

SECTION 11 TOXICOLOGICAL INFORMATION

ACUTE ORAL LD_{50}: 2,300 mg/kg in rats (slightly toxic)

ACUTE INHALATION LC_{50}: >5.2 mg/L (rat, 4 hours). Slightly to moderately toxic.

DERMAL LD_{50}: >2,000 mg/kg (rabbits). Slightly toxic.

Bromacil 40+40 is a slight skin irritant, and a moderate eye irritant, but is not a skin sensitizer in animals.

BROMACIL

The compound is a moderate skin irritant, is a mild to moderate eye irritant, and is not a skin sensititzer. Rabbits acutely exposed via dermal route demonstrated no clinical signs of toxicity, and no gross tissue changes were observed at the highest practical dose, 5,000 mg/kg.

Single exposure to Bromacil by inhalation resulted in rapid and deep respiration. Repeated exposure caused slightly increased platelet counts, lower serum cholesterol, and slightly increased liver weights. All remaining animals were normal after a 14-day recovery period.

Single exposure to Bromacil by ingestion resulted in incoordination, salivation, vomiting, weakness, tearing and dilated pupils. Repeated exposure caused liver changes, increased liver, adrenal, and heart weights, decreased kidney and spleen weights, and thyroid changes. Long-term exposure caused reduced weight gain, slight thyroid effects, and liver effects.

Dogs fed Bromacil for one year had decreased body weight gain in the high dose group. Rats fed Bromacil for two years had reduced body weight gain, increased incidence of thyroid cysts, and enlargement of thymus at the high dose, and a dose-related increase in thyroid tumors. Mice fed Bromacil for 18 months had liver lesions in all male groups and an increase in liver tumors in the high dose males.

Animal testing indicates Bromacil does not have reproductive effects. Bromacil is not considered to be a developmental toxicant. Any developmental effects occurred at maternally toxic doses. The weight of evidence suggests that Bromacil does not produce genetic damage in mammalian or bacterial cells cultures or animal studies.

DIURON

Effects in animals from short inhalation exposure to Diuron include lethargy, incoordination, and nonspecific effects such as weight loss and irritation.

Repeated ingestion exposures with Diuron caused enlarged spleen, increased liver and kidney weights, reduced growth rate, pallor, anemia, red blood cell destruction, cyanosis, increased liver enzyme activity, and nonspecific effects such as weight loss and irritation. In addition, long-term effects included bone marrow changes, thickening of the urinary bladder, pigment deposits in the spleen, and kidney effects.

In chronic feeding studies an increase in urinary bladder tumors in high-dose rats and an increase of mammary tumors in high-dose female mice were observed. The weight of the evidence indicates that Diuron does not produce genetic damage in bacterial or mammalian cell cultures or in animal tests. Diuron is not considered a developmental toxicant. There was no evidence of developmental toxicity in rabbits. In rats developmental effects occurred at doses higher than those producing maternal toxicity. Testing in rats demonstrates no reproductive toxicity.

SECTION 12 ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION
AQUATIC TOXICITY:

BROMACIL
Slightly toxic.
96 hour LC50 – Fathead minnows: 182 mg/L

DIURON
Moderately toxic.
96 hour LC50 – Fathead minnows: 14.2 mg/L.
96 hour LC50 – Bluegill sunfish: 25 ppm.
96 hour LC50 – Rainbow trout: 20 ppm.

AVIAN TOXICITY:
LD50 – Mallard duck: > 2000 mg/kg.

SECTION 13 DISPOSAL CONSIDERATIONS

DISPOSAL METHOD: Do not contaminate water, food, or feed by storage or disposal. If wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

ENVIRONMENTAL HAZARDS: Bromacil is known to leach through soil and has been found in ground water as a result of normal field use. Users are advised not to apply in areas where soils are permeable, particularly where ground water is used for drinking water. Consult with the pesticide state lead agency for information regarding soil permeability and aquifer vulnerability in your area.

EMPTY CONTAINER: Refer to label.

SECTION 14 TRANSPORT INFORMATION

U.S. Department of Transportation (DOT): Not regulated by DOT.*

*Regulated for transport into, out of, or within the United States when a single package contains 100 lbs or more of Diuron. Describe as follows:

Proper Shipping Name: Environmentally hazardous substance, solid, N.O.S. (Diuron
Hazard Class: 9
UN Number: 3077
Packing Group: III
Marine Pollutant: No
Reportable Quantity: Yes (100 lbs)

SECTION 15 REGULATORY INFORMATION

TITLE III HAZARD CLASSIFICATIONS SECTIONS 311, 312

Acute : yes
Chronic : yes
Fire : no
Reactivity : no
Pressure : no

SARA/CERCLA Reportable Quantity

Diuron (100 lbs)

State Regulations (U.S.)

THIS PRODUCT CONTAINS DIURON, A CHEMICAL KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER IN LABORATORY ANIMALS.

SECTION 16 OTHER INFORMATION

	HEALTH	FLAMMABILITY	REACTIVITY	OTHERS
NFPA RATING	1	1	0	none
HMIS RATING	1	1	0	

Least – 0, Slight – 1, Moderate – 2, High – 3, Extreme – 4. These values are obtained using professional judgment and were not available in the guidelines or published evaluations prepared by the National Fire Protection Association.

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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.

REVISION SUMMARY: new