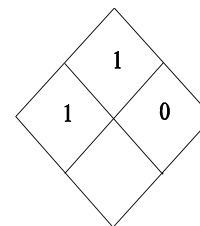


MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION



PRODUCT NAME: EVITAL® 5G
GENERAL USE: A Granular Herbicide for Use on Cranberries
PRODUCT DESCRIPTION: Greyish Beige Granule
EPA Registration Number: 5481-506
MSDS No.: 303_1
Current MSDS Revision Date: 31 March 2003

MANUFACTURER:
AMVAC CHEMICAL CORPORATION
4100 E. Washington Blvd.
Los Angeles, CA 90023-4406
Ph: 323-264-3910
FAX: 323-268-1028

EMERGENCY TELEPHONE NUMBERS:
MANUFACTURER: 323-264-3910
TRANSPORTATION (24 HOURS)
CHEMTREC: 800-424-9300
OTHER (24 HOURS)
AMVAC: 323-264-3910

2. COMPOSITION/INFORMATION ON INGREDIENTS

COMPONENT	WT %	CAS No.
Norflurazon [4-Chloro-5-(methylamino)-2-(alpha, alpha, alpha-trifluoro-m-tolyl)-3(2H)-pyridazinone]	5%	27314-13-2

OSHA HAZARDOUS COMPONENTS (29 CFR1910.1200)

COMPONENT	HAZARD	OSHA PEL*	ACGIH TLV*
Norflurazon	Irritant	None	None
Carrier contains traces of respirable crystalline silica	Possible Carcinogen	0.05 mg/m ³	0.05 mg/m ³

* Exposure Limits 8 hrs. TWA

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3. **HAZARDS IDENTIFICATION**

EMERGENCY OVERVIEW:

CAUTION! Hazardous to Humans and Domestic Animals. May cause skin and eye irritation. Keep out of reach of Children

POTENTIAL HEALTH EFFECTS

ROUTE(S) OF ENTRY: Skin and eye contact; inhalation of dust; ingestion of granules.

SIGNS OF ACUTE OVEREXPOSURE: Possible skin and eye irritation.

SIGNS OF CHRONIC OVEREXPOSURE: Same as for acute overexposure.

CARCINOGENICITY: Product is not listed as a possible carcinogen by NTP, IARC, or OSHA. Product may contain respirable crystalline silica, which is listed as being carcinogenic by both IARC and NTP. Laboratory studies have shown some evidence of developmental toxicity and carcinogenicity with Norflurazon.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: None known.

4. **FIRST AID MEASURES**

EYES: Immediately flush the eyes with copious amounts of clear, cool running water for a minimum of 15 minutes. Hold the eyelids apart during the flushing to ensure rinsing of the entire surface of the eyes and lids with water. Contact a physician immediately. If there will be a delay in getting medical attention, rinse the eyes for at least another 15 minutes.

INHALATION: Remove victim to fresh air. If breathing has ceased, clear the victim's airway and start mouth-to-mouth artificial respiration. If breathing is difficult, give oxygen. Contact a physician immediately. Be sure the contact areas are clean to prevent contamination of the rescuer.

INGESTION: Immediately dilute the swallowed product by giving large quantities of water. Induce vomiting by giving Syrup of Ipecac according to directions on the bottle or by sticking a finger down the throat. Never give anything by mouth to an unconscious or convulsing person. Contact a physician immediately. Be sure the mouth is clean or wear a rubber glove to prevent contamination of the rescuer.

SKIN: Immediately flush all affected areas with large amounts of clear water for at least 15 minutes. Remove contaminated clothing. Do not attempt to neutralize with chemical agents. Wash clothing before reuse. If skin irritation develops, contact a physician immediately.

4. FIRST AID MEASURES, cont'd

NOTE TO PHYSICIANS: There is no specific antidote if this product is ingested. Treat symptomatically.

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES

Flash Point:	Not applicable
Autoignition Temperature:	Not applicable
Flammable Limits:	
Lower flammable limit:	Not applicable
Upper flammable limit:	Not applicable

EXPLOSIVITY:

Mechanical Impact:	Not expected to be explosive
Static Discharge:	Not expected to be explosive

HAZARDOUS COMBUSTION PRODUCTS: Thermal decomposition products may include, but are not limited to, amines, oxides of Nitrogen, Hydrogen fluoride, fluorides, and Hydrogen chloride.

EXTINGUISHING MEDIA: Use dry chemical, foam, or Carbon dioxide (CO₂) extinguishing media.

FIRE FIGHTING INSTRUCTIONS: Wear full protective clothing and self-contained breathing apparatus. Evacuate nonessential personnel from the area to prevent human exposure to fire, smoke, fumes or products of combustion. Prevent use of contaminated buildings, area, and equipment until decontaminated.

6. ACCIDENTAL RELEASE MEASURES

GENERAL: Use adequate ventilation and air-supplied respirators, as well as impervious clothing and safety goggles. Keep bystanders upwind and away from the spill.

SMALL SPILL: Sweep into an open drum. Clean the area with common powdered household detergent and a stiff brush and just enough water to make a slurry. Absorb and sweep into the open drum. Rinse with water, absorb, and add to the waste drum. Close the drum and dispose of properly (see section 13).

6. **ACCIDENTAL RELEASE MEASURES, cont'd**

LARGE SPILL: Sweep, shovel, or vacuum the spilled product into drums for use or disposal, depending on the circumstances. Take care to keep dusting to a minimum. Clean the area as described for a small spill.

7. **HANDLING AND STORAGE**

HANDLING: Prevent skin contact. Do not breathe dust. Do not eat, drink, use tobacco or cosmetics while handling. Wear appropriate personal protective equipment (see Section 8). Wash thoroughly and change clothes after handling. See product label for more detailed handling procedures.

STORAGE: Do not contaminate water, food or feed by storage or disposal. Store product in a cool, dry, locked place out of reach of children. See label for specific instructions.

8. **EXPOSURE CONTROLS/PERSONAL PROTECTION**

ENGINEERING CONTROLS: No engineering controls are necessary under normal use conditions. For manufacturing, sufficient ventilation should be used to ensure keeping the exposures to dust below the TLV's.

RESPIRATORY PROTECTION: In processes where dusts or airborne particulates may be generated, a Dust/Mist filtering respirator (MSHA/NIOSH approval number prefix N95 or greater) or MSHA/NIOSH approved respirator with dust cartridges or equivalent is required in the absence of effective environmental controls.

SKIN PROTECTION: Applicators and other handlers must wear long-sleeved shirt and long pants; waterproof gloves; shoes plus socks.

EYE PROTECTION: Safety glasses or goggles are required when working with chemicals.

9. **PHYSICAL AND CHEMICAL PROPERTIES**

Physical State:	Solid
Appearance:	Grayish beige granule
Odor:	Odorless
Odor Threshold:	Not established (for Norflurazon)
Boiling Point:	Not applicable to product
Freezing/Melting Point:	174 - 180°C (345 - 356°F) (for Norflurazon)
Specific Gravity:	1.30 g/cm ³
Density:	81 lb/ft ³
Evaporation Rate:	Not established (for Norflurazon)

9. **PHYSICAL AND CHEMICAL PROPERTIES, cont'd**

Vapor Pressure:	1.00E-05 mm Hg @ 24°C (for Norflurazon)
Vapor Density:	Not applicable
Percent Volatile by Vol:	Not applicable
Solubility (Water):	33.7 ppm @ 25°C (for Norflurazon)
Solubility (Other):	The active ingredient, Norflurazon, is soluble in acetone and ethanol
pH:	7-9 (1% dispersion in water)
Partition Coefficient (Kow):	280 @ pH 6.5, 20°C (for Norflurazon)

10. **STABILITY AND REACTIVITY**

CHEMICAL STABILITY (Conditions to avoid): This product is stable under normal use and storage conditions

INCOMPATIBILITY: None

HAZARDOUS DECOMPOSITION PRODUCTS: None known

HAZARDOUS POLYMERIZATION: This product will not polymerize.

11. **TOXICOLOGICAL INFORMATION**

INGESTION:	Oral LD ₅₀ (rat):	>5000 mg/kg body weight
INHALATION:	Inhalation LC ₅₀ (rat):	> 2.5 mg/L (4 hr) (for Norflurazon)
DERMAL:	Skin LD ₅₀ (rabbit):	> 2000 mg/kg body weight
IRRITATION:	Eye irritation:	Not available for product. The presence of silica in the carrier may cause irritation of the eyes.
	Skin irritation:	Not available for product. The presence of silica in the carrier may cause irritation of the skin.
SENSITIZATION:	Skin sensitization: (guinea pig)	Not available for product (Norflurazon is not a sensitizer).
MUTAGENICITY:	None observed for the active ingredient, Norflurazon.	
CARCINOGENICITY:	Increase in hepatomas at highest dose level tested (male mice) using Norflurazon. Respirable crystalline silica, present at less than 0.1% in the formulation, is listed as being carcinogenic by both IARC and NTP.	
REPRODUCTIVE TOXICITY:	Delayed ossification (rabbit); Maternal toxicity at 750 ppm (rat).	
TOXICOLOGICAL SYNERGISTIC PRODUCTS:	No data available.	
TARGET ORGANS:	Pituitary, Adrenals, Uterus, Ovaries and Liver for Norflurazon. Respiratory Tract, Skin and Eyes for the carrier	

12. ECOLOGICAL INFORMATION

No data is available for the formulation. The active ingredient, Norflurazon, is relatively nontoxic to both Rainbow trout (LC50 > 27.7 mg/L, 96 hr) and Daphnia magna (> 15 mg/L, 48 hr).

13. DISPOSAL CONSIDERATIONS

Do not reuse product containers. Dispose of product containers, waste containers, and residues according to local, state, and Federal health and environmental regulations.

14. TRANSPORTATION INFORMATION

DOT Class:	None
UN Number:	None
IMDG Class (sea):	Not applicable
IATA Class (air):	Not applicable
Packing Group:	None
Hazard label(s):	None
Proper shipping name(s):	Compound; Weed Killing (Herbicide), N.O.S. (For B/L Freight only)
Reportable Quantity:	None
Special Requirements:	None

PACKAGING

General description: 50 lb Kraft lined bags

15. REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS:

This product is registered under EPA/FIFRA Regulations. It is a violation of Federal Law to use this product in any manner inconsistent with its labeling. Read and follow all label directions. This product is excluded from listing requirements under EPA/TSCA.

SARA TITLE III DATA

Section 311 & 312 Hazard Categories:

Immediate Health Hazard:	Yes
Delayed Health Hazard:	Yes
Fire Hazard:	No
Reactive Hazard:	No
Sudden Pressure Release Hazard:	No

15. REGULATORY INFORMATION, cont'd

Section 302 Extremely Hazardous Substances: None

Section 313 Toxic Chemicals: Norflurazon (CAS No. 27314-13-2) - 5%

CERCLA/EHS REPORTABLE QUANTITIES (RQ): None

STATE REGULATIONS:

CALIFORNIA (Proposition 65): This product may contain trace amounts of respirable crystalline silica, known to the State of California to cause cancer.

16. OTHER INFORMATION

MSDS Status:

Date This Revision: 31 March 2003

Date Previous Revision: New MSDS

Person Responsible for Preparation: Gary A. Braden

Reasons for Revision: New Product for AMVAC Chemical.

DISCLAIMER:

This information is provided for the limited guidance to the user. While AMVAC believes that the information is, as of the date hereof, reliable, it is the user's responsibility to determine the suitability of the information for its purposes. The user is advised not to construe the information as absolutely complete since additional information may be necessary or desirable when particular, exceptional, or variable conditions or circumstances exist (like combinations with other materials), or because of applicable regulations. No express or implied warranty of merchantability or fitness for a particular purpose or otherwise is made hereunder with respect to the information or the product to which the information relates.

ABBREVIATIONS:

ACGIH	-	American Conference of Governmental Industrial Hygienists
ADR	-	European Agreement Concerning the International Carriage of Dangerous Goods by Road
CERCLA	-	Comprehensive Environmental Response, Compensation, and Liability Act
EPA	-	Environmental Protection Agency
FIFRA	-	Federal Insecticide, Fungicide, and Rodenticide Act
IARC	-	International Agency for Research on Cancer
NTP	-	National Toxicology Program
SARA	-	Superfund Amendments and Reauthorization Act
TSCA	-	Toxic Substances Control Act

This is the last page of this MSDS. There should be 7 pages.