



AQUA-KLEEN(R) GRANULAR AQUATIC HERBICIDE FOR CONTROLLING WATER WEEDS

Material Safety Data Sheet

Date Prepared:

1/28/97 Supersedes Date: 12/18/95

1. CHEMICAL PRODUCT AND COMPANY DESCRIPTION

RHONE-POULENC AG COMPANY
 AGRICULTURAL CHEMICALS
 2 T.W. Alexander Drive
 Research Triangle Pk NC 27709

Emergency Phone Numbers:

FOR EMERGENCIES INVOLVING A SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT
 CONTACT: CHEMTREC (800-424-9300) OR RHONE-POULENC (800-334-7577).

For Product Information:

(800) 334-9745

Product Status:

FIFRA regulated use only.

EPA FIFRA Registration Number:

264-109

Chemical Name or Synonym:

2,4-D, BEE; 2,4-DICHLOROPHOXYACETIC ACID, BUTOXYETHYL ESTER

Molecular Formula:

$C_{14}H_{18}Cl_2O_4$

2. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS Reg Number	OSHA Hazard	Percentage
ACETIC ACID, (2,4-DICHLOROPHOXY)-, 2-BUTOXYETHYL ESTER	1929-73-3	Y	27.6
CRYSTALLINE SILICA AS QUARTZ	14808-60-7	Y	8.7
OTHER INERT INGREDIENTS (TRADE SECRET)	*****	N	BALANCE

3. HAZARDS IDENTIFICATION

A. EMERGENCY OVERVIEW:



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3. HAZARDS IDENTIFICATION (Continued)

Physical Appearance and Odor:
tan granules solid, phenolic odor.

Warning Statements:
CAUTION]

B. POTENTIAL HEALTH EFFECTS:

Acute Eye:
May cause redness, tearing.

Acute Skin:
May be harmful if absorbed through the skin. May produce symptoms similar to those from ingestion.

Acute Inhalation:
Harmful if inhaled. May produce symptoms similar to those from ingestion.

Acute Ingestion:
May be harmful if swallowed. May cause nausea, vomiting, abdominal pain, decreased blood pressure, muscle weakness, muscle spasms.

Chronic Effects:
This product contains clay. Crystalline silica (e.g. quartz) is a naturally-occurring component of clay. Inhalation of crystalline silica may cause pulmonary fibrosis (silicosis). The International Agency for Research on Cancer (IARC) has classified crystalline silica as a probable human carcinogen (Group 2A). (See Section 11 - Chronic.) Prolonged contact can cause liver damage, kidney damage, chronic muscle damage.

4. FIRST AID MEASURES

FIRST AID MEASURES FOR ACCIDENTAL:

Eye Exposure:
Hold eyelids open and flush with a steady, gentle stream of water for at least 15 minutes. Seek immediate medical attention.

Skin Exposure:



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4. FIRST AID MEASURES (Continued)

In case of contact, immediately wash with plenty of soap and water for at least 5 minutes. Seek medical attention if irritation develops or persists. Remove contaminated clothing and shoes. Clean contaminated clothing and shoes before re use.

Inhalation:

Remove victim from immediate source of exposure and assure that the victim is breathing. If breathing is difficult, administer oxygen, if available. If victim is not breathing, administer CPR (cardio-pulmonary resuscitation). Seek immediate medical attention.

Ingestion:

If victim is conscious and alert, give 2-3 glasses of water to drink and induce vomiting by touching back of throat with a finger. Do not induce vomiting or give anything by mouth to an unconscious person. Seek immediate medical attention. Do not leave victim unattended. Vomiting may occur spontaneously. To prevent aspiration of swallowed product, lay victim on side with head lower than waist. If vomiting occurs and the victim is conscious, give water to further dilute the chemical.

MEDICAL CONDITIONS POSSIBLY AGGRAVATED BY EXPOSURE:

Inhalation of product may aggravate existing chronic respiratory problems such as asthma, emphysema or bronchitis. Skin contact may aggravate existing skin disease.

NOTES TO PHYSICIAN:

All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

Treat symptomatically. No specific antidote available.

This product contains a phenoxy herbicide. Myotoxic effects may include muscle fibrillations, myotonia, and muscular weakness. Ingestion of massive doses may result in persistent fall of blood pressure. Myoglobin and hemoglobin may be found in urine. Elevations in lactate dehydrogenase (LDH), SGOT, SGPT and aldolase indicate the extent of muscle damage. It has been suggested that overexposure in humans may affect both the central and peripheral nervous systems. The acute effects on the central nervous system resemble those produced by alcohol or sedative drugs. In isolated cases, peripheral neuropathy and reduced nerve conduction velocities have been reported although these observations may be related to other factors.

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4. FIRST AID MEASURES (Continued)

Gas-liquid chromatography for detecting and measuring chlorophenoxy compounds in blood and urine may be useful in confirming and assessing the magnitude of chlorophenoxy absorption.

5. FIRE FIGHTING MEASURES

FIRE HAZARD DATA:

Flash Point:
Not Applicable

Extinguishing Media:
Recommended (large fire): foam, water spray, Recommended (small fires): dry chemical, carbon dioxide.

Special Fire Fighting Procedures:
Firefighters should wear NIOSH/MSHA approved self-contained breathing apparatus and full protective clothing. Dike area to prevent runoff and contamination of water sources. Dispose of fire control water later.

Unusual Fire and Explosion Hazards:
Under fire conditions, toxic, corrosive fumes are emitted.

Hazardous Decomposition Materials (Under Fire Conditions):
hydrogen chloride
oxides of sulfur
oxides of carbon

6. ACCIDENTAL RELEASE MEASURES

Evacuation Procedures and Safety:
Wear appropriate protective gear for the situation. See Personal Protection information in Section 8.

Containment of Spill:
Follow procedure described below under Cleanup and Disposal of Spill.



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6. ACCIDENTAL RELEASE MEASURES (Continued)

Cleanup and Disposal of Spill:

Avoid creation of dusty conditions. Scrape up and place in appropriate closed container (see Section 7: Handling and Storage). Decontaminate tools and equipment following cleanup.

Environmental and Regulatory Reporting:

Prevent material from entering public sewer system or any waterways. Do not flush to drain. If spilled on the ground, the affected area should be scraped clean and placed in a appropriate container for disposal. Spills may be reportable to the National Response Center (800-424-8802) and to state and/or local agencies.

7. HANDLING AND STORAGE

Minimum/Maximum Storage Temperatures:
Not Available

Handling:

Do not get on skin or in eyes. Do not ingest. Do not breathe dusts. Use handling, storage and disposal procedures that will prevent contamination of water, food or feed.

Storage:

Store in an area that is away from food, feedstuffs, fertilizers and seed.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Introductory Remarks:

These recommendations provide general guidance for handling this product. Because specific work environments and material handling practices vary, safety procedures should be developed for each intended application. While developing safe handling procedures, do not overlook the need to clean equipment and piping systems for maintenance and repairs. Waste resulting from these procedures should be handled in accordance with Section 13: Disposal Considerations.

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8. EXPOSURE CONTROLS/PERSONAL PROTECTION (Continued)

Assistance with selection, use and maintenance of worker protection equipment is generally available from equipment manufacturers.

Exposure Guidelines:

Exposure limits represent regulated or recommended worker breathing zone concentrations measured by validated sampling and analytical methods, meeting the regulatory requirements. The following limits apply to this material, where, if indicated, S=skin and C=ceiling limit:

ACETIC ACID, (2,4-DICHLOROPHENOXY)-, 2-BUTOXYETHYL ESTER

	Notes	TWA	STEL
RPI		5 mg/cu m	

CRYSTALLINE SILICA AS QUARTZ

	Notes	TWA	STEL
ACGIH		0.1 mg/cu m	
OSHA		0.1 mg/cu m	

Engineering Controls:

Where engineering controls are indicated by use conditions or a potential for excessive exposure exists, the following traditional exposure control techniques may be used to effectively minimize employee exposures: local exhaust ventilation at the point of generation.

Respiratory Protection:

When respirators are required, select NIOSH/MSHA approved equipment based on actual or potential airborne concentrations and in accordance with the appropriate regulatory standards and/or industrial recommendations.

Under normal conditions, in the absence of other airborne contaminants, the following devices should provide protection from this material up to the conditions specified by the appropriate OSHA, WHMIS or ANSI standard(s): Air-purifying (half-mask/full-face) respirator with cartridges/canister approved for use against pesticides.

Under conditions immediately dangerous to life or health, or emergency conditions with unknown concentrations, use a full-face positive pressure air-supplied respirator equipped with an emergency escape air supply unit or use a self-contained breathing apparatus unit.



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8. EXPOSURE CONTROLS/PERSONAL PROTECTION (Continued)

Eye/Face Protection:

Eye and face protection requirements will vary dependent upon work environment conditions and material handling practices. Appropriate ANSI Z87 approved equipment should be selected for the particular use intended for this material.

Eye contact should be prevented through use of chemical safety glasses with side shields or splash proof goggles. An emergency eye wash must be readily accessible to the work area.

Skin Protection:

Skin contact must be prevented through the use of permeation resistant clothing, gloves and footwear, selected with regard for use conditions and exposure potential. An emergency shower must be readily accessible to the work area. Consideration must be given both to durability as well as permeation resistance.

Work Practice Controls:

Personal hygiene is an important work practice exposure control measure and the following general measures should be taken when working with or handling this material:

- (1) Do not store, use, and/or consume foods, beverages, tobacco products, or cosmetics in areas where this material is stored.
- (2) Wash hands and face carefully before eating, drinking, using tobacco, applying cosmetics, or using the toilet.
- (3) Wash exposed skin promptly to remove accidental splashes of contact with this material.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical and Chemical properties here represent typical properties of this product. Contact the business area using the Product Information phone number in Section 1 for its exact specifications.

Physical Appearance:

tan granules solid.

Odor:

phenolic odor.





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9. PHYSICAL AND CHEMICAL PROPERTIES (Continued)

pH:
Not Applicable

Specific Gravity:
Not Available

Water Solubility:
insoluble

Melting Point Range:
Not Available

Boiling Point Range:
Not Available

Vapor Pressure:
Not Available

Vapor Density:
Not Available

Molecular Weight:
321.22

10. STABILITY AND REACTIVITY

Chemical Stability:
This material is stable under normal handling and storage conditions described in Section 7.

Conditions To Be Avoided:
none known

Materials/Chemicals To Be Avoided:
strong oxidizing agents
bases
acids

The Following Hazardous Decomposition Products Might Be Expected:
Decomposition Type: thermal
hydrogen chloride



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10. STABILITY AND REACTIVITY (Continued)

oxides of sulfur

Hazardous Polymerization Will Not Occur.**Avoid The Following To Inhibit Hazardous Polymerization:**
not applicable

11. TOXICOLOGICAL INFORMATION

Acute Eye Irritation:**Toxicological Information and Interpretation**
eye - eye irritation, rabbit.
Slightly irritating.**Acute Skin Irritation:****Toxicological Information and Interpretation**
skin - skin irritation, rabbit.
Non-irritating to minimally irritating.**Acute Dermal Toxicity:****Toxicological Information and Interpretation**
LD50 - lethal dose 50% of test species, > 2000 mg/kg, rabbit.**Acute Respiratory Irritation:**

No test data found for product.

Acute Inhalation Toxicity:

No test data found for product.

Acute Oral Toxicity:**Toxicological Information and Interpretation**
LD50 - lethal dose 50% of test species, 4050 mg/kg, rat.**Chronic Toxicity:**This product contains the substances that are considered to be
"probable" or "suspected" human carcinogens as follows:

Ingredient Name	Regulatory Agency Listing Carcinogen			
	OSHA	IARC	NTP	ACGIH
CRYSTALLINE SILICA AS QUARTZ	No	No	Yes	No
CHLOROPHENOXY HERBICIDES	No	2B	No	No



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11. TOXICOLOGICAL INFORMATION (Continued)

SILICA, CRYSTALLINE

No

2A

No

No

Chlorophenoxy herbicides are listed as class 2B carcinogens (limited evidence for carcinogenicity in humans) by the International Agency for Research on Cancer (IARC). The Science Advisory Panel of USEPA has given a Class D classification (not classifiable as to human carcinogenicity) and has required additional animal studies on 2,4-D. Various animal cancer tests have shown no reliable positive association between 2,4-D exposure and cancer. Recent results from a lifetime study in laboratory animals did not show evidence of carcinogenic effects caused by 2,4-D. Animal studies with the active ingredients in this product have shown that they are not mutagenic or teratogenic.

12. ECOLOGICAL INFORMATION

Ecotoxicological Information:

For ecotoxicological data call the product information phone number listed in Section 1.

Chemical Fate Information:

For chemical fate data call the product information phone number listed in Section 1.

13. DISPOSAL CONSIDERATIONS

Waste Disposal Method:

Chemical additions, processing or otherwise altering this material may make the waste management information presented in this MSDS incomplete, inaccurate or otherwise inappropriate. Please be advised that state and local requirements for waste disposal may be more restrictive or otherwise different from federal laws and regulations. Consult state and local regulations regarding the proper disposal of this material.

Container Handling and Disposal:

Any containers or equipment used should be decontaminated immediately after use.



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13. DISPOSAL CONSIDERATIONS (Continued)

Consult state and local regulations regarding the proper disposal of container.

EPA Hazardous Waste - YES

14. TRANSPORTATION INFORMATION

Transportation Status:

The listed Transportation Classification does not address regulatory variations due to changes in package size, mode of shipment or other regulatory descriptors.

US Department of Transportation
Shipping Name:
NOT REGULATED

15. REGULATORY INFORMATION

FEDERAL REGULATIONS

TSCA Inventory Status:

This product is excluded from TSCA because it is solely for FIFRA regulated use.

SARA Title III Hazard Classes:

- Fire Hazard - NO
- Reactive Hazard - NO
- Release of Pressure - NO
- Acute Health Hazard - YES
- Chronic Health Hazard - YES

SARA Extremely Hazardous Substances (EHS)/CERCLA Hazardous Substances

Ingredient	CERCLA/SARA RQ	SARA EHS TPQ
ACETIC ACID, (2,4-DICHLOROPHENOXY)-, 2-BUTOXYETHYL ESTER	100 lbs	
UNLISTED HAZ. WASTE CHARACTERISTIC OF BP TOXICITY - 2,4-D	100 lbs	


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15. REGULATORY INFORMATION (Continued)
STATE REGULATIONS:

This product contains the following components that are regulated under California Proposition 65:

ingredient name	Cancer List	Reprod. List	No Sign. Risk California	Lvl (ug/day) RPI
SILICA, CRYSTALLINE (AIRBORNE PARTICLES OF RESPIRABLE SIZE)	Y	N	ND	ND

16. OTHER INFORMATION
National Fire Protection Association Hazard Ratings--NFPA(R):

- 2 Health Hazard Rating--Moderate
- 1 Flammability Rating--Slight
- 0 Reactivity Rating--Minimal

National Paint & Coating Hazardous Materials Identification System--HMIS(R):

- 1 Health Hazard Rating--Slight
- 1 Flammability Rating--Slight
- 0 Reactivity Rating--Minimal

Reason for Revisions:

Change and/or addition made to Section 3, Section 11.

Key Legend Information:

ACGIH - American Conference of Governmental Industrial Hygienists
 OSHA - Occupational Safety and Health Administration
 TLV - Threshold Limit Value
 PEL - Permissible Exposure Limit
 TWA - Time Weighted Average
 STEL - Short Term Exposure Limit
 NTP - National Toxicology Program
 IARC - International Agency for Research on Cancer

Disclaimer:

The information herein is given in good faith but no warranty, expressed or implied, is made.