

Safety Data Sheet - GHS

1. IDENTIFICATION: CHEMICAL PRODUCT AND COMPANY

PRODUCT NAME: Kyber™
EPA REGISTRATION NUMBER: 59639-236
VC NUMBER(S): 2030, 2096 (and other similar formulations)
SYNONYM(S): V-10448 2.64 SC Herbicide
PRODUCT DESCRIPTION: Herbicide

Kyber™ is a trademark of Dow AgroSciences, DuPont or Pioneer and their affiliated companies or respective owners

PRODUCED FOR:
 Dow AgroSciences LLC
 9330 Zionsville Road
 Indianapolis, IN 46268

EMERGENCY TELEPHONE NUMBERS
 HEALTH EMERGENCY OR SPILL (24 hr):
 (800) 992-5994
 TRANSPORTATION (24 hr.): CHEMTREC
 (800) 424-9300 or (202) 483-7616

PRODUCT INFORMATION
 AGRICULTURAL PRODUCTS: (800) 682-5368

2. HAZARDS IDENTIFICATION

Classification - (per U.S. OSHA 29 CFR 1910.1200 (Hazcom 2012))

Acute toxicity - Oral	Category 4
Acute toxicity - Inhalation (Dusts/Mists)	Category 4
Reproductive toxicity	Category 2

Label elements

Signal Word

WARNING



Hazard statements

Harmful if swallowed
 Harmful if inhaled
 Suspected of damaging fertility or the unborn child

Precautionary statements**Prevention**

Obtain, retain and follow all safety instructions before use
 Wear protective gloves/protective clothing/eye protection
 Wash face, hands and any exposed skin thoroughly after handling
 Do not eat, drink or smoke when using this product
 Avoid breathing dust/fume/gas/mist/vapors/spray
 Use only outdoors or in a well-ventilated area

Response

IF EXPOSED OR CONCERNED: Get medical advice/attention
 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
 IF SWALLOWED: Get medical help. Rinse mouth.

Storage

None

Disposal

Dispose of contents/container in accordance with local/regional/national regulations

Hazards not otherwise classified (HNOC)

Very toxic to aquatic life with long lasting effects.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical name	CAS No.	Weight-%	TRADE SECRET
Flumioxazin	103361-09-7	5.29	
Pyroxasulfone	447399-55-5	6.76	
Metribuzin	21087-64-9	15.86	
Propylene glycol	57-55-6	4 - 5	*
Other ingredients	Various CAS#s	67 - 68	*

* The chemical name, CAS number and/or exact percentage have been withheld as a trade secret

Specific information on other ingredients for the management of exposures, spills, or safety assessments can be obtained by a treating physician or nurse by calling **(800) 992-5994** at any time.

4. FIRST AID MEASURES

EMERGENCY NUMBER (800) 992-5994**EYE CONTACT:**

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 treatment advice.

SKIN CONTACT:

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.

INGESTION:

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. Do not give anything to an unconscious person.

INHALATION:

Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice.

NOTES TO PHYSICIAN:

Treat symptomatically and supportively

5. FIRE FIGHTING MEASURES

Flash point °C	Not Determined
Flash point °F	Not Determined
AUTOIGNITION:	Not Determined
EXTINGUISHING MEDIA:	Dry chemical powder, carbon dioxide, water spray Do NOT use water jet or straight streams

FIRE FIGHTING INSTRUCTIONS: As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH approved (or equivalent) and full protective gear. Prevent extinguishing media run off from entering drains, sewers, and bodies of water.

HAZARDOUS DECOMPOSITION PRODUCTS: Under fire conditions some components of this product may decompose. The smoke may contain unidentified toxic and/or irritating compounds. Keep people away. Isolate fire area and deny unnecessary entry.

6. ACCIDENTAL RELEASE MEASURES

DOW AGROSCIENCES EMERGENCY PHONE NUMBER: (800) 992-5994

CHEMTREC EMERGENCY PHONE NUMBER: (800) 424-9300

CONTAINMENT: Avoid runoff into storm sewers and ditches which lead to waterways. Contain spilled liquids with dry sorbents. Keep well ventilated. Wear proper personal protective equipment.

CLEANUP: Clean up spill immediately. Absorb spill with inert material (such as dry sand or earth), then place in a chemical waste container. Wash area with soap and water. Pick up wash liquid with additional absorbent and place in a chemical waste container. Prevent wash water from entering surface water or drains. Wear proper personal protective equipment.

7. HANDLING AND STORAGE**HANDLING:**

Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Remove and wash contaminated clothing before reuse. 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.

STORAGE:

Keep in original container. Store in cool, dry, secure place. Do not put formulation or dilute spray solution into food or drink containers. Do not contaminate water, food or feed by storage or disposal. Do not store or transport near food or feed. Not for use or storage in or around the home.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

EYES & FACE: Do not get this material in your eyes. Eye contact can be avoided by wearing protective eyewear.

RESPIRATORY PROTECTION: Not usually required. Use this material in a well ventilated area. If necessary, use a NIOSH approved air purifying respirator with a dust-mist filter / organic vapor cartridge combination.

SKIN & HAND PROTECTION: Applicators and other handlers must wear: long-sleeved shirt and long pants, shoes plus socks and chemical-resistant gloves made of any waterproof material.

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.

ENGINEERING CONTROLS: When handlers use closed systems in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides[40 CFR 170.240(d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

EXPOSURE LIMITS

Chemical name	ACGIH Exposure Limits	OSHA Exposure Limits	Manufacturer's Exposure Limits
Flumioxazin	None	None	None
Pyroxasulfone	None	None	None
Metribuzin	TWA: 5 mg/m ³	(vacated) TWA: 5 mg/m ³	None
Propylene glycol	None	None	None
Other ingredients	Inhalable particles: 10 mg/m ³ Respirable particles: 3 mg/m ³	None	None

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:		Vapor pressure	Not determined
Physical State	Liquid	Vapor density	Not determined
Color	Opaque off-white	Specific Gravity	Not determined
Odor	Moderately strong	Water solubility	Miscible in water
pH	6-8 @ 25°C (1% dilution)	Solubility in other solvents	Not determined
Melting point / freezing point	Not determined	Partition coefficient	Not determined
Boiling point / boiling range	Not determined	Autoignition temperature	Not determined
Flash point	Not determined	Decomposition temperature	Not determined
Evaporation rate	Not determined	Viscosity	34.7 cP @ 20° C 19.4 cP @ 40° C
Flammability (solid, gas)	Not determined	Explosive properties	Not determined
Flammability Limits in Air:		Oxidizing properties	Not determined
Upper flammability limits	Not determined	Liquid Density	1.12 - 1.13 g/mL
Lower flammability limits	Not determined	Bulk density	Not determined

10. STABILITY AND REACTIVITY

Reactivity

No data available

Chemical stability

Stable under recommended storage conditions.

Possibility of Hazardous Reactions

None under normal processing.

Hazardous polymerization

No information available.

Conditions to avoid

Extremes of temperature and direct sunlight.

Incompatible materials

None known based on information supplied.

Hazardous Decomposition Products

None known based on information supplied.

11. TOXICOLOGICAL INFORMATION

ACUTE TOXICITY:

The following information is for this product formulation unless noted differently.

Oral Toxicity LD ₅₀ (rats)	1,750 mg/kg	EPA Tox Category	III
Dermal Toxicity LD ₅₀ (rats)	> 5,000 mg/kg	EPA Tox Category	IV
Inhalation Toxicity LC ₅₀ (rats)	> 2.15 mg/L (4 h)	EPA Tox Category	IV
Eye Irritation (rabbits)	Minimally irritating	EPA Tox Category	IV
Skin Irritation (rabbits)	Slightly irritating	EPA Tox Category	IV
Skin Sensitization (guinea pigs)	Non-sensitizer	EPA Tox Category	Not applicable

CARCINOGEN CLASSIFICATION

Chemical name	IARC Group 1 or 2	OSHA - Select Carcinogens	NTP Carcinogen List
None			

TOXICITY OF FLUMIOXAZIN TECHNICAL:

SUBCHRONIC: The lowest no-observable-effect-level (NOEL) in subchronic studies was 30 ppm in the three-month toxicity study in rats.

CHRONIC/CARCINOGENICITY: In a one year dog feeding study NOEL is 10 mg/kg/day. Dietary administration of Flumioxazin Technical for 18 months there was no evidence of any treatment-related oncogenic effect. The NOEL for this study is 300 ppm. Dietary administration of Flumioxazin Technical for 24 months, no evidence of an oncogenic effect was observed. The NOEL for this study is 50 ppm.

DEVELOPMENTAL TOXICITY: Flumioxazin Technical produces developmental toxicity in rats in the absence of maternal toxicity at doses of 30 mg/kg/day by the oral route and 300 mg/kg/day by the dermal route. No developmental toxicity was noted in rabbits at doses up to 3000 mg/kg/day, a dose well above the maternal NOEL of 1000 mg/kg/day.

Mechanistic studies indicate that the effects seen in the rat are highly unlikely to occur in the human and that flumioxazin would not be a developmental toxicant in the human.

REPRODUCTION: Reproductive toxicity was observed in F1 males, P1 females and F1 females at 300 ppm Flumioxazin Technical, the highest dose tested and a dose that also produced signs of systemic toxicity. Toxicity was also observed in the F1 and F2 offspring at doses of 200 ppm and greater.

MUTAGENICITY: Flumioxazin Technical does not present a genetic hazard.

TOXICITY OF PYROXASULFONE TECHNICAL:

SUBCHRONIC: The NOAEL in rats was 50 ppm. No neurotoxicity was observed at acute doses to rats as high as 2000 mg/kg.

CHRONIC/CARCINOGENICITY: Pyroxasulfone was not carcinogenic in lifetime feeding studies in mice. Pyroxasulfone produced an increased incidence of urinary bladder transitional cell papillomas in male rats in a two-year carcinogenicity study. The tumors seen with Pyroxasulfone were caused through a non-genotoxic mechanism, which is not relevant at low doses.

REPRODUCTION: Pyroxasulfone did not produce effects on fertility or the embryo at the dosage of which general toxicity to parental animals was observed.

MUTAGENICITY: Pyroxasulfone is not mutagenic according to results for an *in vitro* reverse mutation test, chromosomal aberration test and *in vivo* mouse bone marrow micronucleus test.

TOXICITY OF TOXICITY OF METRIBUZIN TECHNICAL:

CHRONIC/CARCINOGENICITY: Chronic Toxicity – Metribuzin: Dogs were administered metribuzin for 2 the NOEL was 100 ppm. In 2 year dietary study with rats the systemic NOEL was 30 ppm. Carcinogenicity. Metribuzin carcinogenicity –There was no evidence of carcinogenic potential observed.

DEVELOPMENTAL TOXICITY: Metribuzin caused developmental toxicity only at dose levels toxic to the dams. The developmental effects seen with Metribuzin are related to maternal toxicity.

REPRODUCTION: Metribuzin caused reproduction toxicity in a two-generation study in rats only at dose levels also toxic to the parent animals. The reproduction toxicity seen with Metribuzin is related to parental toxicity.

MUTAGENICITY: Metribuzin was not mutagenic or genotoxic based on the overall weight of evidence in a battery of *in vitro* and *in vivo* tests.

12. ECOLOGICAL INFORMATION

AVIAN TOXICITY:

Based upon EPA designation, Flumioxazin Technical is practically non-toxic to avian species. The following results were obtained from studies with Flumioxazin Technical:

Oral LD₅₀ bobwhite quail: greater than 2,250 ppm
Dietary LC₅₀ bobwhite quail: greater than 5,620 ppm
Dietary LC₅₀ mallard duck: greater than 5,620 ppm.

Flumioxazin Technical in the diet. In mallard ducks, a slight, but not statistically significant reduction in hatchlings and 14-day old survivors was observed. Based on a possible, slight effect on egg production at 500 ppm, the NOEL for this study was 250 ppm.

The following results were obtained from studies with Pyroxasulfone Technical:

LD₅₀ bobwhite quail: greater than 2250 mg/kg

AQUATIC ORGANISM TOXICITY: Based upon EPA designation, Flumioxazin Technical is slightly to moderately toxic to freshwater fish; moderately toxic to freshwater invertebrates; moderately toxic to estuarine/marine fish and moderately to highly toxic to estuarine/marine invertebrates, based on the following tests:

96-hour LC₅₀ rainbow trout: 2.3 mg/L
 96-hour LC₅₀ bluegill sunfish: greater than 21 mg/L
 48-hour LC₅₀ Daphnia magna: greater than 5.5 mg/L
 96-hour LC₅₀ sheepshead minnow: greater than 4.7 mg/L
 96-hour (shell deposition) EC₅₀ eastern oyster: 2.8 mg/L
 96-hour LC₅₀ mysid shrimp: 0.23 mg/L
 Fish early life-stage (rainbow trout): NOEC >7.7 µg/L, <16 µg/L
 Chronic toxicity (mysid shrimp): NOEC >15 µg/L, <27 µg/L
 Chronic toxicity (Daphnia magna): NOEC >52 µg/L, <99 µg/L.

Pyroxasulfone Technical is very toxic to aquatic organisms; special attention should be given to aquatic plants. Based upon EPA designation, the following test results are based on Pyroxasulfone Technical:

96-hour LC₅₀ rainbow trout: greater than 2.2 mg/L
 96-hour LC₅₀ bluegill: greater than 2.8 mg/L
 48-hour LC₅₀ Daphnia magna: greater than 4.4 mg/L
 96-hour LC₅₀ sheepshead minnow: greater than 3.3 mg/L
 96-hour EC₅₀ algae = 0.00038 mg/L
 7-day EC₅₀ Spirodela polyrhiza = 0.0055 mg/L
 14-day LC₅₀ Earthworm = 997 mg/kg

OTHER NON-TARGET ORGANISM TOXICITY:

Flumioxazin Technical is practically non-toxic to bees. The acute contact LC₅₀ in bees was greater than 105 µg/bee.
 Pyroxasulfone Technical is practically non-toxic to bees. The acute contact (48-hour) LD₅₀ in bees was greater than 100 µg/bee.

OTHER ENVIRONMENTAL INFORMATION:

This product is toxic to non-target plants and aquatic invertebrates. Do not apply directly to water, to areas where surface water is present, or to intertidal areas below mean high water mark. Do not apply where runoff is likely to occur. Do not apply where weather conditions favor drift from areas treated. Do not contaminate water when cleaning equipment or disposing of equipment washwater or rinsate.

13. DISPOSAL CONSIDERATIONS

Check government regulations and local authorities for approved disposal of this material. Dispose of in accordance with applicable laws and regulations.

14. TRANSPORTATION INFORMATION

DOT (ground) SHIPPING NAME: Not regulated for domestic ground transport by U.S. DOT

ICAO/IATA SHIPPING NAME: UN3082 Environmentally Hazardous Substance, Liquid, N.O.S. (Flumioxazin, Metribuzin), 9, III, Marine Pollutant

REMARKS:

- Single or inner packaging less than 5 L (liquid) or 5 Kg net (solids) excepted from Dangerous Goods regulations – see IATA Special Provision A197
- For US shipping, Emergency Response Guidebook No. 171

IMDG SHIPPING NAME: UN3082 Environmentally Hazardous Substance, Liquid, N.O.S. (Flumioxazin, Metribuzin), 9, III, Marine Pollutant

REMARKS:

- Single or inner packaging less than 5 L (liquid) or 5 Kg net (solids) excepted from Dangerous Goods regulations – see IMDG 2.10.2.7
- For US shipping, Emergency Response Guidebook No. 171

15. REGULATORY INFORMATION

EPA-FIFRA LABEL INFORMATION

Pesticide products in the U.S. are registered by the EPA under FIFRA and are subject to certain labeling requirements under federal pesticide law. These requirements may differ from the classification criteria and hazard information required by OSHA GHS for safety data sheets, and for workplace labels of non-pesticide chemicals. The following is the hazard information as required on the FIFRA pesticide label:

EPA FIFRA SIGNAL WORD: CAUTION

- *Harmful if swallowed*
- *Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet.*
- *Remove contaminated clothing and wash before re-use.*
- *Keep out of reach of children.*

PESTICIDE REGULATIONS: All pesticides are governed under FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act). Therefore, the regulations presented below are pertinent only when handled outside of the normal use and applications of pesticides. This includes waste streams resulting from manufacturing/formulation facilities, spills or misuse of products, and storage of large quantities of products containing hazardous or extremely hazardous substances.

U.S. FEDERAL REGULATIONS: Ingredients in this product are reviewed against an inclusive list of federal regulations. Therefore, the user should consult appropriate authorities. The federal regulations reviewed include: Clean Water Act, SARA, CERCLA, RCRA, DOT, TSCA and OSHA. If no components or information is listed in the space below this paragraph, then none of the regulations reviewed are applicable.

Metribuzin

SARA 313 Chemicals 1.0% de minimis concentration

SARA (311, 312):

Immediate Health:	Yes
Chronic Health:	No
Fire:	No
Sudden Pressure:	No
Reactivity:	No

STATE REGULATIONS: Each state may promulgate standards more stringent than the federal government. This section cannot encompass an inclusive list of all state regulations. Therefore, the user should consult state or local authorities.

Metribuzin

MA Right To Know	Present
NJ Right To Know	1302
PA Right To Know	Present
MN Hazardous Substance	Present

Propylene glycol

NJ Right To Know	3595
PA Right To Know	Present
RI Right To Know	Listed

MN Hazardous Substance Present

For information regarding potential adverse health effects from exposure to this product, refer to Sections 2 and 11.

16. OTHER INFORMATION

REASON FOR ISSUE: General Update for distribution
SDS NO.: 0556
EPA REGISTRATION NUMBER: 59639-236
REVISION NUMBER: 2
REVISION DATE: 10/26/2020
SUPERCEDES DATE: 08/07/2020
RESPONSIBLE PERSON(S): Dow AgroSciences LLC

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This SDS 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 as required by the Occupational Health and Safety Act (29 CFR 1910.1200, "Hazcom").

The product label provides information specifically for product use in the ordinary course. All necessary hazard classification and appropriate precautionary use, storage, and disposal information is set forth on that label or labeling accompanying the pesticide or to which reference is made on the label.

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