

Material Safety Data Sheet

Knox Fertilizer Company, Inc.

SECTION 1

PRODUCT IDENTIFICATION

TRADE NAME: **Shaw's® Turf Food Broadleaf Weed Control 1580/Viper™**

EPA REGISTRATION NO: 228-413-8378
CHEMICAL FAMILY: Fertilizer with Herbicide
CHEMICAL NAME/SYNONYMS: Viper™

MANUFACTURER/FORMULATOR: Knox Fertilizer Co., Inc
P.O. Box 248
Knox, IN 46534

EMERGENCY PHONE: 1.800.424.9300

SECTION 2

COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Ingredients	CAS No.	% by Weight	PEL/TLV
Isooctyl ester of 2,4-D	1928-43-4	< 1.20	None Established
2,4-Dichlorophenoxy Acid	94-75-7	< 0.17	None Established
Mecoprop-p	16484-77-8	< 0.40	None Established
Dicamba	1918-00-9	< 0.09	None Established
Inert Ingredients		> 95.00	

SECTION 3

HAZARDS IDENTIFICATION

Emergency Overview:

Appearance and Odor: Multi-colored to solid colored granular mixture with mild phenolic odor.

Warning Statements: Keep out of reach of children. CAUTION. Causes moderate eye irritation. Avoid contact with skin, eyes or clothing.

Potential Health Effects:

Likely Routes of Exposure: Skin and eye contact.

Eye Contact: This product is minimally irritating.

Skin Contact: This product is no more than slightly toxic and no more than moderately irritating based on toxicity studies.

Ingestion: This product is no more than slightly toxic if ingested based on toxicity studies.

Inhalation: This product is no more than slightly toxic if inhaled based on toxicity studies.

Medical Conditions 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.

Potential Environmental Effects:

Drift or runoff of this product may adversely affect non-target plants.

SECTION 4**FIRST AID MEASURES**

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. Call a poison control center or doctor for treatment advice.

SKIN: 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 by mouth 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.

SECTION 5**FIRE FIGHTING MEASURES**

FLASH POINT (Method):

Not Applicable

FLAMMABLE LIMITS (LEL & UEL):

Not Applicable

EXTINGUISHING MEDIA:

Considered non-combustible. Use medium appropriate to surrounding fire: Dry chemical, CO₂, foam, water spray or fog. May include but are not limited to oxides of carbon, hydrogen chloride, hydrogen fluoride, oxides of nitrogen, oxides of phosphorus, oxides of sulfur, hydrogen sulfide.

HAZARDOUS COMBUSTION PRODUCTS:

May include but are not limited to oxides of carbon, hydrogen chloride, hydrogen fluoride, oxides of nitrogen, oxides of phosphorus, oxides of sulfur, hydrogen sulfide.

SPECIAL FIRE FIGHTING PROCEDURES:

Firefighters should wear NIOSH/MSHA approved self-contained breathing apparatus and full fire-fighting turn out gear.

UNUSUAL FIRE & EXPLOSION HAZARDS:

If water is used to fight fire, contain runoff, using dikes to prevent contamination of water supplies. Dispose of fire control water later.

SECTION 6**ACCIDENTAL RELEASE MEASURES**

Personal Precautions: Wear appropriate protective gear for the situation. See Personal Protection information in Section 8.

Environmental Precautions: Prevent material from entering public sewer systems or any waterways. Do not flush to drain. Large spills to soil or similar surfaces may necessitate removal of topsoil. The affected area should be removed and placed in an appropriate container for disposal.

Methods for Containment: Contain spill, sweep or scoop up and place in container for possible land application according to label directions or for proper disposal.

Methods for Clean-up and Disposal: Wash entire spill area with a detergent slurry, absorb and sweep into container for disposal.

Other Information: Large spills may be reportable to the National Response Center (800.424.8802) and to state and/or local agencies.

SECTION 7**HANDLING AND STORAGE**

HANDLING: Avoid contact with eyes, skin or clothing. Wear long pants, long-sleeved shirt, socks and shoes when applying this product. After using this product, remove clothing and launder separately before reuse, and promptly and thoroughly wash hands and exposed skin with soap and water. Do not allow people (other than applicator) or pets on treatment area during application. Do not enter treatment areas until dust has settled.

STORAGE: Always use original container to store pesticides in a secured warehouse or storage building. Do not store near open containers of fertilizer, seed or other pesticides. Do not contaminate water, food or feed by storage or disposal.

SECTION 8

EXPOSURE CONTROL/PERSONAL PROTECTION

ENGINEERING CONTROLS: Where engineering controls are indicated by specific use conditions or a potential for excessive exposure, use local exhaust ventilation at the point of generation.

RESPIRATORY PROTECTION: Not normally required. If vapors or dusts exceed acceptable levels, wear a MSHA/NIOSH approved pesticide respirator.

EYE PROTECTION: Chemical goggles or shielded safety glasses.

SKIN PROTECTION: Wear protective clothing: long-sleeved shirts and long pants, socks and shoes.

WORKER HYGENIC PRACTICES: After using product, remove clothing and launder separately before reuse. Promptly and thoroughly wash hands and exposed skin with soap and water. Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.

GENERAL COMMENTS: Facilities storing or utilizing this material should be equipped with an eyewash facility and safety shower.

SECTION 9

PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE AND ODOR: Multi-colored to solid colored granular mixture with mild phenolic odor.

SPECIFIC GRAVITY: Not Applicable

VAPOR PRESSURE: Not Applicable

BOILING POINT: Not Applicable

PERCENT VOLATILE: Not Applicable

EVAPORATION RATE: Not Applicable

SOLUBILITY IN WATER: Not Soluble

VAPOR DENSITY: Not Applicable

MELTING POINT: Not Applicable

pH: Not Applicable

BULK DENSITY: 45 – 65 lbs./cu ft.

SECTION 10

STABILITY AND REACTIVITY

STABILITY: Stable

CONDITIONS TO AVOID: Extremely high temperatures; ignition sources

INCOMPATIBLE MATERIALS: Strong oxidizers or strong alkalies

HAZARDOUS DECOMPOSITION PRODUCTS: Oxides of nitrogen, carbon and sulfur

HAZARDOUS POLYMERIZATION: Not known to occur.

SECTION 11

TOXICOLOGICAL INFORMATION

TOXICOLOGICAL DATA:

Oral: Rat LD₅₀: >5,000 mg/kg; FIFRA Category IV

Dermal: Rabbit LD₅₀: >5,000 mg/kg; FIFRA Category IV

Inhalation: Rat 4-hr LC₅₀: Not applicable. Test concentration could not be generated; FIFRA Category IV

Eye Irritation: Rabbits: Corneal opacity and conjunctivitis resolving by day 4; FIFRA Category III

Skin Irritation: Rabbits: Slight irritant. Very slight to well defined erythema was noted at 5 of 6 test sites one hour after patch removal. All sites were free of dermal irritation by 24 hours; FIFRA Category IV

Skin Sensitization: Not a contact sensitizer in guinea pigs following repeated skin exposure.

Subchronic (Target Organ) Effects: Repeated overexposure to phenoxy herbicides may cause effects to liver, kidneys, blood chemistry, and gross motor function. Rare cases of peripheral nerve damage have been reported, but extensive animal studies have failed to substantiate these observations, even at high doses for prolonged periods.

Carcinogenicity/Chronic Health Effects: The International Agency for Research on Cancer (IARC) lists exposure to chlorophenoxy herbicides as a Class 2B carcinogen, the category for limited evidence for carcinogenicity in humans. However, more current 2,4-D lifetime feeding studies in rats and mice, as well as an MCPP lifetime feeding study in rats, did not show carcinogenic potential. The USEPA has given 2,4-D and dicamba a Class D classification (not classifiable as to human carcinogenicity).

Reproductive Toxicity: No impairment of reproductive function attributable to 2,4-D have been noted in laboratory animal studies. Animal tests with dicamba have not demonstrated reproductive effects.

Developmental Toxicity: Studies in laboratory animals with 2,4-D and MCPP have shown decreased fetal body weights and delayed development in the offspring at doses toxic to mother animals. Animal tests with dicamba have not demonstrated developmental effects.

Genotoxicity: There have been some positive and some negative studies, but the weight of evidence is that neither 2,4-D nor MCPP is mutagenic. Animal tests with dicamba have not demonstrated mutagenic effects.

CARCINOGENICITY ASSESSMENT:

Component	Regulatory Agency Listing As Carcinogen			
	ACGIH	IARC	NTP	OSHA
Chlorophenoxy Herbicides	No	2B	No	No

SECTION 12

ECOLOGICAL INFORMATION

Drift or runoff may adversely affect non-target plants. 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 nor pour washwater on the ground; spray or drain over a large area away from wells and other water sources.

Most cases of groundwater contamination involving phenoxy herbicides such as 2,4-D and MCPP-p have been associated with mixing/loading and disposal sites. Caution should be exercised when handling these phenoxy pesticides at such sites to prevent contamination of groundwater supplies. Use of a closed system for mixing or transferring this pesticide will reduce the probability of spills. Placement of the mixing/loading equipment on an impervious pad to contain spills will help prevent groundwater contamination.

ECOTOXICITY:

Data on 2,4-D:

96 hour LC₅₀ Bluegill: 524 mg/l
 96 hour LC₅₀ Rainbow Trout: 250 mg/l
 48 hour EC₅₀ Daphnia: 184 mg/l
 Bobwhite Quail Oral LD₅₀: 500 mg/kg
 Mallard Duck 8 day Dietary LC₅₀: >5620 ppm

Data on Dicamba:

96 hour LC₅₀ Bluegill: 135 mg/l
 96 hour LC₅₀ Rainbow Trout: 135 mg/l
 48 hour EC₅₀ Daphnia: 110 mg/l
 Bobwhite Quail 8 day Dietary LC₅₀: >10000 ppm
 Mallard Duck 8 day Dietary LC₅₀: >10000 ppm

Data on Mecoprop-p:

96 hour LC₅₀ Bluegill: >100 mg/l (literature)
 48 hour EC₅₀ Daphnia: >270 mg/l (literature)
 72 hour EC₅₀ Green Algae: >270 mg/l (literature)

ENVIRONMENTAL FATE:

In laboratory and field studies, 2,4-D 2-ethylhexyl ester rapidly de-esterified to parent acid in the environment. The typical half-life of the resultant 2,4-D acid ranged from a few days to a few weeks. In soil, mecoprop-p is microbially degraded with a typical half-life of approximately 11 to 15 days. Dicamba has low bioaccumulation potential, is not persistent in soil, is highly mobile in soil and degrades rapidly.

SECTION 13

DISPOSAL CONSIDERATIONS

PRODUCT DISPOSAL: Waste resulting from the use of this product that cannot be used or chemically reprocessed should be disposed of in a landfill approved for pesticide disposal or in accordance with applicable Federal, state or local procedures.

CONTAINER DISPOSAL: Do not reuse bag. Completely empty bag into application equipment. Dispose of emptied bag(s) in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

SECTION 14

TRANSPORT INFORMATION

DOT SHIPPING DESCRIPTION: Not regulated
U.S. SURFACE FREIGHT CLASSIFICATION: Fertilizing compounds, NOI; Dry (NMFC 68140, Sub 5; Class 50)

SECTION 15

REGULATORY INFORMATION

SARA TITLE III

SEC 311/312:

- Y Immediate (Acute Health)
- Y Delayed (Chronic Health)
- N Fire
- N Sudden Release of Pressure
- N Reactivity

RCRA Waste Code: 2,4-D: U240

- SEC 302:** Not Applicable
- SEC 304:** Not Applicable
- SEC 313:** 2,4-D Acid
2,4-D isooctyl ester
Dicamba

CERCLA RQ:

- 2,4-D 100 pounds
- Dicamba 1000 pounds

National Fire Protection Association (NFPA) Ratings:

Health: 1 Fire: 1 Reactivity: 0 Specific: none

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Supercedes MSDS Dated: NEW

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Knox Fertilizer Company, Inc.
P.O. Box 248
Knox, IN 46534
574.772.6275