



For Chemical Emergency, Spill, Leak, Fire, Exposure, Or  
 Accident, Call CHEMTREC Day or Night: 1-800-424-9300.  
 For Medical Emergencies Only, Call 877-325-1840.

## 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**Product Name:** Riverdale® Escalade™ Low Odor  
**Synonyms:** None  
**EPA Reg. No.:** 228-416

**Company Name:** Nufarm Americas Inc.  
 1333 Burr Ridge Parkway, Suite 125A  
 Burr Ridge, IL 60527

**Date of Issue:** November 8, 2004  
**Sections Revised:** 2, 3, 5, 8, 11, 14 and 15  
**Supersedes:** October 6, 2004

## 2. COMPOSITION / INFORMATION ON INGREDIENTS

COMPONENT	CAS NO.	% BY WEIGHT
Triisopropanolamine Salt of 2,4-Dichlorophenoxyacetic Acid	32341-80-3	50.59
Fluroxypyr	81406-37-3	7.32
Dicamba	1918-00-9	3.39
Other Ingredients Including:		38.70
Aromatic Solvent	64742-94-5	
(Contains Naphthalene)	91-20-3	

## 3. HAZARDS IDENTIFICATION

### **Emergency Overview:**

**Appearance and Odor:** Clear, viscous amber colored solution with a slight amine odor.

**Warning Statements:** Keep out of reach of children. WARNING. Causes substantial but temporary eye injury. Avoid contact with skin or clothing. Do not get in eyes.

### **Potential Adverse Health Effects:**

**Likely Routes of Exposure:** Skin contact and ingestion.

**Eye Contact:** This product causes substantial but temporary eye injury.

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

**Ingestion:** This product is no more than slightly toxic based on toxicity studies. No significant adverse health effects are expected to develop if only small amounts (less than a mouthful) are swallowed. Ingestion of similar formulations has been reported to produce gastrointestinal discomfort with irritation of the mouth, nausea, vomiting and diarrhea. Oral ingestion of large quantities of one similar product has been reported to result in hypotension and lung edema.

**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.

**Chronic Health 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. 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 did not show carcinogenic potential. The U.S. EPA has given 2,4-D and dicamba a Class D classification (not classifiable as to human carcinogenicity). Animal tests with dicamba have not demonstrated carcinogenic, teratogenic, or other reproductive effects with the exception of slightly reduced fetal body weights and post implantation losses reported at the Maximum Tolerated Dose level. The available data on fluroxypyr indicates that it did not cause cancer or interfere with reproduction in laboratory animal studies. Fluroxypyr did not cause birth defects; however, in laboratory animals other toxic effects to the fetus have been seen.

#### 4. FIRST AID MEASURES

**If in Eyes:** Hold eye open and rinse slowly and gently with water for 15 to 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.

**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. DO NOT GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON.

**If on Skin:** Take off contaminated clothing. Rinse skin immediately with plenty of water for 15 to 20 minutes. Call a poison control center or doctor for treatment advice. Do not give anything by mouth to an unconscious person.

**If Inhaled:** 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.

#### 5. FIRE FIGHTING MEASURES

**Flash Point:** >210 degrees F (setaflash)

**Autoignition Temperature:** Not determined.

**Hazardous Products of Combustion:** Under fire conditions, may produce gases such as hydrogen chloride, nitrogen oxides, and carbon monoxide.

**Extinguishing Media:** Dry chemical, foam or carbon dioxide (CO<sub>2</sub>)

**Unusual Fire or Explosion Hazards:** If water is used to fight fire or cool containers, dike to prevent runoff contamination of municipal sewers and waterways.

**Fire Fighting Equipment:** Fire fighters and others exposed to products of combustion should wear positive-pressure, self-contained breathing apparatus and full protective equipment. Equipment should be thoroughly decontaminated after use.

#### 6. ACCIDENTAL RELEASE MEASURES

Contain large spills with dikes and transfer the material to appropriate containers for reclamation or disposal. Absorb remaining material or small spills with an inert material and then place in a chemical waste container. Flush residual spill area with water.

Large spills that soak into the ground should be dug up, placed in metal drums and disposed of in accordance with instructions provided under DISPOSAL, Section 13 of this MSDS. Contact appropriate state agency when considering a land spreading disposal option.

Leaking containers should be separated from non-leakers and either the container or its contents transferred to a drum or other non-leaking container and disposed of in accordance with instructions provided under DISPOSAL, Section 13 of this MSDS. Any recovered spilled liquid should be collected and disposed of similarly.

#### 7. HANDLING AND STORAGE

**Handling:**

Avoid contact with eyes, skin or clothing. Avoid breathing spray mist. Wash hands, face and arms with soap and water before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove clothing

immediately and shower if clothing becomes saturated or pesticide gets inside. Then wash thoroughly and put on clean clothing. Remove Personal Protection Equipment (PPE) immediately after handling this product. Wash the outside of gloves before removing.

If this container is over one gallon and less than five gallons, then persons engaged in open pouring of this product must also wear coveralls or a chemical resistant apron. If this container is five gallons or more in capacity, do not open pour product from this container. A mechanical system (such as a probe and pump or spigot) must be used for transferring the contents of this container. If the contents of a non-refillable pesticide container are emptied, the probe must be rinsed before removal.

**Storage:**

Always use original container to store pesticides in a secured warehouse or storage building. Store at temperatures above 32°F. If allowed to freeze, remix before using. This does not alter this product. Containers should be opened in well-ventilated areas. Keep container tightly sealed with not in use. Do not stack cardboard cases more than two pallets high. Do not store near open containers of fertilizer, seed or other pesticides. Do not contaminate water, food or feed by storage and disposal.

**8. EXPOSURE CONTROLS / PERSONAL PROTECTION****Personal Protective Equipment:**

**Non-WPS Turf Uses:** Applicators and other handlers who handle this pesticide for any use NOT covered by the Worker Protection Standard (40 CFR Part 170) (in general only agricultural plants uses are covered by the WPS) must wear face shield, goggles, or safety glasses and long pants, long-sleeved shirt, socks, shoes and rubber gloves when mixing, loading or applying this product. It is recommended that safety glasses include front, brow, and temple protection. In addition to the clothing and eye protection listed above, commercial mixer/loaders must wear chemical resistant in place of rubber gloves except when the product is to be applied to a golf course. After using this product, rinse gloves before removing, remove clothing and launder separately before reuse, and promptly and thoroughly wash hands and exposed skin with soap and water.

**Non-WPS Industrial Uses:** When mixing, loading or applying this product or repairing or cleaning equipment used with this product, wear face shield, goggles, or safety glasses and chemical-resistant gloves, long-sleeved shirt, long pants, socks and shoes. It is recommended that safety glasses include front, brow, and temple protection. For aerial applicators in an enclosed cockpit and applicators applying this product from a tractor that has a completely enclosed cab, eye protection is not required. Wash hands, face and arms with soap and water as soon as possible after mixing, loading or applying this product. After work, remove all clothing and show using soap and water. Do not reuse clothing worn during the previous day's mixing and loading or application of this product without cleaning first. Clothing must be kept and washed separately from other household laundry.

**WPS Uses:** Applicators and other handlers who handle this pesticide for any use covered by the Worker Protection Standard (40 CFR Part 170) (in general, agricultural plant uses are covered) must wear: coveralls over short-sleeved shirt and short pants, waterproof gloves, chemical-resistant footwear plus socks, protective eyewear, chemical resistant headgear for overhead exposure and chemical-resistant apron when cleaning equipment, mixing or loading. Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow manufacturer's instructions for cleaning/maintaining Personal Protective Equipment (PPE). If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry. After each day of use, clothing or PPE must not be reused until it has been cleaned. If this container is over one gallon and less than five gallons, mixers and loaders who do not use a mechanical system, (such as a probe and pump or spigot) to transfer contents of this container must wear coveralls or a chemical resistant apron in addition to the other required PPE.

**Respiratory Protection:** Not normally required. If exposure limits may exceed acceptable levels, wear an organic-vapor cartridge with a prefilter approved for pesticides (MSHA/NIOSH approval number prefix TC-23C), or a NIOSH approved respirator with any R, P or HE filter.

**Ventilation:** Good local ventilation is recommended; mechanical ventilation may be used if exposure limits may be exceeded.

**Airborne Exposure Limits:****Product/ Component****ACGIH TLV - TWA****OSHA PEL 8 Hour TWA**

Riverdale Escalade Low Odor

Not established

Not established

Naphthalene

10 ppm

10 ppm

<b>9. PHYSICAL AND CHEMICAL PROPERTIES</b>
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**Appearance and Odor:** Clear, viscous amber colored solution with a slight amine odor

**Boiling Point:** Not established

**Density:** 9.83 lbs./gal.

**Evaporation Rate:** Not established

**Freezing Point:** <32°F

**pH:** 6.07 (1% solution)

**Solubility in Water:** Dispersible

**Specific Gravity:** 1.172 g/cc @ 25 degrees C

**Vapor Density:** Not established

**Vapor Pressure:** Not established

**Viscosity:** 192 cPs @25°C

NOTE: These physical data are typical values based on material tested but may vary from sample to sample. Typical values should not be construed as a guaranteed analysis of any specific lot or as specifications for the product.

<b>10. STABILITY AND REACTIVITY</b>
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**Stability:** Stable

**Incompatibility:** Strong oxidizers or acids

**Hazardous Decomposition Products:** None.

**Hazardous Polymerization:** Does not occur.

<b>11. TOXICOLOGICAL INFORMATION</b>
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**Product:** Data from laboratory studies on this product are summarized below:

Single exposure (acute) studies indicate:

**Oral:** Slightly Toxic (Rat LD<sub>50</sub>: 1, 750 mg/kg); FIFRA Category III

**Dermal:** Practically non-toxic (Rat LD<sub>50</sub>: > 5,000 mg/Kg); FIFRA Category IV

**Inhalation:** Practically non-toxic (Rat 4-hr LC<sub>50</sub>: >2.04 mg/L); FIFRA Category IV

**Eye Irritation:** Rabbits (3): Severely irritating. One hour after test substance instillation, corneal opacity, iritis and conjunctivitis observed in all eyes. The incidence and severity of irritation remained constant for all animals from 24 hours through Day 4. Irritation decreased thereafter and by Day 10, all animals were free from ocular irritation; FIFRA Category II

**Skin Irritation:** Rabbits (3); Moderately irritating. Twenty-four hours following patch removal, well-defined erythema was observed at all treated sites and two animals exhibited very-slight edema. The overall incidence and severity of irritation decreased thereafter. By Day 14, irritation cleared from two of the three dose sites; FIFRA Category IV

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

**Assessment Carcinogenicity:**

This product contains substances that are considered to be probable or suspected human carcinogens as follows:

Ingredient Name	Regulatory Agency Listing As Carcinogen			
	ACGIH	IARC	NTP	OSHA
Chlorophenoxy Herbicides	No	2B	No	No
Naphthalene	No	2B	No	No

**12. ECOLOGICAL INFORMATION**

This product is toxic to fish. Drift or runoff from treated areas may be hazardous to aquatic organisms and nontarget 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 apply when weather conditions favor drift from target area. Clean and rinse spray equipment using soap or detergent and water, and rinse thoroughly before reuse for other spraying. When cleaning equipment, do not pour the washwater on the ground; spray or drain over a large area away from wells and other water sources. Do not contaminate water when disposing of equipment washwaters. Do not apply this product through any type of irrigation system. Do not contaminate domestic or irrigation waters.

Most cases of groundwater contamination involving phenoxy herbicides such as 2,4-D have been associated with mixing/loading and disposal sites. Caution should be exercised when handling these herbicides at such sites to prevent contamination of groundwater supplies. Use of closed systems 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.

**13. DISPOSAL CONSIDERATIONS**

Do not contaminate water, foodstuffs, feed or seed by storage or disposal.

**PESTICIDE DISPOSAL:** Pesticide wastes are toxic. If container is damaged or if pesticide has leaked, contain all spillage. Absorb and clean up all spilled material with granules or sand. Place in a closed, labeled container for proper disposal. Improper disposal of excess pesticide, spray mixtures, or rinsate is a violation of Federal law and may contaminate groundwater. If these 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.

**PLASTIC BOTTLES AND NON-RETURNABLE PLASTIC DRUMS:** Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures approved by State and local authorities. Plastic containers are also disposable by incineration, or if allowed by State and local authorities, by burning. If burned, stay out of smoke.

**RETURNABLE/REFILLABLE CONTAINERS:** Close all openings and replace all caps. Contact Nufarm Customer Service at 1-800-345-3330, to arrange for return the empty refillable container.

**14. TRANSPORT INFORMATION**

Follow the precautions indicated in the Handling and Storage Section, Section 7 of this MSDS.

Packages containing 20 gallons or less are generally not regulated by DOT. For packages containing over 20 gallons:

**DOT Shipping Description:** RQ ENVIRONMENTALLY HAZARDOUS SUBSTANCE, 9, NOS, PG III, UN 3083 (2,4-D SALTS)

**U.S. Surface Freight Classification:** Weed killing compound, N.O.I.B.N.

**15. REGULATORY INFORMATION**

**TSCA Inventory:** This product is exempted from TSCA because it is solely for FIFRA regulated use.

**SARA Hazard Notification/Reporting:****Hazard Categories Under Criteria of SARA Title III Rules (40 CFR Part 370):**

Immediate, Delayed

**Section 313 Toxic Chemical(s):**

Acetic Acid, (2,4-Dichlorophenoxy)- (CAS No. 94-75-7), 27.12% equivalent by weight in product

Dicamba (CAS No. 1918-00-9), 3.39% by weight in product

Naphthalene (CAS No. 91-20-3), 0.48% by weight in product

**Reportable Quantity (RQ) under U.S. CERCLA:**

Acetic Acid, (2,4-Dichlorophenoxy)- (CAS No. 94-75-7) 100 pounds  
 Dicamba (CAS No. 1918-00-9) 1,000 pounds  
 Naphthalene (CAS No. 91-20-3) 100 pounds

**RCRA Waste Code:**

Acetic Acid, (2,4-Dichlorophenoxy)- (CAS No. 94-75-7) U240  
 Naphthalene (CAS No. 91-20-3) U165

**California Proposition 65:** This product contains chemicals known to the State of California to cause cancer. This chemical is naphthalene, CAS No. 91-20-3.

**National Fire Protection Association (NFPA) Hazard Ratings:****Ratings for This Product**

2 Health  
 1 Flammability  
 0 Reactivity

**Key to Ratings**

0 Minimal  
 1 Slight  
 2 Moderate  
 3 Serious  
 4 Severe

**16. OTHER INFORMATION**

This Material Safety Data Sheet (MSDS) serves different purposes than and DOES NOT REPLACE OR MODIFY THE EPA-ACCEPTED 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.

Use, storage and disposal of pesticide products are regulated by the EPA under the authority of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) through the product labeling, and all necessary and appropriate precautionary, use, storage, and disposal information is set forth on that labeling. It is a violation of federal law to use a pesticide product in any manner not prescribed on the EPA-accepted label.

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