



# Pesticide Fact Sheet

Name of Chemical: Ethalfluralin

Reason for Issuance:

Date Issued: June 30, 1985

Fact Sheet Number: 58

## 1) Description of Chemical

Generic Name: N-ethyl-N-(2-methyl-2-propenyl)-2,6-dinitro-4-(trifluoromethyl) benzenamine

Common Name: ethalfluralin

Chemical Abstracts Service (CAS) number:

Year of initial registration: 1983

Pesticide type: herbicide

U.S. producer: Elanco Products Co., Division of Eli Lilly & Co.

## 2) Use Patterns and Formulations

Emulsifiable concentrate: pre-plant incorporated (PPI) to dry peas, dry beans, soybeans

surface applied, cucurbits direct seeded:  
cantaloupe, cucumber, pumpkin, watermelon

## 3) Summary of Science Findings

Chemical Characteristics (From Elanco General Summary 161/2GSUm1/AM/1)

Ethalfluralin is a yellow crystalline solid with a faint amine odor. It has a molecular weight of 333.3, a specific gravity of 1.32/ml, a melting range of 57 to 59°C, an n-octanol-to-water partition coefficient of 5-11, a vapor pressure of  $8.2 \times 10^{-5}$  mmHg at 25°C, and is susceptible to decomposition by ultraviolet light. Ethalfluralin is readily soluble in organic solvents; its solubility in water is 0.3 ppm at 25°C.

Toxicological characteristics:

Ethalfluralin is considered a skin sensitizer.  
E.C. formulation is irritating to the eyes and skin.  
E.C. formulation is toxic to fish.  
Toxicology studies on ethalfluralin are as follows:

Oral LD<sub>50</sub>, rat: greater than 10g/kg  
Oral LD<sub>50</sub>, mouse: " " 10g/kg  
Oral LD<sub>50</sub>, dog: greater than 200 mg/kg  
Oral LD<sub>50</sub>, cat: " " 200 mg/kg

Acute dermal LD<sub>50</sub>, rabbit: greater than 2 gm/kg  
Primary eye irritation, rabbit: conjunctivitis; no corneal irritation  
Acute inhalation LC<sub>50</sub>, rat: greater than 0.028 mg/L/hour

Toxicology studies on E.C. formulation are as follows:

Oral LD<sub>50</sub>, rat: greater than 2mL/kg  
Acute dermal LD<sub>50</sub>, rabbit: greater than 2mL/kg  
Primary dermal irritation, rabbit: slight to moderate irritation  
Primary eye irritation, rabbit: slight iritis & conjunctivitis;  
corneal dulling reversible in 21 days  
Acute inhalation LC<sub>50</sub>, rat: greater than 74.4 uL/L/hour

Ethalfuralin is oncogenic in the rat: mammary gland fibroadenomas (benign) in females at mid (250) and high (750) ppm dose levels. Using a "one-hit" model, the worst-case dietary oncogenic risk is calculated to be 3.77 incidences in one million.

Ethalfuralin is considered a teratogen in the rabbit: teratogenic No-observed-effect level (NOEL) is 75mg/kg

#### Environmental Characteristics

Ethalfuralin binds readily to soil particles and is, thus, not prone to leaching. It is volatile and readily photodegraded. Ethalfuralin concentrations in water would be expected to decline rapidly with a half-life of 1-2 days. Ethalfuralin residues may transport to aquatic environments via soil erosion. Label warnings include: Do not apply directly to any body of water or wetlands. Runoff or erosion from treated areas may be hazardous to fish in neighboring areas.

#### Ecological Characteristics:

Avian acute oral LD<sub>50</sub>: Bobwhite quail > 2000 mg/kg  
Avian dietary LC<sub>50</sub>: Bobwhite quail > 5000 ppm  
Avian dietary LC<sub>50</sub>: Mallard duck > 5000 ppm  
Fish acute LC<sub>50</sub>: Bluegills: 0.032 ppm (highly toxic)  
Rainbow trout: 0.037 ppm (highly toxic)  
Aquatic invertebrate acute LC<sub>50</sub>: Daphnia: 0.365 ppm (highly toxic)  
mallard and bobwhite one-generation reproduction: supplementary dietary levels up to 1000 ppm did not affect reproduction.

#### Tolerance assessment:

Tolerance levels of 0.05 ppm established for parent compound ethalfuralin in commodities: dry beans, dry peas, soybeans and cucurbit vegetable group. Real residues of ethalfuralin detectable in forage items, thus label restriction: Do not graze or forage crop grown in treated soil or cut for hay or silage.

**Summary of Regulatory Position and Rationale**

Ethylfluralin is regulated as an oncogen and teratogen. Benefits associated with registered crop uses are considered to outweigh oncogenic risks. There are adequate margins of safety for teratogenic effects. Analysis of benefits and risks is provided in an Agency position document accompanying the tolerance regulation published December 21, 1983, in the FR for this pesticide.

**Summary of major data gaps**

**Chronic non-rodent feeding (dog)**  
**Teratology: second species**