

## Resmethrin; CASRN 10453-86-8

Human health assessment information on a chemical substance is included in the IRIS database only after a comprehensive review of toxicity data, as outlined in the [IRIS assessment development process](#). Sections I (Health Hazard Assessments for Noncarcinogenic Effects) and II (Carcinogenicity Assessment for Lifetime Exposure) present the conclusions that were reached during the assessment development process. Supporting information and explanations of the methods used to derive the values given in IRIS are provided in the [guidance documents located on the IRIS website](#).

### STATUS OF DATA FOR Resmethrin

**File First On-Line 09/26/1988**

Category (section)	Assessment Available?	Last Revised
<b>Oral RfD (I.A.)</b>	yes	09/26/1988
<b>Inhalation RfC (I.B.)</b>	not evaluated	
<b>Carcinogenicity Assessment (II.)</b>	not evaluated	

## I. Chronic Health Hazard Assessments for Noncarcinogenic Effects

### I.A. Reference Dose for Chronic Oral Exposure (RfD)

Substance Name — Resmethrin  
CASRN — 10453-86-8  
Primary Synonym — SBP-1382  
Last Revised — 09/26/1988

The oral Reference Dose (RfD) is based on the assumption that thresholds exist for certain toxic effects such as cellular necrosis. It is expressed in units of mg/kg-day. In general, the RfD is an estimate (with uncertainty spanning perhaps an order of magnitude) of a daily exposure to the human population (including sensitive subgroups) that is likely to be without an appreciable risk of deleterious effects during a lifetime. Please refer to the Background Document for an elaboration of these concepts. RfDs can also be derived for the noncarcinogenic health effects of

substances that are also carcinogens. Therefore, it is essential to refer to other sources of information concerning the carcinogenicity of this substance. If the U.S. EPA has evaluated this substance for potential human carcinogenicity, a summary of that evaluation will be contained in Section II of this file.

### I.A.1. Oral RfD Summary

Critical Effect	Experimental Doses*	UF	MF	RfD
Reproductive toxicity	NOEL: None	1000	1	3E-2 mg/kg/day
3-Generation Rat Reproduction Study	LEL: 500 ppm (25 mg/kg/day)			
Penwick Corp., 1979a				

\* Conversion Factors: 1 ppm = 0.05 mg/kg/day (assumed rat food consumption)

### I.A.2. Principal and Supporting Studies (Oral RfD)

Penwick Corporation. 1979a. MRID No. 00081276. Available from EPA. Write to FOI, EPA, Washington, DC 20460.

Four groups of 20 males and 20 females rats each were given diets containing 0, 500, 800, or 1250 ppm (0, 25, 40, or 62.5 mg/kg/day) of Resmethrin (technical contained 90% active ingredient). These groups were labeled the F0 generation and were mated to produce first an F1A generation and were subsequently remated to produce a F1B generation. Twenty rats/sex were selected from the F1A group to be mated to produce F2A and F2B generations. Twenty rats/sex from the F2A generation were mated to produce F3A and F3B generations. The effects observed at the lowest dose tested (500 ppm) included the following: statistically significant deviations related to an increase in pups cast dead and lower mean pup weights at weaning. Therefore, based on the effects observed at the lowest dose tested, a NOEL for this study cannot be established.

### **I.A.3. Uncertainty and Modifying Factors (Oral RfD)**

UF — An uncertainty factor of 100 was used to account for the inter- and intraspecies differences. An additional uncertainty factor of 10 was used to account for the lack of an established NOEL.

MF — None

### **I.A.4. Additional Studies/Comments (Oral RfD)**

Data Considered for Establishing the RfD:

1) 3-Generation Reproduction - rat: Principal study - see previous description; core grade guideline

2) 2-Year Feeding (oncogenic) - rat: Systemic NOEL=none; Systemic LEL=500 ppm (39.5 mg/kg/day, males; 47.0 mg/kg/day, females; actual dose tested) (LDT; minimal hypertrophy of hepatocytes; decreased spleen weights in females); At 2500 ppm (125 mg/kg/day) an increase in liver weight and liver pathological lesions were observed; At the HDT, 5000 ppm (250 mg/kg/day) increases in thyroid weight and cysts were observed; core grade minimum (Penwick Corp., 1980a)

3) 6-Month Feeding - dog: NOEL=10 mg/kg/day; LEL=30 mg/kg/day (increase liver weight in females); core grade guideline (Penwick Corp., 1980b)

4) Teratology - rat: Teratogenic NOEL=80 mg/kg/day; Teratogenic LEL=none; Fetotoxic NOEL=40 mg/kg/day; Fetotoxic LEL=80 mg/kg/day (delay in skeletal development); core grade guideline (Penwick Corp., 1979b)

5) Teratology - rabbit: NOEL=100 mg/kg/day (HDT); LEL=none; core grade minimum (Penwick (Corp., 1979c)

Other Data Reviewed:

1) 1-Generation Reproduction - rat: NOEL=none; LEL=500 ppm (25 mg/kg/day) (LDT; increased numbers of pups cast dead); At 2500 ppm (125 mg/kg/day) (HDT) increased pups cast dead and lower pup weight among survivors was observed; core grade supplementary (Penwick Corp., 1978)

Data Gap(s): None

### **I.A.5. Confidence in the Oral RfD**

Study — High  
Database — High  
RfD — High

The critical study is of good quality and is given a high confidence rating. Additional studies are supportive; therefore, the data base is given a high confidence rating. High confidence in the RfD follows.

### **I.A.6. EPA Documentation and Review of the Oral RfD**

Source Document — This assessment is not presented in any existing U.S. EPA document.

Other EPA Documentation — Pesticide Registration Files

Agency Work Group Review — 07/20/1988

Verification Date — 07/20/1988

Screening-Level Literature Review Findings — A screening-level review conducted by an EPA contractor of the more recent toxicology literature pertinent to the RfD for Resmethrin conducted in September 2002 did not identify any critical new studies. IRIS users who know of important new studies may provide that information to the IRIS Hotline at [hotline.iris@epa.gov](mailto:hotline.iris@epa.gov) or (202)566-1676.

### **I.A.7. EPA Contacts (Oral RfD)**

Please contact the IRIS Hotline for all questions concerning this assessment or IRIS, in general, at (202)566-1676 (phone), (202)566-1749 (FAX) or [hotline.iris@epa.gov](mailto:hotline.iris@epa.gov) (internet address).

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### **I.B. Reference Concentration for Chronic Inhalation Exposure (RfC)**

Substance Name — Resmethrin  
CASRN — 10453-86-8  
Primary Synonym — SBP-1382

Not available at this time.

## **II. Carcinogenicity Assessment for Lifetime Exposure**

Substance Name — Resmethrin

CASRN — 10453-86-8

Primary Synonym — SBP-1382

This substance/agent has not undergone a complete evaluation and determination under US EPA's IRIS program for evidence of human carcinogenic potential.

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**III. [reserved]**

**IV. [reserved]**

**V. [reserved]**

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## **VI. Bibliography**

Substance Name — Resmethrin

CASRN — 10453-86-8

Primary Synonym — SBP-1382

### **VI.A. Oral RfD References**

Penwick Corporation. 1979a. MRID No. 00081276. Available from EPA. Write to FOI, EPA, Washington DC. 20460.

Penwick Corporation. 1980a. EPA Accession No. 242782 - 242786. Available from EPA. Write to FOI, EPA, Washington DC. 20460.

Penwick Corporation. 1980b. EPA Accession No. 244514. Available from EPA. Write to FOI, EPA, Washington DC. 20460.

Penwick Corporation. 1979b. EPA Accession No. 241765-66, 241768-70. Available from EPA. Write to FOI, EPA, Washington DC. 20460.

Penwick Corporation. 1979c. EPA Accession No. 241800. Available from EPA. Write to FOI, EPA, Washington DC. 20460.

Penwick Corporation. 1978. EPA Accession No. 245852. Available from EPA. Write to FOI, EPA, Washington DC. 20460.

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### **VI.B. Inhalation RfC References**

None

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### **VI.C. Carcinogenicity Assessment References**

None

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## **VII. Revision History**

Substance Name — Resmethrin

CASRN — 10453-86-8

Primary Synonym — SBP-1382

<b>Date</b>	<b>Section</b>	<b>Description</b>
<b>09/26/1988</b>	I.A.	Oral RfD summary on-line
<b>12/03/2002</b>	I.A.6.	Screening-Level Literature Review Findings message has been added.

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## **VIII. Synonyms**

Substance Name — Resmethrin

CASRN — 10453-86-8

Primary Synonym — SBP-1382

Last Revised — 09/26/1988

- 10453-86-8
- benzofuroline
- benzyfuroline

- 5-benzyl-3-furylmethyl(+)-cis,trans-chrysanthemate
- (5-benzyl-3-furyl) methyl-2,2-dimethyl-3-(2-methylpropenyl)-cyclopropanecarboxylate
- chryson
- chryson
- cyclopropanecarboxylic acid, 2,2-dimethyl-3-(2-methylpropenyl)-,(5-benzyl-3-furyl)methyl ester
- dimethyl 3-(2-methyl-1-propenyl)cyclopropanecarboxylate
- ENT 27474
- FMC 17370
- FOR-SYN
- NIA 17370
- NRDC 104
- NSC 195022
- OMS-1206
- premgard
- pynosect
- pyretherm
- Resmethrin
- resmetrina
- S.B. Penick 1382
- SBP-1382
- synthrin