

Phosmet; CASRN 732-11-6

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 Phosmet

File First On-Line 01/31/1987

Category (section)	Assessment Available?	Last Revised
Oral RfD (I.A.)	yes	01/31/1987
Inhalation RfC (I.B.)	not evaluated	
Carcinogenicity Assessment (II.)	not evaluated	

I. Chronic Health Hazard Assessments for Noncarcinogenic Effects

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

Substance Name — Phosmet

CASRN — 732-11-6

Last Revised — 01/31/1987

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
Reduced body weight (males), liver cell vacuolation, cholinerase inhibition	NOEL: 40 ppm (2.0 mg/kg/day) LEL: 400 ppm (20.0 mg/kg/day)	100	1	2E-2 mg/kg/day
2-Year Rat Feeding Study				
Stauffer Chemical, 1967				

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

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

Stauffer Chemical Company. 1967. MRID No. 00062651, 00075419, 00076436, 00080431, 00080556; HED Doc. No. 001999. Available from EPA. Write to FOI, EPA, Washington, DC 20460.

Phosmet was administered in the diet at levels of 20, 40, and 400 ppm to groups of 25 Charles River strain albino rats/sex for a period of 2 years. A control was included. There was slight decrease in body weight gain in males in the 400 ppm group. Plasma, erythrocyte, and brain cholinesterase activity was decreased in the 400 ppm group. Moderate liver cell vacuolation was observed in rats in the 400 ppm group.

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

UF — Based on a chronic exposure study, an uncertainty factor of 100 was used to account for inter- and intra- species differences.

MF — None

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

The NOEL in a 2-year dog study is 1 mg/kg/day, less than the NOEL used in support of the RfD. However, since systemic effects were noted in the rat, a 100 fold UF was applied to the rat NOEL (2.0 mg/kg/day) rather than a 10-fold UF applicable to the ChE inhibition observed in the dog. Thus, overall a more restrictive RfD value was calculated.

Data Considered for Establishing the RfD

1) 2-Year Feeding (Oncogenic) - rat: Systemic NOEL=40 ppm (2 mg/kg/day); ChE NOEL=40 ppm; LEL=400 ppm (20 mg/kg/day) (decreased body weight gain in males; increased incidence of moderate liver cell vacuolation; inhibition of plasma, erythrocyte and brain cholinesterase activity); core grade minimum (Stauffer Chemical Co., 1967)

2) 2-Year Feeding - dog: NOEL=40 ppm (1.0 mg/kg/day); LEL=400 ppm (10 mg/kg/day) (inhibition of erythrocyte and brain cholinesterase activity); core grade minimum (Stauffer Chemical Co., 1967)

3) 3-Generation Reproduction - rat: NOEL=80 ppm (4 mg/kg/day) (HDT); core grade minimum (Stauffer Chemical Co., 1968a)

4) Teratology - rabbit: Teratogenic and Reproductive NOEL=60 mg/kg (HDT) (cholinesterase activity inhibited from 10 mg/kg upwards); core grade minimum (Stauffer Chemical Co., 1966a)

5) Teratology - monkey: NOEL=8 mg/kg (HDT); core grade minimum (Stauffer Chemical Co., 1968b)

Data Gap(s): None

Other Data Reviewed

1) Teratology - rabbit: NOEL=35 mg/kg/day (HDT); core grade supplementary (Stauffer Chemical Co., 1966b)

2) Teratology - rat: NOEL=30 mg/kg/day (HDT) (reduced maternal body weight gain at 30 mg/kg/day); core grade supplementary (Stauffer Chemical Co., 1979)

3) Teratology - rat: NOEL=25 mg/kg/day (gavage) and 29 mg/kg/day (diet); core grade supplementary (Stauffer Chemical Co., 1976)

I.A.5. Confidence in the Oral RfD

Study — High

Database — High

RfD — High

The principal study appears to be of good quality and is given a high confidence rating. Additional studies are of good quality; therefore, the database is given a high confidence rating. High confidence in the RfD follows.

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

Pesticide Registration Standard, April 1986

Pesticide Registration Files

Agency Work Group Review — 06/10/1986

Verification Date — 06/10/1986

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 Phosmet conducted in September 2002 identified one or more significant new studies. IRIS users may request the references for those studies from the IRIS Hotline at 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 (internet address).

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

Substance Name — Phosmet
CASRN — 732-11-6

Not available at this time.

II. Carcinogenicity Assessment for Lifetime Exposure

Substance Name — Phosmet
CASRN — 732-11-6

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

III. [reserved]

IV. [reserved]

V. [reserved]

VI. Bibliography

Substance Name — Phosmet
CASRN — 732-11-6

VI.A. Oral RfD References

Stauffer Chemical Company. 1966a. MRID No. 00062649, 00080433, 0009076; HED Doc. No. 001999. Available from EPA. Write to FOI, EPA, Washington, DC 20460.

Stauffer Chemical Company. 1966b. MRID No. 00062649; HED Doc. No. 001999. Available from EPA. Write to FOI, EPA, Washington, DC 20460.

Stauffer Chemical Company. 1967. MRID No. 00062651, 00075419, 00076436, 00080431, 00080556; HED Doc. No. 001999. Available from EPA. Write to FOI, EPA, Washington, DC 20460.

Stauffer Chemical Company. 1968a. MRID No. 00062650, 00081432; HED Doc. No. 001999. Available from EPA. Write to FOI, EPA, Washington, DC 20460.

Stauffer Chemical Company. 1968b. MRID No. 00112269; HED Doc. No. 001999. Available from EPA. Write to FOI, EPA, Washington, DC 20460.

Stauffer Chemical Company. 1976. MRID No. 00063192; HED Doc. No. 005102. Available from EPA. Write to FOI, EPA, Washington, DC 20460.

Stauffer Chemical Company. 1979. MRID No. 00031555; HED Doc. No. 001999. Available from EPA. Write to FOI, EPA, Washington, DC 20460.

VI.B. Inhalation RfC References

None

VI.C. Carcinogenicity Assessment References

None

VII. Revision History

Substance Name — Phosmet
CASRN — 732-11-6

Date	Section	Description
12/03/2002	I.A.6.	Screening-Level Literature Review Findings message has been added.

VIII. Synonyms

Substance Name — Phosmet
CASRN — 732-11-6
Last Revised — 01/31/1987

- 732-11-6
- APPA
- DECEMTHION
- DECEMTHION P-6
- ENT 25,705
- FTALOPHOS
- IMIDAN
- KEMOLATE
- N-(MERCAPTOMETHYL)PHTHALIMIDE S-(O,O-DIMETHYL PHOSPHORODITHIOATE)
- O,O-DIMETHYL-PHTHALIMIDIOMETHYL-DITHIOPHOSPHATE
- O,O-DIMETHYL 5-(PHTHALIMIDOMETHYL)DITHIOPHOSPHATE
- O,O-DIMETHYL S-(N-PHTHALIMIDOMETHYL) DITHIOPHOSPHATE
- O,O-DIMETHYL S-PHTHALIMIDOMETHYL PHOSPHORODITHIOATE
- PERCOLATE
- Phosmet
- PHOSPHORODITHIOIC ACID, S-((1,3-DIHYDRO-1,3-DIOXO-ISOINDOL-2-YL)METHYL) O,O- DIMETHYL ESTER
- PHTHALIMIDOMETHYL O,O-DIMETHYL PHOSPHORODITHIOATE
- PHTHALIMIDO O,O-DIMETHYL PHOSPHORODITHIOATE
- PHTHALOPHOS

- PMP
- PROLATE
- R 1504
- SMIDAN
- STAUFFER R 1504