

Phenylmercuric acetate; CASRN 62-38-4

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 Phenylmercuric acetate

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 — Phenylmercuric acetate

CASRN — 62-38-4

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
Renal damage	NOAEL: 0.1 ppm mercury in diet or	100	1	8E-5 mg/kg/day
Rat Oral Chronic Study	0.0084 mg/kg/day phenyl mercuric acetate			
Fitzhugh et al., 1950	LOAEL: 0.5 ppm mercury or 0.042 mg/kg/day phenyl mercuric acetate			

*Conversion Factors: Food consumption 5% bw/day, molecular weight phenyl mercuric acetate/mercury is 337/201; thus, 0.1 mg/kg of diet (ppm) x 0.05 kg of diet/kg bw/day x 337/201 = 0.0084 mg/kg bw/day

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

Fitzhugh, O.G, A.A. Nelson, E.P. Laug and I.M. Kunze. 1950. Chronic oral toxicities of mercuric phenyl and mercuric salts. Arch. Ind. Hyg. Occup. Med. 2: 433-442.

Phenyl mercuric acetate was administered to rats (10-24/group/sex) at levels of 0, 0.1, 0.5, 2.5, 10, 40, and 160 mercury in their diet for 2 years. Detailed microscopic examinations of the liver and kidney were performed at 1 and 2 years of age. Microscopic examination of the viscera was also performed at the 2-year mark. As little as 0.5 ppm mercury as phenyl mercuric acetate resulted in detectable kidney damage in females after 2 years. No differences were seen between controls and females receiving 0.1 ppm mercury. At higher doses (>2.5 ppm), renal lesions were observed in both males and females. A NOEL of 0.1 ppm was determined from these results.

Fitzhugh et al. (1950) is the only chronic study regarding the oral toxicity of phenyl mercuric acetate. Therefore, assuming that the rat consumed the equivalent of 5% of its body weight in food/day, the 0.1 ppm Hg NOEL is equivalent to 0.005 mg/kg/day Hg or 0.0084 mg/kg bw phenyl mercuric acetate.

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

UF — An ADI of 0.08 ug/kg/day or 6 ug/kg/day for a 70-kg person was derived by dividing the NOEL by an uncertainty factor of 100 to account for species extrapolation and differences in human sensitivity.

MF — None

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

The database contains very little information on the oral toxicity of phenyl mercuric acetate. Some subchronic testing has been conducted. Limited data are available on the and teratogenic effects of this compound.

I.A.5. Confidence in the Oral RfD

Study — Medium

Database — Low

RfD — Low

The chosen study is given a medium confidence rating because a moderate number of animals/sex were tested at each of six doses; several parameters were measured. The database is given a low confidence rating because little or no supporting data exist. Low 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 — None

Agency Work Group Review — 08/19/1985

Verification Date — 08/19/1985

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 Phenylmercuric acetate 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 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 — Phenylmercuric acetate
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Not available at this time.

II. Carcinogenicity Assessment for Lifetime Exposure

Substance Name — Phenylmercuric acetate
CASRN — 62-38-4

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 — Phenylmercuric acetate
CASRN — 62-38-4

VI.A. Oral RfD References

Fitzhugh, O.G, A.A. Nelson, E.P. Laug and I.M. Kunze. 1950. Chronic oral toxicities of mercuric phenyl and mercuric salts. Arch. Ind. Hyg. Occup. Med. 2: 433-442.

VI.B. Inhalation RfC References

None

VI.C. Carcinogenicity Assessment References

None

VII. Revision History

Substance Name — Phenylmercuric acetate
CASRN — 62-38-4

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

VIII. Synonyms

Substance Name — Phenylmercuric acetate
CASRN — 62-38-4
Last Revised — 01/31/1987

- 62-38-4
- (Acetoxymcuri)Benzene
- Acetoxyphenylmercury

- Agrosan GN 5
- Alginic acid
- Antimucic acid
- Bufexamac
- Ceresan Universal
- Contra Creme
- Dicyclanil
- Femmex
- FMA
- Fungitox OR
- Gallotannin
- HL-331
- Hostaquick
- Kwiksan
- Leytosan
- Liquiphene
- Mercury,(Acetato-O)Phenyl-
- Mercury, (Acetato)Phenyl-
- Mercury(II) Acetate, Phenyl-
- Mersolite
- Mersolite 8
- Metasol 30
- Norforms
- Phenmad
- Phenomercuric Acetate
- Phenylmercuriacetate
- Phenylmercuric Acetate
- Phix
- PMA
- PMAC
- PMAcetate
- PMAL
- PMAS
- Programin
- Purasan-SC-10
- Puraturf 10
- Quicksan 20
- Sanitized SPG
- SC-110
- Shimmerex
- Spor-Kil
- TAG
- Trigosan
- Ziarnik