

Trichlorofluoromethane; CASRN 75-69-4

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 Trichlorofluoromethane

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 — Trichlorofluoromethane

CASRN — 75-69-4

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
Survival and histopathology	NOAEL: none	1000	1	3E-1 mg/kg/day
Cancer Bioassay Studies in Rats and Mice	LOAEL: 488 mg/kg/day converted to 349 mg/kg/day			
NCI, 1978				

*Conversion Factors: 5 days/7 days; thus, 488 mg/kg/day x 5 days/7 days = 349 mg/kg/day

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

NCI (National Cancer Institute). 1978. Bioassay of trichlorofluoromethane for possible carcinogenicity. Report. No. 106, PHS/NIH, DHEW Publ. No. 78- 1356.

The NCI bioassay was performed on rats and mice exposed to various doses of trichloromonofluoromethane by gavage over a period of 78 weeks (50 animals/species/sex/dose for each of two doses with 20 animals/species/sex for each of two control groups). A statistically significant positive association between increased dosage and accelerated mortality by the Tarone test in male and female rats and female mice were observed. In treated rats of both sexes there were also elevated incidences of pleuritis and pericarditis not seen in controls. Inhalation studies which employed multispecies exposures to higher levels of the compound than used by NCI (Leuschner et al., 1983) reported no adverse clinical/pathologic signs of toxicity due to subchronic or short-term exposures.

The LOAEL of 488 mg/kg/day (based on mortality in rats) was converted to 349 mg/kg/day on a 7-day exposure basis.

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

UF — An uncertainty factor of 1000 (10 for LOAEL, 10 for species conversion, and 10 for sensitive human population), results in an RfD of 0.3 mg/kg/day.

MF — None

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

None.

I.A.5. Confidence in the Oral RfD

Study — Medium

Database — Medium

RfD — Medium

The chosen study is given a medium confidence rating because large numbers of animals/sex were tested in two doses for chronic exposures, but the study did not establish a NOEL. The database is given a medium confidence rating because of the support of chronic data, but the lack of reproductive data. Medium 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 — 05/20/1985, 05/31/1985

Verification Date — 05/31/1985

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 Trichlorofluoromethane 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 — Trichlorofluoromethane
CASRN — 75-69-4

Not available at this time.

II. Carcinogenicity Assessment for Lifetime Exposure

Substance Name — Trichlorofluoromethane
CASRN — 75-69-4

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 — Trichlorofluoromethane
CASRN — 75-69-4

VI.A. Oral RfD References

Leuschener, F., B.W. Neumann and F. Hubscher. 1983. Report on the subacute toxicological studies with several fluorocarbons in rats and dogs by inhalation. *Arzneim-Forsch.* 33(10): 1475-1476.

NCI (National Cancer Institute). 1978. Bioassay of trichlorofluoromethane for possible carcinogenicity. Report No. 106, PHS/NIH, DWEH, Publ. No. 78- 1356.

VI.B. Inhalation RfC References

None

VI.C. Carcinogenicity Assessment References

None

VII. Revision History

Substance Name — Trichlorofluoromethane
CASRN — 75-69-4

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

VIII. Synonyms

Substance Name — Trichlorofluoromethane

CASRN — 75-69-4

Last Revised — 01/31/1987

- 75-69-4
- ALGOFRENE TYPE 1
- ARCTON 9
- ELECTRO-CF 11
- ESKIMON 11
- F 11
- FC 11
- FLUOROCARBON NO. 11
- FLUOROTRICHLOROMETHANE
- FLUOROTROJCHLOROMETAN
- FREON 11
- FREON 11A
- FREON 11B
- FREON HE
- FREON MF
- FRIGEN 11
- GENETRON 11
- HALOCARBON 11
- ISCEON 131
- ISOTRON 11
- LEDON 11
- MONOFLUOROTRICHLOROMETHANE
- NCI-C04637
- RCRA WASTE NUMBER U121
- Trichlorofluoromethane
- TRICHLOROMONOFLUOROMETHANE
- UCON FLUROCARBON 11
- UCON REFRIGERANT 11