

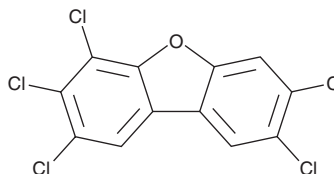
PRODUCT INFORMATION



2,3,4,7,8-Pentachlorodibenzofuran

Item No. 38626

CAS Registry No.: 57117-31-4
Synonyms: 2,3,4,7,8-PCDF, PCDF, PCDF 114
MF: $C_{12}H_3Cl_5O$
FW: 340.4
Purity: $\geq 85\%$
Supplied as: A solid
Storage: $-20^{\circ}C$
Stability: ≥ 4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

2,3,4,7,8-Pentachlorodibenzofuran is supplied as a solid. A stock solution may be made by dissolving the 2,3,4,7,8-pentachlorodibenzofuran in the solvent of choice, which should be purged with an inert gas. 2,3,4,7,8-Pentachlorodibenzofuran is slightly soluble in acetone (sonicated) and benzene.

Description

2,3,4,7,8-Pentachlorodibenzofuran is a dioxin-like polychlorinated dibenzofuran (PCDF).¹ It induces the expression of genes encoding the cytochrome P450 (CYP) isoforms CYP1A1 and CYP1A2 in primary human hepatocytes ($EC_{50}s = 0.369$ and 0.329 nM, respectively) and aryl hydrocarbon hydroxylase (AHH) and ethoxyresorufin-O-deethylase (EROD) in H-4-II-E rat hepatoma cells ($EC_{50}s = 0.256$ and 0.134 nM, respectively).^{2,3} Serum levels of 2,3,4,7,8-pentachlorodibenzofuran are elevated in humans that consumed products from plants and animals grown and raised in dioxin-contaminated river sediments.¹ 2,3,4,7,8-Pentachlorodibenzofuran ($300 \mu g/kg$) decreases maternal and fetal weight and the number of live fetuses, as well as increases maternal thymus and liver weight and the percentage of fetuses with cleft palate, in developing fetuses in pregnant rat dams.⁴

References

1. Franzblau, A., Hedgeman, E., Joliet, O., *et al.* Case report: The University of Michigan dioxin exposure study: A follow-up investigation of a case with high serum concentration of 2,3,4,7,8-pentachlorodibenzofuran. *Environ. Health Perspect.* **118**(9), 1313-1317 (2010).
2. Budinsky, R.A., LeCluyse, E.L., Ferguson, S.S., *et al.* Human and rat primary hepatocyte CYP1A1 and 1A2 induction with 2,3,7,8-tetrachlorodibenzo-p-dioxin, 2,3,7,8-tetrachlorodibenzofuran, and 2,3,4,7,8-pentachlorodibenzofuran. *Toxicol. Sci.* **118**(1), 224-235 (2010).
3. Bandiera, S., Sawyer, T., Romkes, M., *et al.* Polychlorinated dibenzofurans (PCDFs): Effects of structure on binding to the 2,3,7,8-TCDD cytosolic receptor protein, AHH induction and toxicity. *Toxicology* **32**(2), 131-144 (1984).
4. Couture, L.A., Harris, M.W., and Birnbaum, L.S. Developmental toxicity of 2,3,4,7,8-pentachlorodibenzofuran in the Fischer 344 rat. *Fundam. Appl. Toxicol.* **12**(2), 358-366 (1989).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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