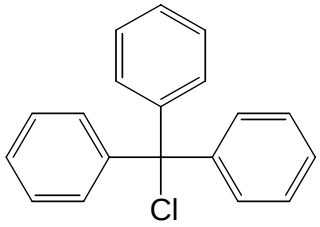
INITIAL TARGETED ASSESSMENT PROFILE

CAS No.	76-83-5
Chemical Name	Triphenylmethyl chloride
Structural Formula	

SUMMARY CONCLUSIONS OF THE TARGETED ASSESSMENT

NOTE: The present assessment is targeted to address only the following endpoint(s): Human Health: acute toxicity, repeated dose toxicity and mutagenicity. It cannot be considered as a full SIDS Initial Assessment. Nevertheless, the conclusions for the endpoints addressed have been agreed by member countries and may be used for hazard and risk assessment. Results on other endpoints may be relevant for hazard and risk assessment but have not been addressed in the assessment.
As the following results demonstrate, triphenylmethyl chloride was designated as a Type II monitoring chemical substance under the Japanese Chemical Substances Control Law; such chemicals may have potential of long- term toxicity for human health, and their production volume should be monitored.

Rationale for targeting the assessment

Under the Japanese Chemical Substances Control Law, hazard assessment of existing chemical substances has been conducted. If a chemical substance is evaluated as "not biodegradable (persistent)" and "not highly bioaccumulative", at least a 28-days repeated dose toxicity study and two *in vitro* mutagenicity studies are required as screening studies for hazard evaluation regarding human health. If a chemical is evaluated as having potential of long- term toxicity for human health, the chemical is classified as a Type II Monitoring Chemical Substance. If not, the chemical is of low priority for further action. Type II Monitoring Chemical Substances undergo risk-based management; at first, annual production volumes of those substances are monitored.

Triphenylmethyl chloride was evaluated as "not biodegradable (persistent)" and "moderately bioaccumulative" by METI (Ministry of Economy, Trade and Industry). Biodegradation and bioaccumulation are not parts of the targeted assessment and therefore not presented in ITAP. The initial hazard assessment of triphenylmethyl chloride was conducted in order to determine whether the chemical is classified as a Type II monitoring chemical substance in Japan.

This assessment document was originally based on the material from the chemical assessment council of MHLW (Ministry of Health, Labour and Welfare), and we reassessed the toxicological profile and re-established NOAELs for the OECD HPV chemical programme.

Physical-chemical properties (neither assessed, nor part of the targeted assessment, provided for information only)

Triphenylmethyl chloride is a white to slight yellow powder with a melting point of 113.5 °C, a boiling point of 310 °C and a calculated vapour pressure of 0.000516 Pa at 25 °C. A measured octanol-water partition coefficient (log K_{ow}) is 5.25, and estimated water solubility is 0.535 mg/L at 25 °C.

Human Health

The oral LD_{50} value in rats for triphenylmethyl chloride was greater than 2000 mg/kg bw in both sexes (OECD TG 401). Triphenylmethyl chloride administered orally caused no effects at a dose of 2000 mg/kg bw in rats.
In a repeated dose oral toxicity study in rats following standard guideline for 28-Day Repeated Dose Toxicity Test in Mammalian Species in compliance with GLP, the substance was administered via gavage at 0 (vehicle control: corn oil), 12, 60, 300 mg/kg bw/day for 28 days. No death was observed in either sex. Increased relative liver weight and hypertrophy of the centrilobular hepatocytes were evident in both sexes given 60 and 300 mg/kg bw/day. A decrease in serum glucose level was observed in females at 60 and 300 mg/kg bw/day and in males at 300 mg/kg bw/day. Mucosal thickening of the cecum was observed in females given 60 mg/kg bw/day and both sexes given 300 mg/kg bw/day. Based on these results, the NOAEL of repeated dose oral toxicity was considered to be 12 mg/kg bw/day in both sexes.

In a bacterial mutation study using four strains of *Salmonella typhimurium* and an *Escherichia coli* WP2 *uvr*A strain (OECD TG 471), triphenylmethyl chloride was negative with and without metabolic activation. An *in vitro* chromosome aberration test using CHL/IU cells gave also negative results in either the presence or absence of metabolic activation (OECD TG 473). All positive controls responded appropriately for gene mutations and chromosomal aberration assays. Based on these results, triphenylmethyl chloride is considered to be non genotoxic *in vitro*.

Agreed hazard conclusions

The chemical possesses properties indicating a hazard for human health endpoints targeted in this assessment (repeated dose toxicity) .

Available Exposure information (not part of the targeted assessment, provided for use information only)

In Japan, triphenylmethyl chloride is mainly used as an intermediate in medicines.