



CYHEXATIN

CAS number: 13121-70-5

Synonyms: Plictran, tricyclohexyltin hydroxide

Chemical formula: $C_{18}H_{34}OSn$

Workplace exposure standard (retained)

TWA: 5 mg/m³

STEL: —

Peak limitation: —

Notations: —

IDLH: —

Sampling and analysis: The recommended value is quantifiable through available sampling and analysis techniques.

Recommendation and basis for workplace exposure standard

An interim TWA of 5 mg/m³ is recommended to protect for eye irritation and kidney damage in exposed workers.

Given the limited data available from the primary sources, it is recommended that a review of additional sources be conducted at the next scheduled review.

Discussion and conclusions

Cyhexatin is organic tin compound used as an acaricide in veterinary products.

No adequate data for inhalation exposure in humans or animals are available. The critical effects associated with oral exposure include decreased weight gain, eye irritation and kidney damage.

The current TWA was derived by ACGIH (2018) based on an NOAEC extrapolated from a NOAEL of 3 mg/kg/day in a two year oral study in dogs. There is no additional data to suspect that this TWA is not protective.

Because of the limited toxicological evidence available in humans and animals in primary and secondary sources, it is recommended that investigation of additional sources be undertaken at the next scheduled review.

Recommendation for notations

Not classified as a carcinogen according to the Globally Harmonized System of Classification and Labelling of Chemicals (GHS).

Not classified as a skin sensitiser or respiratory sensitiser according to the GHS.

There are insufficient data to recommend a skin notation.

APPENDIX

Primary sources with reports

Source	Year set	Standard
SWA	1991	TWA: 5 mg/m³
ACGIH	2001	TLV-TWA: 5 mg/m³
<p>TLV-TWA recommended to minimise the potential for eye irritation, anorexia and kidney damage.</p> <p>Summary of data:</p> <p>Assigned an A4 classification, not classified as human carcinogen.</p> <p>Insufficient data to assign a sensitiser or skin notation.</p> <p>Animal data:</p> <ul style="list-style-type: none"> LD₅₀: 458, 780 and 275 mg/kg (rabbits, guinea pigs and mice, respectively; oral) LC₅₀: 244 mg/m³ (rats, inhalation) Cattle exposed to 0.025–0.5% in water (dermal), 4 d for 14 d, no ill effects observed, a single application of 1% resulted in transitory anorexia Acute toxicity threshold: 6.5 mg/m³; kidney damage NOEL: 6 mg/kg/d (rats, 2 yr, oral); body weight gain NOEL: 3 mg/kg/d (dogs, 2 yr, oral); body weight gain NOEL of 4–6 mg/kg/d in rats in a 3-generation fertility study (only doses) Inhalation exposure at 0.17 mg/m³ produced no embryotropic teratogenic effects (no species or duration were noted). <p>TLV-TWA basis:</p> <ul style="list-style-type: none"> Conflicting information in data to extrapolate oral data to inhalation TLV When converted, a 70 kg worker exposed to a TWA of 5 mg/m³, inhaling 10 m³ of air over an 8-h shift would receive a dose equivalent to 0.7 mg/kg (rounded 0.5 mg/kg for 7 d). This concentration is below the NOEL of 3 mg/kg/d in animals. 		
DFG	NA	NA
No report.		
SCOEL	NA	NA
No report.		
OARS/AIHA	NA	NA
No report.		
HCOTN	NA	NA
No report.		

Secondary source reports relied upon

Source	Year	Additional information
NICNAS	* 2019	Tier 1 Human Health Assessment - Non-industrial classification No additional information.
ECHA	* 2019	No additional information.

Carcinogenicity — non-threshold based genotoxic carcinogens

Is the chemical mutagenic?

Insufficient data

Is the chemical carcinogenic with a mutagenic mechanism of action?

Insufficient data

Insufficient data are available to determine if the chemical is a non-threshold based genotoxic carcinogen.

Notations

Source	Notations
SWA	—
HCIS	—
NICNAS	NA
EU Annex	NA
ECHA	—
ACGIH	—
DFG	NA
SCOEL	NA
HCOTN	NA
IARC	NA
US NIOSH	NA

NA = not applicable (a recommendation has not been made by this Agency); — = the Agency has assessed available data for this chemical but has not recommended any notations

Skin notation assessment

Calculation

Insufficient data to assign a skin notation.

IDLH

Is there a suitable IDLH value available?

No

Additional information



Molecular weight:	386.19
Conversion factors at 25°C and 101.3 kPa:	1 ppm = Number mg/m ³ ; 1 mg/m ³ = Number ppm
This chemical is used as a pesticide:	<input checked="" type="checkbox"/>
This chemical is a biological product:	<input type="checkbox"/>
This chemical is a by-product of a process:	<input type="checkbox"/>
A biological exposure index has been recommended by these agencies:	<input type="checkbox"/> ACGIH <input type="checkbox"/> DFG <input type="checkbox"/> SCOEL

Workplace exposure standard history

Year	Standard
Click here to enter year	

References

American Conference of Industrial Hygienists (ACGIH®) (2018) TLVs® and BEIs® with 7th Edition Documentation, CD-ROM, Single User Version. Copyright 2018. Reprinted with permission. See the [TLVs® and BEIs® Guidelines section](#) on the ACGIH website.

European Chemicals Agency Regulation (ECHA) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).

National Industrial Chemicals Notification and Assessment Scheme (NICNAS) (2019) Cyhexatin: Human health tier I assessment – IMAP report.