

BROMACIL

CAS number: 314-40-9

Synonyms: Uracil, 5-Bromo-3-sec-butyl-6-methyluracil

Chemical formula: $C_9H_{13}BrN_2O_2$

Workplace exposure standard (interim)

TWA: 1 ppm (11 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 1 ppm (11 mg/m³) is recommended to protect for nuisance effects 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

Bromacil is a non-selective herbicide used for general weed and brush control and in the production of citrus and pineapple.

Toxicological data are limited and no human exposure data are currently available. Based on animal studies, bromacil is of low acute and chronic toxicity.

A two-year feeding study reported no effect dietary levels between 250 and 1,250 ppm in rats and dogs. Slight thyroid changes were reported in sub-chronic and chronic feeding studies in rats with up to 1,250 and 7,500 ppm, respectively. A 78 week dietary study reported hepatocellular adenomas and carcinomas in male mice at 871 mg/kg/day. Consequently, a TWA of 1 ppm (10 mg/m³) is recommended by ACGIH (ACGIH, 2018).

A TWA of 1 ppm is recommended based on the limited available data and is considered sufficiently low to protect exposed workers. However, there is limited evidence to support the ACGIH recommendations, a further review of the literature should 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.

A skin notation is not recommended due to a low acute and chronic toxicity.

APPENDIX

Primary sources with reports

Source	Year set	Standard
SWA	1991	TWA: 1 ppm (11 mg/m³)
ACGIH	2001	TLV-TWA: 10 mg/m³ (1 ppm)
TLV-TWA recommended to minimise the potential for nuisance effects based on the low order of acute and chronic toxicity. Summary of data: No human data presented. Animal data: • Rats tolerated 4,800 mg/m³ for 4 h • Mildly irritating to guinea pig skin but did not cause sensitisation (no further information) • No clinical signs of toxicity following application of 5,000 mg/kg to skin of rabbit • No-effect dietary levels between 250–1,250 ppm for rats and dogs (2 yr feeding study) • Slight histological changes in the thyroid of rats at 2,500–7,500 ppm (90 d feeding study) and at 1,250 ppm (2 yr feeding study) (no further information) • No evidence of reproductive, teratogenic or carcinogenic effects (chronic feeding study of rats and rabbits 250 ppm/d duration not specified) • Dietary study reported increased incidence of hepatocellular adenomas and carcinomas from in males (mice, 871 mg/kg/d or 81 ppm, 78 wk) • Carcinogenicity-A3 classification assigned based on slight hyperplasia of thyroid tissue and hepatocellular adenomas and carcinomas in animals • Not mutagenic in 5 assays.		
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

NIL.

Carcinogenicity — non-threshold based genotoxic carcinogens

Is the chemical mutagenic?

No

The chemical is not a non-threshold based genotoxic carcinogen.

Notations

Source	Notations
SWA	—
HCIS	—
NICNAS	NA
EU Annex	NA
ECHA	NA
ACGIH	Carcinogenicity – A3
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
Adverse effects in human case study: Dermal LD₅₀ ≤ 1000 mg/kg: no Dermal repeat-dose NOAEL ≤ 200 mg/kg: Dermal LD₅₀/Inhalation LD₅₀ < 10: <i>In vivo</i> dermal absorption rate > 10%: Estimated dermal exposure at WES > 10%: a skin notation is not warranted

IDLH

Is there a suitable IDLH value available?

No

Additional information



Molecular weight:	261.12
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:	☒
This chemical is a biological product:	☐
This chemical is a by-product of a process:	☐
A biological exposure index has been recommended by these agencies:	☐ ACGIH ☐ DFG ☐ SCOEL

Workplace exposure standard history

Year	Standard
Click here to enter year	

References

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