



SESONE

CAS number: 136-78-7

Synonyms: Crag® Herbicide-1, 2,4-DES sodium,
2,4-dichlorophenoxyethyl hydrogen sulfate salt, disul-
sodium, sodium-2(2,4-dichlorophenoxy)ethyl sulphate

Chemical formula: $C_8H_7Cl_2NaO_5S$

Structural formula: —

Workplace exposure standard (amended)

TWA: —

STEL: —

Peak limitation: —

Notations: —

IDLH: —

Sampling and analysis: N/A.

Recommendation and basis for workplace exposure standard

This chemical has been nominated for removal from the *Workplace exposure standards for airborne contaminants* (WES) due to a lack of evidence that it is used or generated in Australian workplaces or that it presents a potential for legacy exposure. Therefore, a TWA is not recommended.

Discussion and conclusions

Sesone was a commercially used herbicide of which, commercial production has been discontinued. There is lack of evidence that this chemical is used or generated in Australian workplaces or that it presents a potential for legacy exposure.

No human toxicological data and very limited animal data are available. Oral LD₅₀ values for rats ranged from 730 to 1,500 mg/kg, with death caused by respiratory paralysis. No adverse effects are noted in a two-year feeding study in rats (dose 0.02% of diet) or one year feeding study in dogs (dose 0.036% of diet) (ACGIH, 2018).

This chemical has been nominated for removal from the WES list. A TWA is not recommended.

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: 10 mg/m³ |
| ACGIH | 2001 | TLV-TWA: 10 mg/m³ |
| <p>TLV-TWA recommended to minimise irritation to skin, eyes and gastrointestinal system in exposed workers.</p> <p>Summary of data:</p> <ul style="list-style-type: none"> No human data available. <p>Animal data:</p> <ul style="list-style-type: none"> LD₅₀: 730–1,500 mg/kg (rats, oral); death caused by respiratory paralysis, impact to liver and kidney; no further information 1–10% solutions caused irritation to rabbit skin and eyes; ≥5% caused dermal necrosis 60 mg/100 g (0.06%) fed to rats (2 yr duration) caused gastrointestinal irritation and minor liver injury; 20 mg/100 g (0.02%) no adverse effects; 36 mg/100 g (0.036%) tolerated by dogs (1 yr duration); no signs of tumourigenicity. <p>Metabolised <i>in vivo</i> to 2,4-D. TLV-TWA assigned based on no adverse effects reported from field use. Insufficient data to recommend Skin or SEN notations or a TLV-STEL.</p> | | |
| 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 |
|----------|--------|---|
| ECHA | ✓ 2019 | <ul style="list-style-type: none"> No additional information. |
| US NIOSH | ✓ 1994 | <ul style="list-style-type: none"> REL 10 mg/m³ (total dust), 5 mg/m³ (respirable dust) Reported low toxicity to mammals, no further information No acute inhalation data available; IDLH estimated based on LD₅₀: 730 mg/kg (rat, oral). |

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 | NA |
| ACGIH | Carcinogenicity – A4 |
| 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

Insufficient data to assign a skin notation.

IDLH

Is there a suitable IDLH value available? Yes

Additional information

| | |
|---|---|
| Molecular weight: | 309.10 |
| 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"/> |



| | |
|---|--|
| Molecular weight: | 309.10 |
| 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: | ✓ |
| 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) (2019) Disul – Infocard.

US National Institute for Occupational Safety and Health (NIOSH) (1994) Immediately dangerous to life or health concentrations – Crag® herbicide.