

Sodium lauryl sulfate (SLS, sodium dodecyl sulfate, SDS)

CAS number: 151-21-3

MF: $\text{CH}_3(\text{CH}_2)_{11}\text{OSO}_3\text{Na}$

FW: 288.4

Soluble in water.

Major uses

Sodium lauryl sulfate (SLS) is an anionic surfactant detergent, widely used in the industrial production of cosmetics (soaps, toothpastes, shampoos, creams etc) and several housekeeping cleaning products, e.g. dishwashing detergents. SLS is used in metal, paper and pigment industries. It is used as a food additive and also as a dispersing agent in medical preparations. It is often used in laboratory, e.g. in electrophoresis, and as a component of different buffers and solutions. SLS is a reference toxicant in aquatic and mammalian toxicological testing [1].

Human toxicity

SLS possesses of moderate acute and chronic toxicity. It is a contact irritant for eye and skin. It can also induce allergy [2]. Probable oral lethal dose: 0.5-5 g/kg [1].

The toxic and lethal blood concentrations are not available.

Occupational exposure to SLS may occur through inhalation of dust particles and dermal contact with this compound at workplaces where SLS is produced or used. The general population may be exposed through the use of detergents, shampoos, toothpaste and other consumer products containing this compound.

Data concerning an acute poisoning are not available, possibly, due to the fact that SLS is always present together with other chemicals in different products.

Kinetic data

Human kinetic data are not available.

Absorption: possibly, SLS is not absorbed itself, but it can increase skin permeability for other compounds.

Metabolism and excretion

Human data are not available.

Taken by mouth, SLS stimulates gastric mucus production and can inactivate pepsin in test animals [1].

Toxicological mechanism

Unknown.

References

1. Poisindex, Thomson Micromedex (2005).
2. Grant WM, Schuman JS (1993) Toxicology of the eye, 4th ed., 1312-1313.

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