Application of criteria in 3.8.1.1 and 3.8.1.6 showing that a substance should not be classified into the specific target organ toxicity (single exposure) hazard class when the target organ effect(s), following a single exposure, are serious adverse health effects (i.e. lethality) meeting the acute toxicity hazard classification criteria

Information on substance

Data

Acute toxicity animal data

Route	Species	LD_{50} value	Remark
Oral	Rat	275 mg/kg	• Severe lethal damage in kidney in 5 out of 10 animals (macroscopic examination). Mortality in the same 5 out of 10 animals was observed. • No other effects on organs were noted during necropsy.

Answer

Acute oral toxicity, Category 3

Rationale

(a) Acute oral toxicity

Classification via application of criteria in GHS Table 3.1.1 is possible. The study used the preferred test species (i.e., rat) as noted in paragraph 3.1.2.3 and the Oral (rat) LD_{50} of 275 is within the Category 3 range of $50 < ATE \leq 300$ resulting in a Category 3 classification via the oral route.

(b) Specific Target Organ Toxicity – Single Exposure (STOT- SE)

To be classified into STOT-SE the effects on the kidney or another organ system would need to be non-lethal (paragraph 3.8.1.1) (i.e., not meeting the acute toxicity criteria). Given the limited data (i.e., no additional data at lower doses indicating non-lethal effects on the kidney) in this example, that the only noted effect is on the kidney, and the data support classification into the acute toxicity hazard class, the effect is not in scope for consideration in the STOT-SE hazard class (paragraphs 3.8.1.1 and 3.8.1.6) as it would lead to classification for the same effect/mechanism. Thus, there is no STOT-SE classification. However, if there were additional data showing significant non-lethal effects on the kidney at lower dose levels then expert judgement would be needed to determine if a STOT-SE classification would also be warranted.

(Reference document: ST/SG/AC.10/C.4/2020/14, example 1)