

From: [INFOCNTR \(PHMSA\)](#)
To: [Baker, Yul \(PHMSA\)](#)
Cc: [Hazmat Interps](#)
Subject: FW: letter of interpretation request Dapsone (80-08-0)
Date: Friday, July 25, 2025 15:07:03

Hi Yul,

Please see the below interpretation request.

Let us know if you need anything.

Janaye

From: Matt Austin <matthew_austin@huntsman.com>
Sent: Friday, July 25, 2025 12:21 PM
To: INFOCNTR (PHMSA) <INFOCNTR.INFOCNTR@dot.gov>
Subject: letter of interpretation request Dapsone (80-08-0)

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Hello,

We are shipping a chemical commercially called dapsone (CASRN 80-08-0). It has reported oral LD50 values ranging from 250 mg/kg to 1000 mg/kg. Dapsone is shipped by various manufacturers as a hazardous material UN3077 Environmentally hazardous substance, solid, n.o.s. Our toxicologists recently reviewed the data on dapsone and determined “*In an acute oral toxicity study (Denton, 2001) adverse effects such as high levels of methemoglobin formation and elevated Heinz body count were identified. Such high levels of methemoglobin findings were also seen in repeat dose toxicity studies in rats treated with dapsone. These effects are known to be adverse effects of Dapsone. In addition to the experimental data on acute oral toxicity in laboratory animals, multiple case studies of human poisoning cases have been published in the scientific literature. Dapsone poisoning causes haemolytic anemia and an increase of methemoglobin levels in blood which decrease the blood oxygen levels and in more severe cases can result in hypoxia and death. The dose which can cause a potentially fatal outcome without medical treatment ranges from 200 mg/person (ca. 3.3 mg/kg bw) to 15 g/person (ca. 250 mg/kg bw).*”

There is a large range of Dapsone doses that cause severe and, in some cases, lethal effects in humans, the majority of severe cases at doses below 250 mg/kg bw. In summary, considering the data from the acute oral toxicity study in rabbits and the data from the human poisoning cases, we estimate that the ATE is ca. 250 mg/kg bw. The findings are in line with information from studies conducted to support the medical use of Dapsone and additional information from the public literature on Dapsone. Based on the overall Weight of Evidence, 250 mg/kg dose for acute oral toxicity study is considered as a median lethal dose”

The adoption of the lower LD50 value resulted in our classifying the material as a GHS oral toxic 3 under OSHA guidelines. This would also result in dapsone being classed as a toxic solid based on 49CFR173.132(a)(1)(i) “A liquid or solid with an LD50 for acute oral toxicity of not more than 300 mg/kg”. Dapsone is a talc like powder that is shipped in durable bags. Under normal conditions of transport there is no foreseeable possibility of dapsone being ingested and therefore we feel that it should not be considered a toxic hazardous material for transport. Is this a correct interpretation of the hazardous materials regulations?

Regards,

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