



Accepted: 31 January 2018

ICBA¹/ POSITION STATEMENT ON TRANSPORT OF CAFFEINE

ICBA member companies promote safe handling of all ingredients used in their products and regularly review the scientific literature to be certain that current information is applied. Upon careful evaluation of all relevant data on caffeine, ICBA finds that the most appropriate classification for caffeine under the “UN Recommendations on the Transport of Dangerous Goods” would be “not dangerous for transport,” without assignment to any of the identified Packing Groups.

Background

Caffeine, through its categorization as an alkaloid (UN No. 1544 – a large, diverse group of compounds), has been placed in Class 6.1 “toxic substances” for purposes of classification, labeling and packaging for transport. In the UN Recommendations on the Transport of Dangerous Goods,² a criterion for assignment of a packing group to Class 6.1 – a classification category deemed “dangerous for transport” – is an acute oral lethal dose 50% (LD₅₀) of 300 mg/kg or less in male rats.³ A Class 6.1 substance is considered to be a toxic substance liable either to cause death or serious injury or to harm human health when swallowed (or inhaled or by skin contact, but these are not relevant to caffeine).

Notably, categorization of caffeine as “dangerous for transport” presents operational impediments throughout the supply chain. As explained further below, this classification is inappropriate given the preponderance of data on caffeine toxicity levels.

Approach

To determine whether caffeine is appropriately considered a Class 6.1 substance, a competent and thorough review of the scientific literature was undertaken by a qualified toxicologist to objectively assess the LD₅₀ of caffeine. This review, recently published in a peer-reviewed

¹ The International Council of Beverages Associations (ICBA) is an international nongovernmental organization that represents the interests of the worldwide non-alcoholic beverages industry. The members of ICBA operate in more than 200 countries and produce, distribute, and sell a variety of non-alcoholic beverages, such as sparkling and still beverages including soft drinks, juice-containing beverages, bottled waters, sports drinks, energy drinks and ready-to-drink coffees and teas.

² United Nations Economic Commission for Europe (UNESCE) publication – Recommendations on the Transport of Dangerous Goods (http://www.unece.org/fileadmin/DAM/trans/danger/publi/unrec/rev17/English/Rev17_Volume1.pdf)

³ LD₅₀ for acute oral toxicity was defined as “the statistically derived single dose of a substance that can be expected to cause death within 14 days in 50 percent of young albino rats when administered by the oral route.”

journal, considered all data on caffeine's acute toxicity including unpublished data. The review concludes that the LD₅₀ is well above 300 mg/kg.^{4/} (See Table 1 in Adamson, 2016).

Position

The 2016 review, leveraging the criteria set by the UN, shows that caffeine should be removed from the "alkaloids" group (UN No. 1544) and no longer considered a Class 6.1 substance. The appropriate classification for caffeine is "Not dangerous for transport."

Suppliers and users of caffeine and national governments should be made aware of this information and work with the UN to have caffeine properly classified for labeling, packaging and transport.

LD₅₀ for acute oral toxicity was defined as "the statistically derived single dose of a substance that can be expected to cause death within 14 days in 50 percent of young albino rats when administered by the oral route."