

Determination of Sudan Blue II

Synthetic dyes are widely used as colouring reagents in the various industries, such as food, textile, and petroleum and they are responsible for the bright colours of candy, sports drinks and baked goods.

One such class of dyes, Sudan dyes, that contain azo functional groups and aromatic rings, can have adverse effects on human health and environment.

Sudan Blue II (see **Figure 1**) is used as a dye for staining alcohols, ester, hydrocarbon derivatives, oils, fats, and waxes.¹

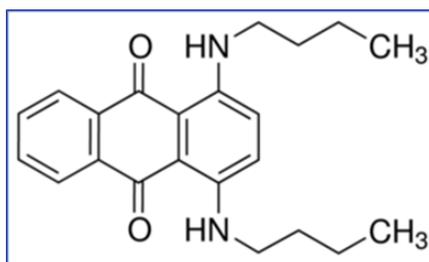


Figure 1: Sudan Blue II (CAS 17354-14-2)

Carcinogenic effect of Sudan dyes has been recognized by researchers. Sudan Blue II is harmful to human and animals; it causes irritation to the skin, eyes, and respiratory tract.¹

In November 2021 the European Commission published a RASFF notification (Reference number 2021.6457:

<https://webgate.ec.europa.eu/rasff-window/screen/notification/517761>) regarding the presence of Sudan Blue II in ice cream.²

Sudan dyes are not permitted for colouring foodstuffs. Regulation CE 1333/2008 contains a positive list listing all substances authorised for food: Sudan dyes are not mentioned in this list and are therefore strictly prohibited.

Neutron proposal

Neutron performs the analysis of Sudan Blue II by LC-MS/MS technique, permitting to detect the residues with a limit of quantification of 0,010 mg/kg.

References:

1. *Spectrophotometric determination of Sudan Blue II in environmental samples after dispersive liquid-liquid microextraction*, Yunus Emre Unsal, Mustafa Tuzen, Mustafa Soylak, 2014.
2. RASFF - food and feed safety alerts, *European Commission*.
3. Opinion of the Scientific Panel on Food Additives, Flavourings, Processing Aids and Materials in Contact with Food on a request from the Commission to Review the toxicology of a number of dyes illegally present in food in the EU, Question number EFSA-2005-082, *EFSA Journal* **2005**; 263, 1-71.