Substance Information Document

Invert sugar

1. Substance identity

Name	Invert sugar
Synonyms	(2R,3S,4R,5R)-2,3,4,5,6-pentahydroxyhexanal (3S,4R,5R)-1,3,4,5,6-pentahydroxyhexan-2-one
IUPAC Name	(2R,3S,4R,5R)-2,3,4,5,6-pentahydroxyhexanal;(3S,4R,5R)-1,3,4,5,6-pentahydroxyhexan-2-one
CAS	8013-17-0

2. Toxicological information

According to the notifications provided by companies to ECHA in REACH registrations no hazards have been classified.

The oral point of departure (POD) was reported at 27000 mg/kg/day for rat from a subchronic study for 105 days (http://www.cosmostox.eu/what/COSMOSdb/).

Reproductive and developmental toxicology – substance-related data were not found.

Irritation and sensitization – substance-related data were not found.

Genotoxicity – A rat study was conducted to evaluate the effects of invert sugar overload (32%) in rats. After 17 days, primary DNA damage, evaluated by the comet assay, was increased in the blood (but not in the pancreas). Protein carbonylation was not seen in serum. Moreover, no increase in permanent DNA damage was seen in the bone marrow, evaluated using the micronucleus test.

JECFA	-
FEMA	-
EFSA	-
ECHA – REACH dossier	Substance Information - ECHA (europa.eu)
PUBCHEM	Invert sugar | C12H24O12 - PubChem (nih.gov)
CIR	-
OSHA	-

3. Addictiveness and attractiveness

Thorough examination of the data available suggests that the use of sugars as ingredients in cigarette tobacco does not increase the inherent risk and harm of cigarette smoking (PMID: 22263649).

SCENIHR	-
EMA	-
PUBMED	Scientific assessment of the use of sugars as cigarette tobacco ingredients: a review of published and other publicly available studies - PubMed (nih.gov) Invert sugar induces glucose intolerance but does not cause injury to the pancreas nor permanent DNA damage in rats - PubMed (nih.gov)