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User safety and feed additives
Observations and reflections

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User's safety requirements for feed additives

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- SCAN 1987/1992: "Studies … intended to permit assessment of the risks from inhalation or from cutaneous, mucosal or eye contact for persons likely to handle the additive as such or as incorporated into premixtures or/of feedingstuffs"
  - acute inhalational toxicity, skin and, where necessary, mucous membranes irritancy and also allergenic potential
- SCAN 1999: "the risks from respiratory, other mucosal, eye or cutaneous contact for persons likely to handle the additive as such or as incorporated into premixtures or feedingstuffs"
  - The main routes of concern are inhalation and topical exposure.
  - Farm workers are potentially exposed when handling or mixing the feed additives.
  - Experience in the manufacturing plant is often an important source of information … both airborne and topical routes.
  - Of particular concern are additives/additive-treated feed and/or animal excreta which are in, or may give rise to, a dry powdery form and feed additives which may have allergenic potential.

429/2008

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- Text follows in general SCAN 1999
- **All additives are equal**
- *An assessment of risk to workers shall be included*
- Comprehensive catalogue of escalating studies without any reference and consideration of assessments required for other uses (chemical: cosmetic, house hold)
- No consideration of 3R
- Measures to control exposure based on “single substance scenario”
- MSDS to be based on chemical’s legislation but not Section III

EU legislation on chemicals (pre/post 2008)

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- Council Directive 67/548 (dangerous substances) did not apply to feedingstuffs for the final consumer
- Council Directive 88/369 on CPL of dangerous preparations exempted only "animal feedingstuffs in a finished stage intended for the final consumer"
- Commission Directive 91/155: safety data sheets (MSDS) for dangerous substances and preparations are for "industrial users and must enable them to take the measures necessary to ensure the protection of health and safety at the workplace"
- Reinforced by REACH (1907/2006) and CLP (1272/2008):
  - B2B feed products are covered by EU legislation on chemicals
  - All feed additives consisting of active substances and preparations (mixtures) - unless sold to the final user
  - Premixtures and other B2B feed products
- Clear rules for hazards of substances used in preparations ("dilution")

Additive and preparations

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- SCAN 1999: «The worker safety of the formulated product should be addressed … formulated commercial product should be examined for irritancy"
- One authorized additive may be present in the market in several or even many commercial products
- For generic products legislation is designed to allow marketing of preparations that have not been evaluated specifically
- Safety data for one "formulated commercial product" are not by default applicable to other "formulated commercial product"
- Regulation 2015/327 introduced "preparation" as a legal category ("… reduce the dusting potential of the active substance"):
- "… categories referred to in Article 6(1)(a), (b) and (c) of Regulation (EC) No 1831/2003. Where such additives are authorised as preparations, only the active substance is indeed the subject of the authorisation, and not the other components of the preparations, which may vary"

FEEDAP and premixtures

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- Worker's exposure model developed by FEEDAP
- Validated for real situations ?
  - When handling twenty plus substances, does hazard management really considers single compounds?
  - Will the most hazardous single substance not drive the measures for the whole plant?
- And again the «generic» problem: only valid for the three batches of **the** preparation for which dusting potential was determined …

Data i.e. evidence required ? 3R ?

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Whereas 25 – Regulation 1272/2008 (CLP)

> …Accordingly, where the manufacturer, importer or downstream user chooses to generate information for the purposes of this Regulation, they should first consider means other than testing on animals…

Article 7 (1) – Regulation 1272/2008 (CLP):

> Where new tests are carried out for the purposes of this Regulation, tests on animals within the meaning of Directive 86/ 609/EEC shall be undertaken only where no other alternatives, which provide adequate reliability and quality of data, are possible

Article 25 (1) – Regulation 1907/2006 (REACH)

> In order to avoid animal testing, testing on vertebrate animals for the purposes of this Regulation shall be undertaken only as a last resort. It is also necessary to take measures limiting duplication of other tests.

Vitamin D3 is covered by 1272/2008

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Table 3

List of harmonised classification and labelling of hazardous substances

Index No	►M17 Chemical name ◄	EC No	CAS No	Classification		Labelling	
				Hazard Class and Category Code(s)	Hazard statement Code(s)	Pictogram, Signal Word Code(s)	Hazard statement Code(s)
603-180-00-4	colecalciferol; Vitamin D3	200-673-2	67-97-0	Acute Tox. 2 * Acute Tox. 3 * Acute Tox. 3 * STOT RE 1	H330 H311 H301 H372 **	GHS06 GHS08 Dgr	H330 H311 H301 H372 **

Volatile flavourings (1272/2008)

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Classification criteria for substances

Table 3.10.1

Hazard category for aspiration toxicity

Category	Criteria
Category 1	Substances known to cause human aspiration toxicity hazards or to be regarded as if they cause human aspiration toxicity hazard A substance is classified in Category 1: (a) based on reliable and good quality human evidence or (b) if it is a hydrocarbon and has a kinematic viscosity of 20,5 mm^2/s or less, measured at 40 °C.

Note:

Substances in Category 1 include but are not limited to certain hydrocarbons, turpentine and pine oil.

Table 3.10.2

Aspiration toxicity label elements

Classification	Category 1
GHS Pictogram	
Signal Word	Danger
Hazard Statement	H304: May be fatal if swallowed and enters airways

Volatile flavourings / cardamom oil

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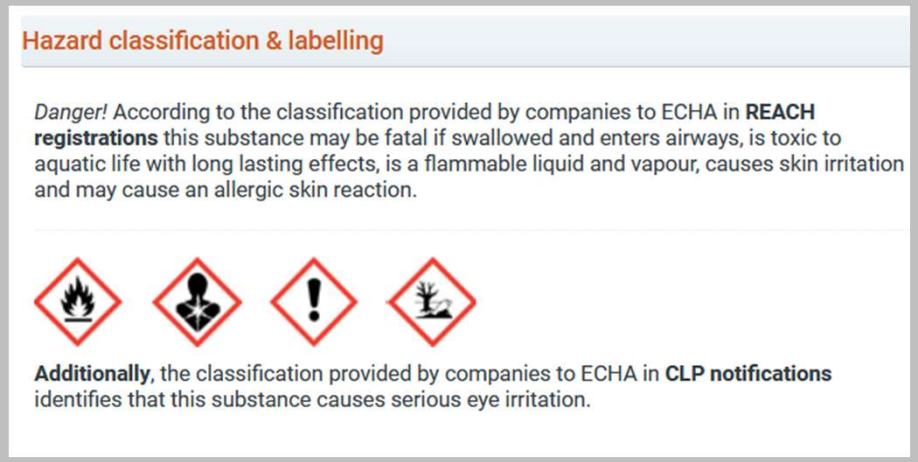
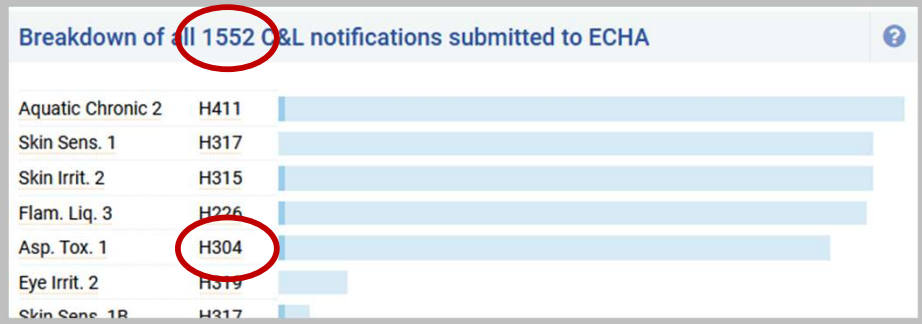
IFRA-IOFI Labelling Manual

Cardamom oil is classified according to its composition (REACH, bibliography, *in vivo* studies, etc.) as: H226 Flammable liquid and vapour, H304 May be fatal if swallowed and enters airways, H315 Causes skin irritation, H317 May cause an allergic skin reaction, H319 Causes serious eye irritation, H411 Toxic to aquatic life with long lasting effects.

IFRA (International Fragrance Association) and **IOFI** (International Organization of the Flavour Industry)

ECHA - CLP





Enzymes & microorganisms

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- SCAN 1999: " … *it will be assumed that all enzymes and micro-organisms are respiratory sensitisers (R42) unless convincing evidence to the contrary is provided … attention will be paid to the physical nature of the formulation, which should minimise this risk to workers handling the product.*

  The worker safety of the formulated product should be addressed. Contamination of skin and/or inhalation are the most likely routes of exposure. It may be necessary to separately consider exposure during different activities, such as production of the additive, incorporating the additive into feed and handling the mixed feed."
- Horizontal AMFEP Guidelines for enzymes (2013)
- Recent case of a request from EFSA for an enzyme: at ECHA for CLP 17 notifications from 664 notifiers (!), in addition three REACH dossiers!
- Does additional testing (in vivo/in vitro) – considering the associated uncertainties – allow any change of an existing classification by industry/ECHA?

… and now ?

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- What is a user or worker? (what part of the chain?)
- Legislation requests «risk assessment» not hazard characterization
- The «generic» problem: EFSA evaluated product may/will not reflect the ones in the market place
- Substances used by other sectors - requirements differ but all of them end up at CLP/REACH
- Authorization for the active substance – exposure to commercial preparations
- Products are regulated by chemical and feed additive legislation
- Shall EFSA classify products using different approach than laid down for chemical evaluation
- Exposure in the premix plant: the right model?
- Is the risk for downstream users in the feed different than for other sectors? Do we need different rules for mixtures of substances in feed than for mixtures of substances?