INTERNATIONAL FRAGRANCE ASSOCIATION

Member Associations
Members of IFRA Committees
cc RIFM
Members of the JAG
Client Associations

July 11th, 2014

Information Letter 983
Development of the analytical method for the quantification of new fragrance allergens in raw materials

Dear Colleagues,

Background:
The European Cosmetics Regulation (1223/2009/EC) provides that perfume and aromatic compositions and their raw materials shall be referred to, in the list of ingredients, by the word 'parfum' or 'aroma'. However, since 2005 the presence in the cosmetic product of 26 fragrance allergens must be specifically indicated in the list of ingredients, in addition to the terms 'parfum' or 'aroma', when their concentration exceeds 0.001% in leave-on products and 0.01% in rinse-off products.

In 2012, the Scientific Committee on Consumer Safety (SCCS) issued an updated list of fragrance allergens that the consumer should be made aware of when they are present in the cosmetic product (SCCS/1459/11). The SCCS identified lists of established contact allergens in humans (table 13-1 of the opinion), fragrance substances categorised as established contact allergens in animals (table 13-2), fragrance substances categorised as likely contact allergens (table 13-3), and fragrance substances categorised as possible contact allergens (table 13-4). The SCCS considered thus that "those substances itemised in Table 13-1, Table 13-2 and Table 13-3 represent those fragrance ingredients that the consumer should be made aware of when present in cosmetic products". In addition, the SCCS recommended that "substances known to be transformed (e.g. hydrolysis of esters) to known contact allergens should be treated as equivalent to these known contact allergens.

The regulatory process:
In response to the SCCS Opinion, the EU Commission released a regulatory proposal in June 2013. This regulatory proposal was discussed by the Member States and submitted to public consultation from February to May 2014. The requirements related to consumer information stayed mainly unchallenged: the labeling of the 26 fragrance allergens will be extended to the 82 materials of Table 13-1 plus a few allergens precursors. The previously set thresholds for allergens declaration of 10 ppm for leave-on products and 100 ppm for rinse-off products will remain. The transition period proposed by the Commission for implementation of this new requirement is three years but it resulted from the public consultation that more time was requested by the downstream industry.

IFRA Operations
Avenue des Arts, 6
1210 Brussels, Belgium
Tel: +32-2 214 20 60
Fax: +32-2 214 20 69

www.ifraorg.org

The next steps are the assessment of the replies to the public consultation and possible integration of comments, the preparation of a report and the inter-service consultation. The report will be available in the mid-summer 2014. It has been decided to wait for the new Commissioner before adopting the final proposal. Therefore, the voting by MS in Comitology is expected to take place beginning of 2015. Then a 3 months' scrutiny period for the European Parliament and the European Council is foreseen and the adoption of the act should happen by mid of 2015.

The analytical challenge:

The labeling requirement to be implemented on 87 fragrance allergens[1] (att.01) has important consequences for the fragrance industry as more analytical information on these newly introduced allergens and their content in fragrances will be soon requested. This implies that all raw materials will be analyzed for new fragrance allergens and the results communicated to the downstream industry.

To this end IFRA, in partnership with ERINI, a research laboratory located in Grasse (France) developed an analytical method suitable for the quantification of the new fragrance allergens in raw materials. This project started in November 2013 and ended on July 2nd, 2014 with the official presentation of this new method to the IFRA Analytical Working Group (AWG), the group in charge of supervising the progress of this project.

The new analytical method will be based on a GC-MS quantification involving two chromatographic columns of different polarity in order to minimize the problems of co-elution. As it has been done with the former list of fragrance allergens, the method will focus on the simultaneous quantification of all chemically-defined allergens[2] in raw materials. The analytical instruments will be calibrated with two different stock solutions as chemical interactions between some fragrance allergens may occur in case they are not separated (carbonylated materials vs. non-carbonylated materials).

The IFRA AWG well received this presentation of the method and was impressed by the quality of the work done by ERINI and the accuracy of the first test results. However, several technical aspects need to be improved and will be subject to further refinements. All in all, the main parameters were regarded as adequately set and the method workable for most of the analytes. A preliminary study of the accuracy profile showed that about 80% of the allergens can now be suitably quantified, about 10 to 15 % of them are overestimated (or, very rarely, underestimated) and about 5 to 10 % can hardly be quantified at this stage. Several solutions to solve the remaining issues have already been identified by the IFRA AWG and will be investigated in the coming weeks.

The next steps of the analytical development:

The IFRA AWG is now going to review the 100-page report delivered by ERINI and make comments and suggestions to be included in the final version of the report. This final report is expected to be adopted by the IFRA AWG at its next regular meeting scheduled on September 2nd, 2014. Then, a first check will be conducted in the laboratories of the IFRA AWG members and first conclusions will be drawn in preparation of the pre-validation phase. The results of this first check will determine whether or not IFRA can publish the method on its website before its pre-validation.

[1] This number could still slightly change as the industry made some technical recommendations to the Commission (not affecting the labeling requirement of materials designated by the SCCS but suggesting the grouping or the separation of some entries).
[2] Namely 66 materials as some entries of the regulatory proposal include several isomers.

INTERNATIONAL FRAGRANCE ASSOCIATION

As it is critical for the industry to start the raw materials analysis as soon as possible, the method pre-validation will be conducted in two steps. The first one will end in April 2015 with a method tested (but not validated) to quantify allergens in chemical raw materials (e.g. traces of monoterpenes in qualities of pure geraniol). The second one will end in January 2016 with the pre-validated method, suitable for the quantification of allergens in complex natural matrices. It is noteworthy that this refinement process is iterative by nature and updates of the method could be regularly published on the IFRA website. Modalities of the publication process during the pre-validation phase still need to be discussed by the IFRA AWG but the objective is to make the prevalidated method publicly available on the IFRA website.

The pre-validated method will be handed over to CEN with the request to issue an official norm.

Should you have any questions on this information letter, please, do not hesitate to contact us (mvey@ifraorg.org).

Best regards,
IFRA

Chemically-defined substances		
No.	Name	CAS number
1	ACETYLCEDRENE	32388-55-9
2	AMYL CINNAMAL	122-40-7
3	AMYL CINNAMYL ALCOHOL	101-85-9
4	AMYL SALICYLATE	2050-08-0
5	trans-ANETHOLE	4180-23-8
6	ANISE ALCOHOL	105-13-5
7	BENZALDEHYDE	100-52-7
8	BENZYL ALCOHOL	100-51-6
9	BENZYL BENZOATE	120-51-4
10	BENZYL CINNAMATE	103-41-3
11	BENZYL SALICYLATE	118-58-1
12	BUTYLPHENYL METHYLPROPIONAL	80-54-6
13	CAMPHOR	76-22-2 / 464-49-3
14	beta-CARYOPHYLLENE (ox.)	87-44-5
15	CARVONE	99-49-0 / 6485-40-1 / 2244-16-8
16	CINNAMAL	104-55-2
17	CINNAMYL ALCOHOL	104-54-1
18	CITRAL	5392-40-5
19	CITRONELLOL	106-22-9 / 1117-61-9 / 7540-51-4
20	COUMARIN	91-64-5
21	(DAMASCENONE)ROSE KETONE-4	23696-85-7
22	alpha-DAMASCONE (TMCHB)	43052-87-5 / 23726-94-5
23	cis-beta-DAMASCONE (cis-Rose ketone-2)	23726-92-3
24	delta-DAMASCONE	57378-68-4
25	DIMETHYLBENZYL CARBINYL ACETATE (DMBCA)	151-05-3
26	EUGENOL	97-53-0
27	EUGENYL ACETATE	93-28-7
28	FARNESOL	4602-84-0
29	GERANIAL	141-27-5
30	GERANIOL	106-24-1
31	GERANYL ACETATE	105-87-3
32	HEXADECANOLACTONE	109-29-5
33	HEXAMETHYLINDANOPYRAN	1222-05-5
34	HEXYL CINNAMAL	101-86-0
35	HYDROXYISOHEXYL 3-CYCLOHEXENE CARBOXALDEHYDE (HICC)	31906-04-4 / 51414-25-6
36	HYDROXYCITRONELLAL	107-75-5
37	ISOEUGENOL	97-54-1
38	ISOEUGENYL ACETATE	93-29-8
39	alpha-ISOMETHYL IONONE	127-51-5
40	(DL)-LIMONENE	138-86-3
41	LINALOOL	78-70-6
42	LINALYL ACETATE	115-95-7
43	MENTHOL	1490-04-6 / 89-78-1 / 2216-51-5
44	METHYL 2-OCTYNOATE	111-12-6
45	METHYL SALICYLATE	119-36-8
46	3-METHYL-5-(2,2,3-TRIMETHYL-3-CYCLOPENTENYL)PENT-4-EN-2-OL	67801-20-1
47	alpha-PINENE and beta-PINENE	80-56-8 / 127-91-3
48	PROPYLIDENE PHTHALIDE	17369-59-4
49	SALICYLALDEHYDE	90-02-8
50	alpha-SANTALOL and beta-SANTALOL	115-71-9 / 77-42-9
51	SCLAREOL	515-03-7
52	TERPINEOL (mixture of isomers)	8000-41-7
53	alpha-TERPINENE	99-86-5
54	alpha-TERPINEOL	10482-56-1 / 98-55-5
55	Terpinolene	586-62-9
56	TETRAMETHYL ACETYLOCTAHYDRONAPHTHALENES	54464-57-2 / 54464-59-4 / 68155-66-8 / 68155-67-9
57	TRIMETHYL-BENZENEPROPANOL (Majantol)	103694-68-4
58	VANILLIN	121-33-5

Natural extracts		
No.	Substance	CAS number
1	CANANGA ODORATA and Ylang-ylang oil	83863-30-3
		8006-81-3
2	CEDRUS ATLANTICA BARK OIL	92201-55-3
		8000-27-9
3	CINNAMOMUM CASSIA LEAF OIL CINNAMOMUM ZEYLANICUM BARK OIL	8007-80-5
		84649-98-9
4	CITRUS AURANTIUM AMARA FLOWER / PEEL OIL	8016-38-4

Legend
List of the 26 fragrance allergens
New chemically-defined allergens
New natural allergens

		72968-50-4
5	CITRUS BERGAMIA PEEL OIL EXPRESSED	89957-91-5
6	CITRUS LIMONUM PEEL OIL EXPRESSED	84929-31-7
7	CITRUS SINENSIS (syn.: AURANTIUM DULCIS) PEEL OIL EXPRESSED	97766-30-8
		8028-48-6
8	CYMBOPOGON CITRATUS / SCHOENANTHUS OILS	89998-14-1
		8007-02-1
		89998-16-3
9	EUCALYPTUS SPP. LEAF OIL	92502-70-0
		8000-48-4
10	EUGENIA CARYOPHYLLUS LEAF / FLOWER OIL	8000-34-8
11	EVERNIA FURFURACEA EXTRACT	90028-67-4
12	EVERNIA PRUNASTRI EXTRACT	90028-68-5
13	JASMINUM GRANDIFLORUM / OFFICINALE	84776-64-7
		90045-94-6
		8022-96-6
14	JUNIPERUS VIRGINIANA	8000-27-9
		85085-41-2
15	LAURUS NOBILIS	8002-41-3
		8007-48-5
		84603-73-6
16	LAVANDULA HYBRIDA	91722-69-9
17	LAVANDULA OFFICINALIS	84776-65-8
18	MENTHA PIPERITA	8006-90-4
		84082-70-2
19	MENTHA SPICATA	84696-51-5
20	MYROXYLON PEREIRAE	8007-00-9
21	NARCISSUS SPP.	diverse
22	PELARGONIUM GRAVEOLENS	90082-51-2
		8000-46-2
23	PINUS MUGO/PUMILA	90082-72-7
		97676-05-6
24	POGOSTEMON CABLIN	8014-09-3
		84238-39-1
25	ROSE FLOWER OIL (ROSA SPP.)	Diverse
26	SANTALUM ALBUM OIL	84787-70-2
		8006-87-9
27	TURPENTINE (oil)	8006-64-2
		9005-90-7
		8052-14-0
28	VERBENA ABSOLUTE	8024-12-2