THE INTERNATIONAL FRAGRANCE ASSOCIATION

To: Member Associations (FOR DISTRIBUTION TO ALL MEMBERS)
Members of the IFRA Committees and Task Forces

Cc: RIFM
Supplier and Downstream User Associations
Members of the JAG
Interested Stakeholders

December 12th, 2019

Notification of the 49th Amendment to the IFRA Code of Practice

Dear Colleagues,

IFRA is pleased to announce the Notification of the IFRA 49th Amendment.

Due to information reaching you just before the holiday season in many parts of the world, please take note that **the actual Notification date is January 10, 2020**.

The preparation of the 49th Amendment has been extremely challenging due to the new methodologies and the new procedure to set Standards being developed and implemented for the first time. This has also been reflected by the amount of comments that IFRA received during the Consultation. IFRA would like to thank all stakeholders that have been involved in the preparation of the 49th Amendment, notably companies and stakeholders that have provided feedback during the Consultation.

The IFRA 49th Amendment includes:

- Guidance for the use of IFRA Standards
- The IFRA Standards under the scope of the IFRA 49th Amendment
- Annex I of the IFRA Standards
- Annex II of the IFRA Standards

These documents will be published on the IFRA website (www.ifrafragrance.org) as of January 10, 2020.

As new methodologies (i.e. QRA2 and aggregate exposure model for systemic toxicity) are being introduced as part of the 49th Amendment, leading to new IFRA Standard Categories amongst other changes, IFRA has taken the exceptional decision to grant a prolonged implementation timeline for all Standards within scope of the 49th Amendment.

The implementation timelines for the 49th Amendment are therefore as follows:

IFRA Standards	Date for Standards entering into force for new creations	Date for Standards entering into force for existing creations
Standards prohibiting or restricting the use of ingredients	6 months after the completion of the information exchange across the supply chain period (which is 7 months after the Notification date). In total, this is **13 months** after the date of the Notification (i.e. **February 10, 2021**).	18 months after the completion of the information exchange across the supply chain period (which is 7 months after the Notification date). In total, this is **25 months** after the date of the Notification (i.e. **February 10, 2022**).
Standards introducing a specification on the use of a fragrance ingredient	Exceptionally for the 49th Amendment there is no difference of timeline for Specification Standards. Therefore, the timeline for Specification Standards is also **13 months** after the date of the letter of Notification (i.e. **February 10, 2021**).	Exceptionally for the 49th Amendment there is no difference of timeline for Specification Standards. Therefore, the timeline for Specification Standards is also **25 months** after the date of the letter of Notification (i.e. **February 10, 2022**).

There is a number of prohibition and specification Standards where changes are only related to the format, the presentation of the Standard or the clarification of wording. The implementation timeline is therefore not applicable.

Please take note that the impact of a Standard being applicable to a fragrance mixture is not only determined by a change in the upper concentration level but may also result from product types moving categories.

In this context it is important to point out that there are Standards where the upper concentration levels have not changed, but there is a potential impact on fragrance mixtures only resulting from product types changing categories (new IFRA product categorization). This is for example the case for Baby wipes related to phototoxicity driven Standards, which moved from a formerly not limited category into one that now has an upper concentration level. In these cases, the Standards do receive implementation timelines for the 49th Amendment, even so the changes do only affect a limited number of fragrance mixtures.

Respective details on implementation timelines are indicated where appropriate in the respective sections of this letter.

The timelines and dates refer to the supply of fragrance mixtures (the so called ‘fragrance compound’ or ‘fragrance oil’) only, not to the finished products in the marketplace.

An **existing creation** is a compound currently sold or already the subject of evaluation for performance in a defined consumer product. The period of time permitted for achieving compliance with a new or revised Standard applies only to that compound in that defined consumer product.

A **new creation** is defined as any fragrance mixture for which the brief has been issued after the completion of the information exchange across the supply chain period (i.e. update of IT systems, bilateral information exchange between fragrance houses and information exchange between fragrance houses and customers as a total of 7 months).

In the sections following in this letter, the detailed scope and main features of the 49th Amendment are explained.

The Member Associations are requested to distribute this information without delay to all their individual members.

Thank you very much for your assistance.

Dr. Matthias Vey

IFRA Scientific Director

THE INTERNATIONAL FRAGRANCE ASSOCIATION

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1. Changes introduced in the 49th Amendment

As for previous Amendments, the IFRA Standards are based on the recommendations made by the Expert Panel for Fragrance Safety[1] to introduce risk management measures.

For the 49th Amendment, a new methodology is introduced, which mainly consists of:

- The evaluation of the endpoints described in the revised RIFM Criteria document[2], for each Standard.

  For the first time, the 49th Amendment introduces Standards for which all the endpoints described in the RIFM Criteria II document have been assessed. The outcome of this assessment being the RIFM Safety Assessments, available at the RIFM Fragrance Material Safety Assessment Center (http://fragrancematerialsafetyresource.elsevier.com/) as and when they are completed. If the RIFM Safety Assessment has not yet been published in the RIFM Fragrance Material Safety Assessment Center at the time of the Notification, the draft Safety Assessment will be available via the RIFM Fragrance and Flavor Database (https://www.rifm.org/rifm-science-database.php).

  The upper concentration levels reported in the Standards are the lower of the two values of upper concentration levels derived for the dermal sensitization and the risk evaluation for the systemic toxicity endpoints. In the cases where the threshold of toxicological concern (TTC) is used in the endpoint assessment and if the aggregate exposure falls below it, it will not be treated as a no effect level, meaning that no risk management measures will be recommended based on TTC values alone (as long as the current use is below the TTC), i.e., IFRA will in principle not set Standards based on TTC (as described in more detail in the guidance document that is distributed as part of the Notification). In those cases, the upper concentration levels reported in the Standard are derived solely from the dermal sensitization endpoint evaluation.

  If the exposure is above the TTC, a tiered decision-making exercise will be used to refine the safety assessment. On the first tier, additional data will be generated either by established in silico models or in vitro testing. If still inadequate, a choice will need to be made by either conducting additional in vivo studies to clear the safety assessment or implementing risk management to curtail exposures. Such a risk management measure could be to set an IFRA Standard based on TTC values. This choice will need to be made after careful consideration of all relevant ethical and regulatory aspects.

- The revised methodology of Quantitative Risk Assessment for fragrance ingredients (hereafter QRA2).

  As already widely communicated, notably by the several webinars organized by IFRA and RIFM, the 49th Amendment introduces the revised methodology of Quantitative Risk Assessment for fragrance ingredients (QRA2).

  QRA2 is the outcome of the work undertaken by industry, academia and other stakeholders under the International Dialogue for the Evaluation of Allergens (IDEA) multi-stakeholder forum to improve the QRA methodology used until now. This included the review of the Safety Assessment Factors (SAFs) and the use of the Creme-RIFM aggregate exposure model. For more details, please consult the QRA2 report (http://www.ideaproject.info/uploads/Modules/Documents/qra2-dossier-final--september-2016.pdf).

As a result of these changes, the IFRA categories for dermal sensitization and systemic toxicity endpoints have been revised and harmonized:

- The revision of the Safety Assessment Factors (SAF's) and the inclusion of aggregate exposure within QRA2 has led to new QRA2 categories, partly different from QRA1. Thus, all the new and existing

[1] http://fragrancesafetypanel.org/
[2] http://fragrancematerialsafetyresource.elsevier.com/sites/default/files/Criteria_Document_Final.pdf

IFRA Standards for the Skin Sensitization endpoint that are part of the 49th Amendment are based on QRA2 and include 12 IFRA Categories.

- The categories for Standards based on systemic toxicity Standards have been reviewed according to the aggregate exposure. This leads to a subcategorization within the Categories 5 and 10 leading up to a total of 16 IFRA Categories for systemic toxicity. Moreover, the maximum use levels derived from QRA2 have been compared with those of the systemic toxicity endpoints. Thus, the maximum use level reflected in the Standards is the lower of the two types of evaluation.

For additional details on the new IFRA categories, please refer to the Guidance for the use of IFRA Standards (Att. 01).

This new methodology described above has been extensively documented and is part of the Consultation to the IFRA 49th Amendment. A summary of this procedure is included in Chapter 2 of the Guidance for the use of IFRA Standards (Att. 01). The full description of the IFRA Standards Setting Procedure is available upon request (cgonzalez@ifraorg.org).

2. Guidance for the use of IFRA Standards

It is important that fragrance suppliers and users globally are fully informed about the scope of IFRA Standards. The aim of the Guidance for the use of IFRA Standards is to provide clarification on the meaning of the content of the IFRA Standards and the methodology used to derive their upper concentration levels provided in the Standards.

For the first time, this Guidance for the use of IFRA Standards combines the following documents that were previously distributed separately:

- Introduction to the IFRA Standards.
- IFRA-RIFM QRA information booklet.
- Standard Operating Procedure for the implementation timelines of Amendments to the IFRA Standards.

In addition, this Guidance for the use of IFRA Standards contains:

- A summary of the procedure for setting IFRA Standards.
- How the risk assessment of fragrance ingredients is performed and its consequences for setting IFRA Standards.
- Frequently Asked Questions about the application of IFRA Standards.

The Guidance for the use of IFRA Standards is shared as Att. 01 to this Notification Letter.

The following sections briefly explain the major changes introduced with the 49th Amendment regarding IFRA product categorization.

2.1. New IFRA product categorization

For practical reasons, IFRA Standards are set per product category, each covering a range of product types which can be grouped together based on risk assessment considerations. Groupings have been derived for the skin sensitization endpoint resulting from the application of QRA2 and have been compared to groupings fitting with phototoxicity and systemic toxicity considerations.

With the new approach of combining the QRA2, phototoxicity (see item 2.2 below) and systemic toxicity assessment in one exercise, the number of categories in the IFRA Standard has changed from 11 categories for dermal sensitization Standards and 4 for systemic toxicity-based Standards to 12.
Product categorization is achieved by grouping consumer product types based on functional type, and major factors in habits and practices of consumers such as area of use (head, face, axillae, etc.) and whether they are rinse-off or leave-on applications. This represents a change from the categorization used in previous Amendments but was considered necessary to fully implement aggregate consumer exposure into the process.

These categories are summarized in Table 9 of the Guidance for the use of IFRA Standards, as follows:

Category	Product type
1	Products applied to the lips
2	Products applied to the axillae
3	Products applied to the face/body using fingertips
4	Products related to fine fragrance
5	Products applied to the face and body using the hands (palms), primarily leave-on:
5A	Body lotion products applied to the body using the hands (palms), primarily leave-on
5B	Face moisturizer products applied to the face using the hands (palms), primarily leave-on
5C	Hand cream products applied to the hands using the hands (palms), primarily leave-on
5D	Baby Creams, baby Oils and baby talc
6	Products with oral and lip exposure
7	Products applied to the hair with some hand contact
7A	Rinse-off products applied to the hair with some hand contact
7B	Leave-on products applied to the hair with some hand contact
8	Products with significant anogenital exposure
9	Products with body and hand exposure, primarily rinse off
10	Household care products with mostly hand contact
10A	Household care excluding aerosol products (excluding aerosol/spray products)
10B	Household aerosol/spray products
11	Products with intended skin contact but minimal transfer of fragrance to skin from inert substrate
11A	Products with intended skin contact but minimal transfer of fragrance to skin from inert substrate without UV exposure
11B	Products with intended skin contact but minimal transfer of fragrance to skin from inert substrate with potential UV exposure
12	Products not intended for direct skin contact, minimal or insignificant transfer to skin

2.2. Revised approach for phototoxicity considerations

For the first time, IFRA is introducing restriction levels for rinse-off products in a Standard based on concerns related to phototoxic effects, namely the Standard for Tagetes oil and absolute. To account for this, the IFRA policy on phototoxicity considerations has been revised and applied to all related Standards.

The scope of application of restrictions based on phototoxic effects now includes any product that is applied to body areas reasonably expected to be exposed to sunlight. Only for non-skin contact consumer

products (i.e. Category 12), phototoxicity considerations do not apply and therefore IFRA Standards do not set a restriction on them.

Compared to the previous Amendments, the IFRA 49th Amendment introduces the following changes:

- Introducing a restriction level for rinse-off products in the Standard of Tagetes oil and absolute.

- Subcategorization of Category 7 in A and B to take into account the presence of rinse-off and leave-on products included in this category.

Category 7A	Rinse-off products applied to the hair with some hand contact
Category 7B	Leave-on products applied to the hair with some hand contact

- Consideration of potential phototoxicity for all product types included in Category 8 (applying a precautionary approach).

- Subcategorization of Category 11 in A and B to take into account the potential UV exposure of products included in this category.

Category 11A	Products with intended skin contact but minimal transfer of fragrance to skin from inert substrate without UV exposure
Category 11B	Products with intended skin contact but minimal transfer of fragrance to skin from inert substrate with potential UV exposure

A detailed explanation and rationale have been included in the Guidance for the use of IFRA Standards. The subcategorization of Categories 7 and 11 has been implemented in the IFRA Standards that will be part of the 49th Amendment.

2.3. Clarification on the IFRA policy regarding products with potential ingestion and products with intended ingestion

Similar to previous Amendments, consumer products with a potential risk of ingestion (e.g. oral care or lipsticks), are in scope of the IFRA Standards, as they are not designed and therefore not intended to be ingested. Even so, accidental ingestion of minor amounts can occur.

With the 49th Amendment, this policy remains unchanged. However, IFRA is introducing a clear distinction between consumer products containing fragrance ingredients with a potential risk of ingestion and those intended for ingestion. The safety of (fragrance) ingredients or mixtures present in products intended for ingestion (like 'ingestible perfumes or deodorants, fragrances for odorizing potable water, cleaning products intended for food contact') is outside the scope of RIFM's and IFRA's current risk assessment and management process. It is the responsibility of the companies to assess the safe use of these products based on the specific use conditions and the legal requirements applicable in the respective country/region. Therefore, this safety assessment is key for decision and is prevailing above any type of other considerations like material status (e.g. approved flavor material food grade status).

In conclusion, IFRA cannot incorporate products intended to be ingested in the IFRA products categorization scheme.

3. IFRA Standards

IFRA is using a new database management tool to prepare the Standards. This database management tool allows IFRA:

- To automatically produce an IFRA Standard.
- To manage a higher number of Standards.
- To reduce human errors in the preparation of the documentation related to the 49th Amendment (e.g. index of Standards, overview of IFRA Standards, etc.) and establish the link between IFRA Standards and their Annex I (natural contributions) and Annex II (Schiff bases).

As a consequence, the format of all the IFRA Standards has been reviewed. This includes content clarification and harmonization across Standards. Please note that these changes, which do not affect the scope of the Standard (e.g. addition of synonyms, references, etc.), are not necessarily all included in the detailed description of changes introduced with the 49th Amendment described in this Notification Letter. Overall, changes have been included in the ingredient structure (where applicable), CAS number(s), RIFM summaries and References sections as described below.

As feedback from the Consultation, IFRA has been made aware that for some Standards, the figures of the chemical structures included therein were only referring to a single isomer and did not cover other isomers covered by the Standard. Most of the IFRA Standards include a figure showing the chemical structure of a representative form of the ingredient. It does not aim to cover all the structures related to this material (e.g. stereoisomers). In cases where a Standard comprises multiple (structural) isomers or other related structures, a respective wording to this regard has been added to the Standard.

IFRA aims to include in the Standard all the CAS numbers known to be related to the ingredient for which the Standard is set. However, it may be possible that there are other CAS numbers related to the material under the scope of the Standard that are not mentioned therein. As they describe the same ingredient (e.g. different stereoisomers), they are also covered by the scope of the Standard. In order to provide clarification on this matter, the following sentence has been added to IFRA Standards:

"The scope of this Standard includes, but is not limited to, the CAS number(s) indicated above; any other CAS number(s) used to identify this fragrance ingredient should be considered in scope as well."

As part of the reformatting and harmonization of IFRA Standards carried out for the 49th Amendment, the so-called section "RIFM Summaries" existing in Standards of previous Amendments has been deleted. This section aimed to provide relevant information on the data available and the points of departure selected by the Expert Panel for the safety assessment. The reason for the deletion of this section is that as part of the RIFM Safety Assessment Program, the aim is to perform a safety assessment for all ingredients used by the fragrance industry. These safety assessments, once finalized, will be published in peer-reviewed literature and made publicly available in the Fragrance Materials Safety Resource website (http://fragrancematerialsafetyresource.elsevier.com/) and can therefore serve as a comprehensive reference for the IFRA Standard. For additional information on the RIFM SA program, please visit www.rifm.org or contact info@rifm.org.

At the time of the Notification of the IFRA 49th Amendment, it might be possible that for some Standards, the RIFM Safety Assessment is not yet publicly available in the Fragrance Materials Safety Resource website. This is because the safety assessment has been approved by the Expert Panel but not yet published in peer-reviewed literature or because new data is being generated that should be reflected in the safety assessment. However, RIFM can provide any interested stakeholder with a copy of the (draft)

safety assessment that is currently the basis of the IFRA Standard. In this case, please contact RIFM (info@rifm.org).

3.1. List of 25 new Standards as part of the 49th Amendment

With the 49th Amendment, IFRA introduces 25 new Standards.

3.1.1. 4 new IFRA Standards for dermal sensitization concern solely based on QRA2

CAS number	Name	Status
11028-42-5 469-61-4 546-28-1	Cedrene	NEW RESTRICTED STANDARDS FOR DERMAL SENSITIZATION (QRA2)
475-20-7 16846-09-6 19067-29-9	Longifolene	
17488-65-2	4-Phenyl-3-buten-2-ol	
65114-03-6	α,2,2,3-Tetramethylcyclopent-3-ene-1-butyraldehyde	

The above IFRA Standards are set due to dermal sensitization concern. The systemic toxicity has been evaluated through TTC, and according to the IFRA Standard Setting process, has not been taken into account to derive the upper concentration levels of the above Standards.

3.1.2. 2 new IFRA Standards for which only the risk management measures for dermal sensitization are implemented in the 49th Amendment

CAS number	Name	Status
24048-14-4 185019-19-6 58001-88-0 58001-87-9 1373932-23-0 1018832-07-9	2,6,10-Trimethylundeca-5,9-dienol	NEW RESTRICTED STANDARDS FOR WHICH ONLY DERMAL SENSITIZATION WILL BE IMPLEMENTED FOR THE 49th AMENDMENT
65113-99-7	5-(2,2,3-Trimethyl-3-cyclopentenyl)-3-methylpentan-2-ol	

In the case of **2,6,10-Trimethylundeca-5,9-dienol (CAS numbers 24048-14-4, 185019-19-6, 58001-88-0, 58001-87-9, 1373932-23-0 and 1018832-07-9)** and **5-(2,2,3-Trimethyl-3-cyclopentenyl)-3-methylpentan-2-ol (CAS number 65113-99-7)**, new data on systemic toxicity will become available in the near future. This data is going to provide a more defined basis for systemic toxicity assessment than currently possible. Therefore, the upper concentration levels derived from the systemic toxicity assessment will be implemented for the 50th Amendment. For the 49th Amendment, the Standard will only be based on skin sensitization (QRA2).
It should nevertheless be noted that, already with consideration of the systemic toxicity information available today, there is an adequate margin of safety in the safety assessment.

3.1.3. 16 new IFRA Standards driven by dermal sensitization and systemic toxicity concern

CAS number	Name	Status
515-69-5 23089-26-1 23178-88-3 78148-59-1 76738-75-5 72691-24-8	α-Bisabolol	NEW RESTRICTED STANDARDS (BASED ON DERMAL SENSITIZATION AND SYSTEMIC TOXICITY)
106-23-0 5949-05-3	Citronellal	
68480-15-9	Cyclohexanemethanol, 2,4-dimethyl-	
71077-31-1	4,8-Dimethyl-4,9-decadienal	
762-26-5	5,9-Dimethyl-4,8-decadienal	
41448-29-7	3,7-Dimethyl-2,6-nonadien-1-al	
1754-00-3 55722-59-3 72203-98-6 72203-97-5	3,7-Dimethyl-3,6-octadienal	
107898-54-4	3,3-Dimethyl-5-(2,2,3-trimethyl-3-cyclopenten-1-yl)-4-penten-2-ol	
19317-11-4	Farnesal	
3658-77-3	4-Hydroxy-2,5-dimethyl-3(2H)-furanone	
536-60-7	p-Isopropylbenzyl alcohol	
5502-75-0 13828-37-0 13674-19-6	cis, trans-4-(Isopropyl)cyclohexanemethanol	
67634-03-1	4-(Isopropyl)-.β.-methylcyclohexanethanol	
2785-87-7	2-Methoxy-4-propylphenol	
94-86-0 63477-41-8	Propenylguaethol	
589-18-4	p-Tolyl alcohol	

The above IFRA Standards are driven by the outcome of the evaluation of skin sensitization and systemic toxicity. The maximum concentration levels reported in the above Standards are the lower concentration levels of those derived from the dermal sensitization and the systemic toxicity assessment (see also Section 1 of this Letter).

3.1.4. 1 new IFRA Standard due to phototoxicity concern

CAS number	Name	Status
41270-80-8	Methyl N-formylanthranilate	NEW RESTRICTION STANDARD BASED ON PHOTOTOXICITY

The restriction Standard on **Methyl N-formylanthranilate (CAS number: 41270-80-8)** is based on its phototoxicity potential. Methyl N-formylanthranilate is reported to occur in nature.

3.1.5. 1 new IFRA Standard due to skin depigmentation concern

CAS number	Name	Status
5471-51-2	4-(4-Hydroxyphenyl)butan-2-one	NEW RESTRICTION STANDARD BASED ON SKIN DEPIGMENTATION CONSIDERATIONS

The restriction Standard on **4-(4-Hydroxyphenyl)butan-2-one (CAS number: 5471-51-2)** is based on skin depigmentation effects. 4-(4-Hydroxyphenyl)butan-2-one is reported to occur in nature at non-significant levels and therefore is not reported in Annex I.

3.1.6. 1 new IFRA Standard due to systemic toxicity (neurotoxicity) considerations

CAS number	Name	Status
546-80-5 471-15-8 76231-76-0 1125-12-8	Thujone	NEW RESTRICTION STANDARD BASED ON NEUROTOXICITY CONSIDERATIONS

The restriction Standard on **Thujone (CAS numbers: 546-80-5; 471-15-8; 76231-76-0 and 1125-12-8)** is based on its neurotoxicity potential. Even though Thujone is hardly used as such, it is present in a number of essential oils that have relevant use in perfumery. The Thujone-containing essential oils are reported in Annex I of the IFRA Standards and are as well listed in the Thujone Standard.

3.2. List of revised Restriction Standards for the 49th Amendment

3.2.1. 33 revised IFRA Restriction Standards for dermal sensitization concern solely based on QRA2

CAS number	Name	Status
4364-06-1	Cinnamic aldehyde dimethyl acetal	REVISED RESTRICTED STANDARDS FOR DERMAL SENSITIZATION (QRA2)
1885-38-7 4360-47-8	Cinnamyl nitrile	
122-03-2	Cuminaldehyde	
68737-61-1 68039-49-6 68039-48-5 27939-60-2 67801-65-4 36635-35-5 68084-52-6 35145-02-9	Dimethylcyclohex-3-ene-1-carbaldehyde (mixed isomers)	
39189-74-7	2-Heptylidene cyclopentan-1-one	
17373-89-6	α-Hexylidene cyclopentanone	
107-75-5	Hydroxycitronellal	

CAS number	Name	Status
1335-66-6 1423-46-7 67634-07-5	Isocyclocitral	REVISED RESTRICTED STANDARDS FOR DERMAL SENSITIZATION (QRA2)
68527-77-5	Isocyclogeraniol	
8022-96-6 8024-43-9 90045-94-6 84776-64-7	Jasmine absolute (grandiflorum)	
91770-14-8 **1034798-23-6 (New)**	Jasmine absolute (sambac)	
8014-71-9 84082-61-1	Melissa oil (genuine Melissa officinalis L.)	
68683-20-5	Menthadiene-7-methyl formate	
1504-74-1	o-Methoxycinnamaldehyde	
93-51-6	2-Methoxy-4-methylphenol	
101-39-3	α-Methyl cinnamic aldehyde	
1604-28-0	6-Methyl-3,5-heptadien-2-one	
111-12-6	Methyl heptine carbonate	
111-80-8	Methyl octine carbonate	
68922-13-4	3-Methyl-2-(pentyloxy) cyclopent-2-en-1-one	
13257-44-8	2-Nonyn-1-al dimethyl acetal	
2442-10-6	1-Octen-3-yl acetate	
8021-36-1 9000-78-6 93384-32-8	Opoponax	
13144-88-2	1-(2,4,4,5,5-Pentamethyl-1-cyclopenten-1-yl) ethan-1-one	
2111-75-3	Perilla aldehyde	
17369-59-4	3-Propylidenephthalide	
23696-85-7 23726-93-4 43052-87-5 24720-09-0 23726-94-5 23726-92-3 23726-91-2 57378-68-4 71048-82-3 39872-57-6 70266-48-7 33673-71-1 35087-49-1 35044-68-9 **59739-63-8 (New)** **87064-19-5 (New)**	Rose ketones	

CAS number	Name	Status
8046-19-3 8024-01-9 94891-27-7 94891-28-8 **101227-15-0 (New)**	Styrax	REVISED RESTRICTED STANDARDS FOR DERMAL SENSITIZATION (QRA2)
84650-60-2	Tea leaf absolute	
529-20-4 620-23-5 104-87-0 1334-78-7	o,m,p-Tolualdehydes and their mixtures	
116-26-7	2,6,6-Trimethylcyclohex-1,3-dienyl methanol	
8024-12-2 85116-63-8	Verbena oil and absolute (Lippia citriodora Kunth.)	
8006-81-3 68606-83-7 83863-30-3	Ylang ylang extracts	

The above IFRA Standards were set due to dermal sensitization concern. The systemic toxicity endpoints have also been evaluated and cleared by the TTC approach, but the TTC has not been taken into account to set the maximum concentration levels of the above listed Standards. In consequence, the maximum concentration levels are only the result of applying QRA2.

In addition, the following changes have been included:

- **Dimethylcyclohexen-3-ene-1-carbaldehyde (CAS numbers 68737-61-1; 68039-49-6; 68039-48-5; 27939-60-2; 67801-65-4; 36635-35-5; 68084-52-6; 35145-02-9):** the wording on the presence of one or several Dimethylcyclohexen-3-ene-1-carbaldehyde isomers in a mixture and the applicability of the maximum concentration levels has been updated for clarification purposes.
- **Jasmine absolute (sambac) (CAS number 91770-14-8, 1034798-23-6)**: the CAS number 1034798-23-6 has been added to the Standard.
- **Rose ketones (CAS numbers 23696-85-7; 23726-93-4; 59739-63-8; 43052-87-5; 24720-09-0; 23726-94-5; 23726-92-3; 23726-91-2; 35044-68-9; 57378-68-4; 71048-82-3; 35087-49-1; 39872-57-6; 70266-48-7; 33673-71-1; 87064-19-5)**: the wording on the presence of one or several rose ketones in a mixture and the applicability of the maximum concentration levels has been updated for clarification purposes. The CAS numbers 59739-63-8 ((Z)-β-Damascenone) and 87064-19-5 (cis-Isodamascone) have been added to the Standard.
- The CAS number 101227-15-0 for *Styrax oil, pyrogenated, distilled* has been added to the Standard **Styrax (CAS numbers 8046-19-3, 8024-01-9, 94891-27-7, 94981-28-8, 101227-15-0)**.
- The Standards Verbena oil and Verbena absolute (Lippia citriodora Kunth.), published under the 40th and 45th Amendment respectively, have been merged for harmonization reasons into one single Standard with a Restriction/Prohibition recommendation: **Verbena oil and absolute (Lippia citriodora Kunth.) (CAS numbers: 8024-12-2 and 85116-63-8)**. The individual Standard for Verbena oil as published before has therefore been deleted for the 49th Amendment and its content (prohibition of the use of Verbena oil) continues to apply under the new combined Standard Verbena oil and absolute (Lippia citriodora Kunth.).

3.2.2. 6 revised IFRA Restriction Standards for which only the risk management measures for dermal sensitization are implemented in the 49th Amendment

CAS number	Name	Status
118-58-1	Benzyl salicylate	REVISED RESTRICTED STANDARDS FOR WHICH ONLY DERMAL SENSITIZATION WILL BE IMPLEMENTED FOR THE 49th AMENDMENT
106-22-9 1117-61-9 26489-01-0 6812-78-8 141-25-3 7540-51-4	Citronellol	
4602-84-0	Farnesol	
106-24-1	Geraniol	
101-86-0	α-Hexyl cinnamic aldehyde	
1335-46-2 127-42-4 127-43-5 127-51-5 7779-30-8 79-89-0 **1335-94-0 (New)**	Methyl ionone, mixed isomers	

In the case of all the above-mentioned materials, new data on systemic toxicity will become available in the near future. This data is going to provide a more defined basis for systemic toxicity assessment than currently possible. Therefore, the upper concentration levels derived from the systemic toxicity assessment will be implemented for the 50th Amendment. For the 49th Amendment, the Standard will only be based on skin sensitization (QRA2). It should nevertheless be noted that, already with consideration of the systemic toxicity information, there is an adequate margin of safety in the safety assessment.

Additional changes have been introduced in the Standards of Citronellol and Methyl ionones, mixed isomers as explained below:

- For the Standard on **Citronellol (CAS numbers 106-22-9, 1117-61-9, 26489-01-0, 6812-78-8, 141-25-3 and 7540-51-4)**, the CAS number 68916-43-8 included in previous versions of the Standard has been deleted. This CAS number refers to Geranium oil, saponified, which is a complex mixture not only containing Citronellol.

- The CAS number 1335-94-0 has been added to the Standard **Methyl ionone, mixed isomers (CAS numbers: 1335-46-2; 127-42-4; 127-43-5; 127-51-5; 7779-30-8 and 79-89-0)**.

3.2.3. One revised Standard for which for pragmatic reasons only lower upper concentration levels are implemented: 3 and 4-(4-Hydroxy-4-methylpentyl)-3-cyclohexene-1-carboxaldehyde

CAS number	Name	Status
31906-04-4 51414-25-6	3 and 4-(4-Hydroxy-4-methylpentyl)-3-cyclohexene-1-carboxaldehyde (HMPCC)	REVISED RESTRICTION STANDARDS (ONLY LOWER UPPER CONCENTRATION LEVELS IMPLEMENTED)

Given the specific situation for **3 and 4-(4-Hydroxy-4-methylpentyl)-3-cyclohexene-1-carboxaldehyde (CAS numbers 31906-04-4 and 51414-25-6)** with regard to clinical reactions, this ingredient has been considered exceptional and the Standard is therefore not based only on induction considerations. Consequently, for pragmatic reasons, only upper concentration levels derived from dermal sensitization and/or systemic toxicity endpoints that are lower compared to the levels established by the Standard at its last publication (47th Amendment) have been introduced to the 49th Amendment.

3.2.4. 2 revised Standards based on dermal sensitization for which only lower QRA2 derived upper concentration levels are implemented

CAS number	Name	Status
90028-68-5 68917-10-2 9000-50-4	Oakmoss extracts	REVISED RESTRICTION STANDARDS (ONLY LOWER UPPER CONCENTRATION LEVELS IMPLEMENTED)
90028-67-4 68648-41-9 68917-40-8	Treemoss extracts	

The Standards of **Oakmoss extracts (CAS numbers: 90028-68-5; 68917-10-2 and 9000-50-4)** and **Treemoss extracts (CAS numbers: 90028-67-4; 68648-41-9 and 68917-40-8)** have Specification elements (e.g. for the presence of Atranol and Chloratranol) and in addition if used in the same mixture, the levels of both ingredients should be adjusted in a manner that the total amount of both extracts does not exceed the maximum permitted level in each category as listed in their respective Standards. Therefore, as for any other Standard based on dermal sensitization effects, QRA2 has been applied. However, the only changes that have been implemented for the 49th Amendment are when QRA2-derived upper concentration levels were lower than the existing ones (43rd Amendment). Consequently, the new IFRA Standard levels are the lower of the two values from the previous and the new QRA2 approach.

3.2.5. 44 revised IFRA Restriction Standards driven by dermal sensitization and systemic toxicity concern

CAS number	Name	Status
144020-22-4 28371-99-5	Acetic acid, anhydride, reaction products with 1,5,10-trimethyl-1,5,9-cyclododecatriene	

CAS number	Name	Status
62563-80-8 68917-34-0 73246-97-6 84082-84-8	Acetylated Vetiver oil	REVISED RESTRICTED STANDARDS (BASED ON DERMAL SENSITIZATION AND SYSTEMIC TOXICITY)
7493-74-5 **863306-60-9 (New)**	Allyl phenoxyacetate	
101-85-9	α-Amyl cinnamic alcohol	
122-40-7	α-Amyl cinnamic aldehyde	
105-13-5 1331-81-3	Anisyl alcohol	
100-52-7	Benzaldehyde	
100-51-6	Benzyl alcohol	
120-51-4	Benzyl benzoate	
103-41-3	Benzyl cinnamate	
7492-44-6	α-Butylcinnamaldehyde	
62518-65-4	3-(m-tert-Butylphenyl)-2-methylpropionaldehyde (m-BMHCA)	
80-54-6	p-tert-Butyl-α-methylhydrocinnamic aldehyde (p-BMHCA)	
18127-01-0	p-tert-Butyldihydrocinnamaldehyde	
99-49-0 2244-16-8 6485-40-1	Carvone	
104-54-1	Cinnamic alcohol	
104-55-2	Cinnamic aldehyde	
5392-40-5 141-27-5 106-26-3	Citral	
91-64-5	Coumarin	
103-95-7	Cyclamen aldehyde	
106-02-5	Cyclopentadecanolide	
103-50-4	Dibenzyl ether	
33704-61-9	6,7-Dihydro-1,1,2,3,3-pentamethyl-4(5H)-indanone (DPMI)	
119-84-6	Dihydrocoumarin	
56973-85-4	1-(5,5-Dimethyl-1-cyclohexen-1-yl)pent-4-en-1-one	
103694-68-4	2,2-Dimethyl-3-(3-tolyl)propan-1-ol	
140-67-0	Estragole	
2563-07-7	2-Ethoxy-4-methylphenol	
4748-78-1	p-Ethylbenzaldehyde	
97-53-0	Eugenol	
6728-26-3	trans-2-Hexenal	
6259-76-3	Hexyl salicylate	
6658-48-6	p-Isobutyl-α-methyl hydrocinnamaldehyde	
97-54-1 **5932-68-3 (New)**	Isoeugenol	
123-11-5	p-Methoxybenzaldehyde	

CAS number	Name	Status
86803-90-9	Methoxy dicyclopentadiene carboxaldehyde	REVISED RESTRICTED STANDARDS (BASED ON DERMAL SENSITIZATION AND SYSTEMIC TOXICITY)
5462-06-6	4-Methoxy-α-methylbenzenepropanal	
1205-17-0	α-Methyl-1,3-benzodioxole-5-propionaldehyde (MMDHCA)	
93-15-2	Methyl eugenol	
54464-57-2 **54464-59-4 (New)** **68155-66-8 (New)** **68155-67-9 (New)**	1-(1,2,3,4,5,6,7,8 Octahydro-2,3,8,8-tetramethyl-2-naphthalenyl)ethanone (OTNE)	
8007-00-9	Peru balsam	
122-78-1	Phenylacetaldehyde	
16251-77-7	3-Phenylbutanal	
93-53-8 **1340-11-0 (New)** **34713-70-7 (New)**	2-Phenylpropionaldehyde	

In addition, the following changes have been included:

- **Acetylated Vetiver Oil (CAS numbers 2563-80-8, 68917-34-0, 73246-97-6, 84082-84-8)**: The CAS number 117-98-6 and respective synonyms have been deleted from the Standard. This arises from the evaluation of Acetylated Vetiver Oil by the Scientific Committee for Consumer Safety of the European Commission, for which IFRA submitted a dossier recommending excluding CAS number 117-98-6 as it is not representative of the fragrance ingredient Acetylated Vetiver Oil.

- **Allyl phenoxyacetate (CAS numbers 7493-74-5 and 863306-60-9):** The CAS number 863306-60-9 also refers to Allyl phenoxyacetate and has been added to the Standard for completeness purposes.

- **Cyclamen aldehyde (CAS number 103-95-7)** was published in the 48th Amendment as a Restriction Standard, while it already had a specification element. In the process of harmonization of the Standards, Cyclamen aldehyde is now clearly described as a Restriction/Specification Standard.

- The Standards for **Estragole (CAS number: 140-67-0)** and for **Methyl Eugenol (CAS number 93-15-2)** were based on systemic toxicity considerations (Carcinogenicity). For the 49th Amendment, both ingredients have also been evaluated for the dermal sensitization endpoint and aggregate exposure from multiple product types (see also Section 1 of this letter) has been considered to derive the maximum concentration levels.

- The CAS number 5932-68-3 has been added to the Standard on **Isoeugenol (CAS numbers 97-54-1 and 5932-68-3).**

- The CAS numbers 54464-59-4, 68155-66-8 and 68155-67-9 have been added to the Standard for **1-(1,2,3,4,5,6,7,8 Octahydro-2,3,8,8-tetramethyl-2-naphthalenyl) ethanone (OTNE, CAS numbers 54464-57-2; 54464-59-4; 68155-66-8 and 68155-67-9)**.

- The Standards Peru balsam crude and Peru balsam extracts and distillates, published under the 42nd and 43rd Amendment respectively, have been merged for harmonization reasons into one single Standard with a Prohibition/Restriction recommendation: **Peru balsam (CAS number: 8007-00-9)**. The specific individual Standard for Peru balsam crude as published before has therefore been deleted for

the 49th Amendment and its content (prohibition of the use of Peru balsam crude) continues to apply under the new combined Standard for Peru Balsam.

- The CAS numbers 1340-11-0 and 34713-70-7 have been for **2-Phenylpropionaldehyde (CAS numbers 93-53-8, 1340-11-0 and 34713-70-7).**

3.2.6. 1 revised Restriction Standard on phototoxicity with a new Prohibition and Specification

CAS number	Name	Status
91722-29-1 8016-84-0 **91770-75-1 (New)** **90131-43-4 (New)**	Tagetes oil and absolute	REVISED RESTRICTION STANDARD ON PHOTOTOXICITY WITH NEW SPECIFICATION AND PROHIBITION

A new Specification has been added to the Standard **Tagetes oil and absolute (CAS numbers 91722-29-1 and 8016-84-0)** regarding the content of alpha-Tertiophene of Tagetes minuta and Tagetes patula oils and absolutes. The CAS number 91770-75-1 referring to Tagetes minuta has been added to the Standard. The use of Tagetes erecta has been prohibited. Its CAS number, 90131-43-4, has been added accordingly to the Standard.

In addition, the restriction of 0.1% for rinse-off products is introduced in this IFRA Standard.

3.2.7. 1 revised Restriction Standard on phototoxicity with a clarification in its scope

CAS number	Name	Status
N/A	Citrus oils and other furocoumarin containing oils	REVISED RESTRICTION STANDARD ON PHOTOTOXICITY

The IFRA NCS Task Force has confirmed that **Mandarin oil** does not contain relevant amounts of phototoxic furocoumarins. As such, Mandarin oil has been removed from the non-exhaustive list of oils that contain furocoumarins and that should be considered within the scope of this Standard.

In addition, the wording of the Note box in the Standard has been corrected to clearly specify that the IFRA Policy on Furocoumarins only applies to furocoumarin-containing essential oils:

*"Where the level of Bergapten has not been determined by appropriate methods, the limits specified in the guidelines on individual oils should apply. In those cases, where such oils are used in combination with other [**furocoumarin-containing]** phototoxic fragrance ingredients (extracts), the additive effect has to be taken into consideration and the concentration levels have to be reduced accordingly.*

*The sum of the concentrations of all [**furocoumarin-containing]** phototoxic fragrance ingredients (extracts), expressed in % of their recommended upper concentration level in the finished consumer product, shall not exceed 100. […]*

*The following essential oils contain small amounts of phototoxic furocoumarins. […] These levels are not high enough to require special restrictions if used alone, but if used in combination with one or the other [**furocoumarin-containing]** phototoxic fragrance ingredients (extracts), attention should be paid that the total level of Bergapten in the consumer product does not exceed 15 ppm."*

As a result of potential impact on fragrance mixtures from product type changes as described on page 2 of this letter, the implementation timelines of the 49th Amendment are applicable to the Standard for Citrus oils and other furocoumarin containing oils.

3.2.8. Revised format of 12 IFRA Restriction Standards (no change in the content)

CAS number	Name	Status
15323-35-0	Acetyl hexamethyl indan (AHMI)	REVISED RESTRICTION STANDARDS (FORMAT CHANGE ONLY)
8015-64-3 **84775-41-7 (New)**	Angelica root oil	
8007-75-8 **89957-91-5 (New)**	Bergamot oil expressed	
68916-04-1 72968-50-4	Bitter orange peel oil expressed	
8014-13-9 **84775-51-9 (New)**	Cumin oil	
98-01-1	Furfural	
8016-20-4 **90045-43-5 (New)**	Grapefruit oil expressed	
8008-56-8 **84929-31-7 (New)**	Lemon oil cold pressed	
8008-26-2 **90063-52-8 (New)**	Lime oil expressed	
85-91-6	Methyl N-methylanthranilate	
93-08-3	Methyl β-naphthyl ketone	
8014-29-7 **84929-47-5 (New)**	Rue oil	

The EINECS CAS numbers as listed in the above table have been added to the following Standards:

- Angelica root oil
- Bergamot oil expressed
- Cumin oil
- Grapefruit oil expressed
- Lemon oil cold pressed
- Lime oil expressed
- Rue oil

The format of the above Standards has been reviewed according to the new IFRA product categories for dermal sensitization and systemic toxicity. As a result of potential impact on fragrance mixtures from product type changes as described on page 2 of this letter, the implementation timelines of the 49th Amendment are applicable to these Standards.

3.3. List of revised Specification Standards

3.3.1. 3 revised Specification Standards: Limonene, Linalool and Pinacea derivatives

CAS number	Name	Status
138-86-3 **5989-27-5 (New)** **5989-54-8 (New)** **7705-14-8 (New)**	Limonene	REVISED SPECIFICATION STANDARDS (WORDING)
78-70-6 126-90-9 126-91-0	Linalool	
N/A	Pinacea derivatives	

The Standards for **Limonene (CAS number 138-86-3; 5989-27-5; 5989-54-8 and 7705-14-8), Linalool (CAS numbers 78-70-6; 126-90-9 and 126-91-0) and Pinacea derivatives** establish a purity requirement regarding their peroxide content. The analytical method referred to in the Standards for the measurement of the peroxide value has been updated to the current IFRA Analytical Method for the Determination of the Peroxide Value (https://ifrafragrance.org/initiatives/guidance-documents). Work on further refinements on the method is ongoing and a revised method will be made available soon.

In addition, for consistency with the Linalool Standard, the CAS numbers of l-Limonene (5989-27-5), d-Limonene (5989-54-8) and isomer unspecified (7705-14-8) have been added to the **Limonene** Standard.

Please note that these changes do not affect the content of these Standards. Thus, the implementation timelines associated with the 49th Amendment do not apply for the Standards mentioned in this section.

3.3.2. Format change only: 3 revised Restricted Standards due to potential of nitrosamine formation

CAS number	Name	Status
65505-24-0	Isobutyl N-methylanthranylate	FORMAT CHANGE OF RESTRICTION STANDARDS TO SPECIFICATION STANDARDS
91-61-2	p-Methyltetrahydroquinone	
19343-78-3	1,2,3,4-Tetrahydro-4-methylquinoline	

The above-mentioned ingredients have been identified for having the potential of forming nitrosamines in nitrosating systems. These ingredients were restricted for use requesting users to notify downstream users of the presence of the material for them to be able to consider adequate protective measures. This corresponds to a Specification and not to a Restriction, and as a consequence, the Standards for these 3 ingredients have been updated accordingly. As these changes do not affect the content of these Standards, the implementation timelines associated with the 49th Amendment do not apply for the Standards mentioned in this section.

3.4. List of revised Prohibition and Prohibition/Specification Standards:

3.4.1. 8 revised Prohibition Standards on materials present in naturals

CAS number	Name	Status
78-59-1	Isophorone	REVISED PROHIBITED STANDARD WITH NEW RESTRICTION
494-40-6 (New) 2883-98-9 5273-86-9	cis-and trans-Asarone	FORMAT CHANGE OF REVISED PROHIBITION STANDARDS WITH RESTRICTION
140-29-4	Benzyl cyanide	
531-59-9	7-Methoxycoumarin	
94-59-7 120-58-1 94-58-6	Safrole, Isosafrole and Dihydrosafrole	
57-06-7	Allyl isothiocyanate	REVISED PROHIBITED STANDARD WITH PRESENCE IN NATURALS AT A TRACE LEVEL
764-40-9 142-83-6 80466-34-8 5910-85-0 30361-28-5 6750-03-4 2363-88-4 13162-46-4 21662-16-8 25152-84-5 30361-29-6 4313-03-5 **20432-40-0 (New)** **4488-48-6 (New)** **5577-44-6 (New)** **5910-87-2 (New)**	2,4-Dienals	REVISED PROHIBITED STANDARD WITH PRESENCE IN NATURALS AT A TRACE LEVEL
80-62-6	Methyl methacrylate	

Isophorone (CAS number 78-59-1) has been found to be present in natural substances such as Saffron and Cistus oils. On the basis of established maximum levels of this substance in commercially available natural sources (like essential oils and extracts), exposure to this substance from the use of these oils and extracts is not significant and the use of these oils is authorized as long as the level of Isophorone in the finished product does not exceed 0.0013%. Furthermore, these natural extracts should not be used as substitutes for this substance. The Standard has been modified and Annex I updated accordingly. A restriction has been added to the Prohibition Standard for Isophorone to take into account these contributions from natural sources. As this represents a change in the scope of the Standard, the implementation timelines established for the 49th Amendment do apply for the new elements in the Isophorone Standard.

Allyl isothiocyanate (CAS number 57-06-7) can be found at relatively high levels in Mustard oil and Horseradish oil. The indicative concentrations of Allyl isothiocyanate in these two essential oils have been added to the Standard. The natural extracts containing Allyl isothiocyanate should not be used as substitutes for this substance, meaning that the use of Mustard oil and Horseradish oil cannot be considered safe and therefore both extracts should not be used in fragrance mixtures until additional data is available and considered sufficient to support the safe use of these ingredients. A respective statement has been included in the IFRA Standard. As this represents a change in the scope of the Standard, the implementation timelines established for the 49th Amendment do apply for the new elements of the Allyl isothiocyanate Standard.

2,4-Decadienal (CAS number 2363-88-4) has been reported to occur in nature at trace levels. As a consequence, a respective note has been added to the Standard of **2,4-Dienals**. Moreover, the following additional CAS numbers have been added to this Standard: 20432-40-0, 4488-48-6, 5577-44-6 and 5910-87-2. As this is an informative clarification on the scope of the Standard, the timelines of implementation of the 49th Amendment are not applicable to the Standard for 2,4-Dienals.

Methyl methacrylate (CAS number 80-62-6) can be found at trace levels in natural substances. A respective statement has been included in the IFRA Standard. As this is an informative clarification on the scope of the Standard, the timelines of implementation of the 49th Amendment are not applicable to the Standard for Methyl methacrylate.

cis-and trans-Asarone (CAS numbers 494-40-6, 2883-98-9 and 5273-86-9), Benzyl cyanide (CAS number 140-29-4) and **7-Methoxycoumarin (CAS number 531-59-9)** were prohibited in the past, but had a restriction related to their presence in naturals which was not reflected as such in the recommendation section of their Standards. In the process of harmonization of the Standards, they now become Prohibition/Restriction. For **cis-and trans-Asarone (CAS numbers 494-40-6, 2883-98-9 and 5273-86-9),** the generic CAS number 494-40-6 referring to cis, trans-Asarone has been added to the Standard. Please note that these changes do not affect the content of these Standards. Thus, the implementation timelines associated with the 49th Amendment do not apply for the Standards mentioned in this section.

The scope of application of the Standard for **Safrole, Isosafrole and Dihydrosafrole (CAS numbers 94-59-7; 120-58-1 and 94-58-6)** has been clarified. The total concentration of 0.01% in natural extracts applies to the sum of Safrole, Isosafrole and/or Dihydrosafrole. Moreover, this Standard has been reviewed according to the new IFRA product Categories for dermal sensitization and systemic toxicity. As this is an informative clarification on the scope of the Standard, the timelines of implementation of the 49th Amendment are not applicable to the Standard for Safrole, Isosafrole and Dihydrosafrole.

3.4.2. 2 revised Prohibition Standards with an update of wording regarding the synonyms and the allowance of trace levels

CAS number	Name	Status
5146-66-7 5585-39-7 31983-27-4	Geranyl nitrile	REVISED PROHIBITION STANDARDS (CLARIFICATION OF WORDING AND SYNONYMS)
81-15-2	Musk xylene	

The wording regarding the presence of trace levels of **Geranyl nitrile (CAS numbers 5146-66-7; 5585-39-7 and 31983-27-4)** in other fragrance ingredients has been revised for clarification purposes: 'The material has been reviewed by the Expert Panel for Fragrance Safety with the conclusion that it should not be used as a fragrance ingredient, or in fragrance ingredients above unavoidable trace levels until additional data is available and considered sufficient to support the safe use of these ingredients'.

The synonyms of the Standard **Musk xylene (CAS number 81-15-2)** have been corrected to:

- 1-tert-Butyl-3,5-dimethyl-2,4,6-trinitrobenzene;
- 2,4,6-Trinitro-1,3-methyl-5-tert-butylbenzene;
- Benzene, 1-(1,1-dimethylethyl)-3,5-dimethyl-2,4,6-trinitro- and
- Musk Xylol.

These adaptations do not represent a change in the content of both Standards. Thus, the implementation timelines of the 49th Amendment are not applicable to these two Standards.

3.4.3. 2 revised Prohibition/Specification Standards with a clarification of the wording regarding the applicability of the Specification

CAS number	Name	Status
8001-88-5 84012-15-7 85940-29-0 68917-50-0 **85251-66-7 (New)** **91745-85-6 (New)**	Birch Wood Pyrolysate	CLARIFICATION OF WORDING IN PROHIBITION/SPECIFICATION STANDARDS
8013-10-3 90046-02-9	Cade oil	

The wording regarding the limit set by the specification in the Standards for **Birch Wood Pyrolysate (CAS numbers 8001-88-5; 84012-15-7; 85940-29-0 and 68917-50-0)** and for **Cade oil (CAS numbers 8013-10-3 and 90046-02-9)** has been modified to more clearly state that such limits indeed apply to the finished consumer product. Please note that this change does not affect the content of these Standards. Thus, the implementation timelines associated with the 49th Amendment do not apply for the Standards mentioned in this section.

For completeness, the CAS numbers **85251-66-7** and **91745-85-6** have been added to the Standard **Birch Wood Pyrolysate**.

3.4.4. Format change only: 2 revised Prohibition Standards to which a Specification was already included:

CAS number	Name	Status
71-43-2	Benzene	FORMAT CHANGE OF REVISED PROHIBITION STANDARDS WITH SPECIFICATION
108-88-3	Toluene	

The above-mentioned ingredients were prohibited in the past but had a specification element (i.e. trace level allowance), which was not reflected as such in the recommendation section of their Standards. In the process of harmonization of the Standards, for clarification they now become Prohibition/Specification. Please note that this change does not affect the content of these Standards. Thus, the implementation timelines associated with the 49th Amendment do not apply for the Standards mentioned in this section.

3.4.5. Clarification on the toxicological endpoint of concern (i.e. critical effect) for 24 Prohibited Standards that were included in the 'list of other materials' in the past

CAS number	Name	Status
73157-43-4	Allyl heptine carbonate	REVISED PROHIBITED STANDARDS (FORMATTING ONLY)
57-06-7	Allyl isothiocyanate	
25564-22-1	Amylcyclopentenone	
76-29-9	3-Bromo-1,7,7-trimethylbicyclo[2.2.1]heptane-2-one	
103-64-0	Bromostyrene	
8006-99-3 **8024-11-1 (New)** **89997-47-7 (New)**	Chenopodium oil	
4173-44-8	Cinnamylidene acetone	
3591-42-2	2,2-Dichloro-1-methylcyclopropylbenzene	
10484-32-9 10519-20-7	Esters of 2-octynoic acid (Except Methyl heptine carbonate)	
10031-92-2	Esters of 2-nonynoic acid, (Except Methyl octine carbonate)	
623-15-4	Furfurylidene acetone	
5146-66-7 5585-39-7 31983-27-4	Geranyl nitrile	
78-59-1	Isophorone	
85085-26-3	Massoia bark oil	
5406-12-2	p-Methylhydrocinnamic aldehyde	
80-62-6	Methyl methacrylate	
53153-66-5	3-Methyl-2(3)-nonenenitrile	
63697-53-0	Musk α	
62265-99-0	Musk KS	
116-66-5	Musk moskene	
145-39-1	Musk tibetene	
103-79-7	Phenyl acetone	
93-99-2	Phenyl benzoate	
84961-58-0	Santolina oil	

The list of "*other materials*" was withdrawn in the past and the materials that were included in it were transferred into Prohibited Standards, not always mentioning the endpoint justifying the setting of the Standard. Taking advantage of the migration of IFRA Standards into a database management system, IFRA has added the endpoint of concern (i.e. critical effect) to those Standards for clarification purposes.

Please note that the content remains unchanged and consequently, the implementation timelines of the 49th Amendment do not apply to the above-mentioned Standards.

3.4.6. 49 Standards for which no change has been included in the 49th Amendment

CAS	Name	Status
88-29-9	Acetyl ethyl tetramethyl tetralin (AETT)	PROHIBITION
13706-86-0	Acetyl isovaleryl	PROHIBITION
97676-35-2 **84012-20-4 (New)**	Alantroot oil	PROHIBITION
Not applicable	Allyl Esters	SPECIFICATION
943-88-4	Anisylidene acetone	PROHIBITION
122-57-6	Benzylidene acetone	PROHIBITION
8022-81-9 **84649-96-7 (New)**	Boldo oil	PROHIBITION
98-54-4	p-tert-Butylphenol	PROHIBITION
33204-74-9	Carvone oxide	PROHIBITION
8050-09-7	Colophony	PROHIBITION
8023-88-9 **90106-55-1 (New)**	Costus root oil, absolute and concrete	PROHIBITION
4756-19-8	Cyclamen alcohol	PROHIBITION/SPECIFICATION
141-05-9	Diethyl maleate	PROHIBITION
6248-20-0	2,4-Dihydroxy-3-methylbenzaldehyde	PROHIBITION
17874-34-9	4,6-Dimethyl-8-tert-butylcoumarin	PROHIBITION
40607-48-5	3,7-Dimethyl-2-octen-1-ol	PROHIBITION
617-54-9	Dimethyl citraconate	PROHIBITION
122-39-4	Diphenylamine	PROHIBITION
18485-38-6	2,4-Dodecadien-1-ol, (2E, 4E)	PROHIBITION
140-88-5	Ethyl acrylate	PROHIBITION
110-80-5 111-15-9	Ethylene glycol monoethyl ether and its acetate	PROHIBITION
109-86-4 110-49-6	Ethylene glycol monomethyl ether and its acetate	PROHIBITION
68916-52-9 **90028-74-3 (New)**	Fig leaf absolute	PROHIBITION
98-00-0	Furfuryl alcohol	PROHIBITION
18829-55-5	trans-2-Heptenal	PROHIBITION
111-28-4 17102-64-6	2,4-Hexadien-1-ol	PROHIBITION
700-82-3	Hexahydrocoumarin	PROHIBITION
67746-30-9	trans-2-Hexenal diethyl acetal	PROHIBITION
18318-83-7	trans-2-Hexenal dimethyl acetal	PROHIBITION
13393-93-6 26266-77-3 1333-89-7	Hydroabietyl alcohol, Dihydroabietyl alcohol	PROHIBITION
622-62-8	Hydroquinone monoethyl ether	PROHIBITION
150-76-5	Hydroquinone monomethyl ether	PROHIBITION
34131-99-2	6-Isopropyl-2-decalol	PROHIBITION
54814-64-1 51154-96-2	Massoia lactone	PROHIBITION
104-27-8	α-Methyl anisylidene acetone	PROHIBITION
92-48-8	6-Methylcoumarin	PROHIBITION

CAS	Name	Status
2445-83-2	7-Methylcoumarin	PROHIBITION
623-43-8	Methyl crotonate	PROHIBITION
87-05-8	4-Methyl-7-ethoxycoumarin	PROHIBITION
83-66-9	Musk ambrette	PROHIBITION
81-14-1	Musk ketone	SPECIFICATION
98-95-3	Nitrobenzene	PROHIBITION
4674-50-4	Nootkatone	SPECIFICATION
25677-40-1	2-Pentylidene cyclohexanone	PROHIBITION
141-10-6	Pseudoionone	PROHIBITION/SPECIFICATION
26651-96-7 72968-25-3 1117-41-5	Pseudo Methylionones	PROHIBITION/SPECIFICATION
91-22-5	Quinoline	PROHIBITION
8024-00-8 **90046-04-1 (New)** **68916-94-9 (New)** **90046-03-0 (New)**	Savin oil	PROHIBITION/SPECIFICATION
515-03-7	Sclareol	SPECIFICATION

For completeness purposes, the below mentioned CAS numbers have been added to their respective Standard:

- CAS number 84012-20-4 for the Standard on **Alantroot oil**.
- CAS number 84649-96-7 for the Standard on **Boldo oil.**
- CAS number 90106-55-1 for the Standard on **Costus root oil, absolute and concrete**.
- CAS number 90028-74-3 for the Standard on **Fig leaf absolute**.
- CAS numbers 90046-04-1, 68916-94-9 and 90046-03-0 for the Standard on **Savin oil**.

3.4.7. 2 Standards that will be deleted as part of the 49th Amendment (the content of which has been transferred to other Standards)

CAS	Name	Status
8024-12-2	Verbena oil (Lippia citriodora Kunth.)	PROHIBITION
8007-00-9	Peru balsam crude	PROHIBITION

As explained in section 3.2.1, the Standards for Verbena oil and Verbena absolute (Lippia citriodora Kunth.), published under the 40th and 45th Amendment respectively, have been merged for harmonization reasons into one single Standard with a Prohibition/Restriction recommendation: **Verbena oil and absolute (Lippia citriodora Kunth.) (CAS numbers: 8024-12-2 and 85116-63-8)**. The Standard for Verbena oil as published before has therefore been deleted for the 49th Amendment and its content (prohibition of the use of Verbena oil) continues to apply under the new combined Standard for Verbena oil and absolute (Lippia citriodora Kunth.).

Similarly, as explained in section 3.2.5, the Standards for Peru balsam crude and Peru balsam extracts and distillates, published under the 42nd and 43rd Amendment respectively, have been merged for harmonization reasons into a single Standard with a Prohibition/Restriction recommendation: **Peru balsam (CAS number: 8007-00-9)**. The Standard for Peru balsam crude as published before has therefore been deleted for the 49th Amendment and its content (prohibition of the use of Peru balsam crude) continues to apply under the new combined Standard for Peru Balsam.

4. Annex I

The IFRA Naturals Complex Substances (NCS) TF has reviewed the Annex I to the IFRA Standards (Att. 02). Annex I is a non-exhaustive indicative list of typical natural presence for a fragrance ingredient under the scope of an IFRA Standard and is intended to be used in the absence of own analytical data. For the 49th Amendment, the Annex I to the IFRA Standards includes the natural contributions of the ingredients having a new IFRA Standard in the 49th Amendment. In addition, the information contained in the Annex I for previous Amendments has been reviewed and updated. Finally, the natural contributions of ingredients which are prohibited for use have also been added for information purposes. The key information from Annex I to the IFRA Standards has been included in each individual Standard. Please refer to the Annex I itself (Excel file) to have the complete information regarding the natural contributions for each Standard.

5. Annex II

The Annex II to the IFRA Standards (Att. 03) does not include any change for the 49th Amendment. The relevant information from Annex II for the IFRA Standards has been included in each individual Standard. Please refer to the Annex II itself (Excel file) to have the complete information regarding the potential restriction on Schiff bases attributed to each Standard.

6. Revised Certificate of Conformity to the IFRA Standards

The certificate of conformity of fragrance mixtures with IFRA Standards hereafter "Certificate of Conformity" declares conformity with the requirements expressed in the IFRA Standards. It confirms that a specific fragrance mixture up to a certain concentration can be used in a specified consumer product in conformity with the requirements of latest IFRA Amendment in force (the number and the Notification date of the Amendment should be stated on the Certificate).

IFRA Classes were used in the past to define the group of consumer products for which the fragrance mixture can be used at the upper concentration level determined by the Certificate of Conformity. Such Classes took into account systemic toxicity and phototoxicity considerations. Today, with the 49th Amendment, IFRA Standard Categories already consider skin sensitization, systemic toxicity and phototoxicity considerations. As a consequence, the nomenclature of ‘Classes’ becomes obsolete, as they already match with the IFRA Standard Categories.

In order to provide clarification on IFRA’s liability and to reflect the changes in IFRA product categorization system, a revised template for Certificates of Compliance to the IFRA Standards has been created and uploaded onto the IFRA website. This template was part of the Consultation of the IFRA 49th Amendment.

https://ifrafragrance.org/docs/default-source/ifra-code-of-practice-and-standards/ifra-certificate-template/certificate-of-conformity-to-ifra-standards-template-december-12-2019.doc?sfvrsn=20664815_2

Previous Information Letters on Certificates (i.e. IL768 and IL896) are replaced by this Guidance Document.

7. Additional documentation to assist in the use and implementation of the 49th Amendment

Index of the IFRA Standards (Att. 04)

Excel overview of IFRA Standards (Att. 05)

8. List of attachments

Att. 01:	Guidance for the use of IFRA Standards
Att. 02:	Annex I to the IFRA Standards
Att. 03:	Annex II to the IFRA Standards
Att. 04:	Index of IFRA Standards
Att. 05:	Excel overview of IFRA Standards