

So the world  
can enjoy  
**fragrance**



**RIFM**<sup>®</sup>

RESEARCH INSTITUTE FOR  
FRAGRANCE MATERIALS

The background of the entire page is a dark, moody photograph. On the left, the profile of a woman's face and shoulder is visible, looking upwards. On the right, a hand holds a clear, faceted glass perfume bottle. A large, semi-transparent 'X' watermark is overlaid across the center of the image, extending from the top right to the bottom left.

# RIFM in Brief

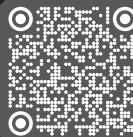
The Research Institute for Fragrance Materials (RIFM) is an independent non-profit scientific research institute established in 1966.

RIFM evaluates fragrance-producing ingredients through our internationally recognized Safety Assessment and Research Programs.



RIFM has a long history of generating safety assessments and an active research program to improve its ability to substantiate the safe use of fragrance ingredients. These programs have proved valuable in our internal assessment process and in the fragrance industry's effort to address safety-related concerns such as those raised by regulators.

RIFM's findings are reviewed and approved by The Expert Panel for Fragrance Safety, an independent panel of academic experts with no ties to the fragrance industry, before submission for peer-reviewed publication. Once published, RIFM's safety assessments and research papers are made available to the public for free via the Fragrance Materials Safety Resource Center.



# Mission, Core Values, Vision



## Our Vision

RIFM's Leadership in state-of-the-art science enables the enjoyment of fragrances around the world.

## Our Mission

RIFM science and research builds international trust in and acceptance of the safe use of fragrance materials.

## Our Core Values

- ▶ Scientific Excellence, Objectivity, Integrity, and Leadership
- ▶ Collaboration
- ▶ Transparency



## **RIFM's Organizational Strategy**

RIFM's Strategy builds on its Mission, Core Values, and Vision to achieve three long-term goals.

**1**

Robust safety assessments provide the foundation of trust in the safe use of fragrance materials.

**2**

RIFM leads scientific advancement in support of the safe use of fragrances.

**3**

RIFM engages with key stakeholders to increase the impact of our science.

## **RIFM's New Approach Method (NAMs) Research Strategy**

RIFM's NAMs Research Strategy provides the foundation for the Institute's long-standing commitment and history to eliminating animal studies and integrating the latest scientific methods and technologies into its Fragrance Material Safety Assessments via two critical goals.

**1**

Maintain and enhance RIFM's fragrance safety science leadership role.

**2**

Provide the scientific foundation to support regulatory compliance & consumer safety.

RIFM's NAMs Research Strategy has saved over half a million animals to date.



## RIFM's Commitment to Objectivity

RIFM works across academia, governmental agencies, and industry, taking five critical steps to ensure bias-free, science-based evaluations that allow the world to enjoy fragrance safely.

- ① RIFM's work must be reviewed and approved by The Expert Panel for Fragrance Safety, an oversight body of academic experts without ties to the industry.
- ② RIFM prioritizes data that follows internationally accepted best practices and guidelines.
- ③ Once approved, RIFM submits all of its work for publication in the peer-reviewed scientific literature.
- ④ RIFM makes all published work available for open access to the scientific community and other fragrance safety stakeholders via The Fragrance Material Safety Resource Center; visit via the QR code.
- ⑤ RIFM collaborates with governmental agencies worldwide to ensure that its science is reproducible by independent scientists.



# The Expert Panel for Fragrance Safety

Established in 1967, the Expert Panel for Fragrance Safety is an independent panel of experts that reviews RIFM's activities for consumers, official agencies, and the industry. The Expert Panel provides strategic guidance, determines scientific study design, and interprets test results for relevance to human health and environmental protection.

The Expert Panel selects its own members, who serve on a rotating basis. It comprises internationally known academic scientists, including dermatologists, pathologists, toxicologists, and environmental scientists. Adjunct groups of independent academics provide additional expertise with knowledge in genetic toxicity, respiratory science, reproductive effects, environmental fate, and epidemiology.

The Panel determines the safety of use for fragrance ingredients by considering available information and active generation of additional data. Its independent conclusions are presented to professional, scientific, and medical societies and are published in peer-reviewed scientific journals.

When important for consumer and environmental protection, decisions of the Expert Panel regarding restrictions of use are published as International Fragrance Association (IFRA) Standards.



## What RIFM Safety Assessments Cover

RIFM scientists perform risk assessments that integrate hazard and exposure information on two kinds of fragrance-producing ingredients: natural and discrete materials. These assessments follow the peer-reviewed RIFM Criteria Documents for natural and lab-created ingredients.

Using up-to-date, cutting-edge science, RIFM evaluates six areas (or endpoints) of human health plus environmental impact in its comprehensive safety assessments:



### Genotoxicity

*damage to the genetic material in the body's cells*



### Repeated dose toxicity

*effects due to prolonged usage and exposure*



### Reproductive toxicity

*effects on fetal, infant, and childhood development or sexual function in adults*



### **Skin sensitization**

*a rare allergic reaction  
on the skin*



### **Local Respiratory toxicity**

*effects in the organs  
of the respiratory system*



### **Photoirritation/photoallergenicity**

*light-induced skin irritation  
reaction [photoirritation] or  
allergic reaction [photoallergenicity]*



### **Environmental toxicity**

*impact on the aquatic environment*



## **These evaluations are informed by the most recent advances in:**

Computational toxicology

*In vitro* (e.g., Petri dish) methodologies

Aggregate exposure measurement

► Environmental impact assessment

► Threshold for Toxicological Concern (TTC)

# How Exposure Helps RIFM Study Risk

When evaluating the safety of a fragrance ingredient, RIFM includes the aggregate exposure (dermal, inhalation and oral); in other words, the total combined amount of a single fragrance ingredient that a person comes in contact with through all consumer products used in a day.

**RIFM considers the following exposure data:**

1

Amount of the ingredient in all products used.



2

How often and how long the exposure to the ingredient lasts.



3

Where contact takes place (e.g., the scalp).



In 2010, RIFM collaborated with data analytics software leader Creme Global.

RIFM and Creme developed and now maintain a database and software to interpret the data. The software is called the Creme-RIFM Aggregate Exposure Model.

The Creme-RIFM Model is the most comprehensive of its kind, including real-life data from more than 41,000 consumers on their daily use of fragranced products. All data are updated every 5 years. A series of studies on cosmetic, personal care, air care, and household care products provide information on the quantities of products used.



# RIFM's Strategic Collaborative approach

Since its founding as a non-profit organization in 1966, RIFM has prioritized collaborative research and safety evaluation, drawing on the expertise of scientists worldwide.

The many advantages to working directly with other scientists include:



Engaged  
partnerships



Diverse  
expertise



Reduces  
duplication of  
effort



Opens new  
avenues of  
communication

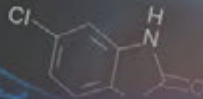


Brings people  
and organizations  
together

RIFM's scientific collaborations extend throughout our work, from the international data and scientific literature RIFM analyzes and compiles in its comprehensive database to the international panel of expert academics without ties to the fragrance industry who review and approve all of RIFM's work.

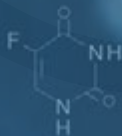
In addition to collaborating directly with academic, industry, and governmental agency scientists, RIFM shares its science with the international community at several events throughout the year, including the Society of Toxicology Annual Meeting (SOT) and the Society of Environmental Toxicology and Chemistry (SETAC).

# The RIFM Fragrance & Flavor Database



The RIFM Database is the most comprehensive worldwide source of toxicology data, literature, and general information on fragrance and flavor raw materials, containing information on more than 7,000 individual ingredients, over 80,000 references including approximately 200,000 human health and environmental study endpoints.

Database staff supports RIFM's Safety Assessment program by liaising with the IFRA Natural Complex Substance (NCS) Task Force to clarify NCS composition



and also managing the development and maintenance of multiple software programs dedicated to the Safety Assessment process.

RIFM staff continue to provide RIFM-sponsored studies to its members for REACH and other regional "REACH-like" registrations. We have been selling these studies to non-members for regional programs in Asia, Europe, North America to help fund our science.



# RIFM Assessment Tools

RIFM has created several safety assessment tools (non-animal models and methodologies) available for RIFM Members and Database Subscribers.

They include:



## Genotoxicity Data Visualization Tool

Genotoxicity data for fragrance ingredients in a graphical format.



## The Multiple Path Particle Dosimetry Model

Assessment tool developed to study the uptake of vapors and deposition of aerosol particulate/droplet components.



## RIFM 2-Box Air Dispersion Model

Indoor environment air model that characterizes the dispersion of a single chemical inside two connected zones and determines air exposure concentrations.



## RIFM Skin Absorption Model Calculator

Used to estimate the skin absorption percentage of an ingredient.



## Toxicity DataSearch Engine

Automatically searches 9 major toxicology databases to generate a combined accessible output.

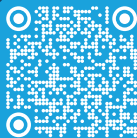
## Advancing RIFM's science

RIFM launched its first-ever Communications Strategy & Plan in 2020 to ensure the Institute made its science accessible, legible, and available for all fragrance safety stakeholders.

All RIFM staff engage in ongoing communications development and present their work for thousands of fragrance safety stakeholders annually online and at conferences, member site visits, meetings with international regulatory agencies, and other events worldwide.

RIFM's scientists frequently share their scientific insights in articles in high-impact mainstream and industry media, from *The New York Times* to *CosmeticsDesign*.

RIFM's peer-reviewed scientific publications, including dozens of NAMS-focused research papers and safety assessments covering nearly 2,000 fragrance ingredients, are available for open access via the Fragrance Material Safety Resource Center.



# Become a Fragrance Safety Leader.

## *Join RIFM!*

RIFM membership signals integrity and dedication to the safety of consumers and the environment.

RIFM membership means early and direct access to all available data and other resources to help you produce safe products and reach your company's goals.

### **Access to members-only content and more**

RIFM membership affords a wealth of exclusive content, tools, events, and access to an expanded network of technical expertise.

### **The RIFM Database**

Receive discounted rates to the world's largest information resource specific to flavor and fragrance materials.

### **Get support for your scientific and regulatory compliance goals**

Enjoy early awareness of scientific and regulatory issues and assistance from RIFM staff scientists.





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