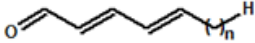


2,4-Dienals

CAS-No.:	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 4488-48-6 5577-44-6 5910-87-2	Molecular formula:	$C_{5+n}H_{6+2n}O$
	The scope of the Standard covers but is not limited to the list of CAS numbers enumerated above (including all their geometric isomers).	Structure:	
Synonyms:	Including but not limited to: 2,4-Pentadienal 2,4-Hexadienal 2,4-Heptadienal 2,4-Octadienal 2,4-Nonadienal 2,4-Decadienal 2,4-Undecadienal 2,4-Dodecadienal trans,trans-2,4-Decadienal trans,trans-2,4-Undecadienal 2,4-Heptadien-1-al (including all geometric isomers)		

History:	Publication date:	2013 (Amendment 47)	Previous Publications:	Not applicable.
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Implementation dates:	For new submissions*:	August 10, 2013
	For existing fragrance compounds*:	August 10, 2014
	*These dates apply to the supply of fragrance mixtures (formulas) only, not to the finished consumer products in the marketplace. This IFRA Standard represents the group of 2,4-Dienals and replaces the existing individual IFRA Standards for the materials listed above. This new group also includes any other 2,4-Dienals.	

2,4-Dienals**RECOMMENDATION:****PROHIBITION****FRAGRANCE INGREDIENT PROHIBITION:**

2,4-Dienals should not be used as a fragrance ingredient.

CONTRIBUTIONS FROM OTHER SOURCES:**NONE TO CONSIDER (SEE ALSO THE SECTION ON CONTRIBUTIONS FROM OTHER SOURCES IN CHAPTER 1 OF THE GUIDANCE FOR THE USE OF IFRA STANDARDS)**

2,4-Decadienal (CAS number 2363-88-4) has been found in natural extracts but only at trace levels.

INTRINSIC PROPERTY DRIVING RISK MANAGEMENT:**INSUFFICIENT DATA****EXPERT PANEL FOR FRAGRANCE SAFETY RATIONALE / CONCLUSION:**

The Expert Panel for Fragrance Safety reviewed all the available data for 2,4-Dienals and recommends not to use 2,4-Dienals as or in fragrance ingredients in any finished product application until additional data is available and considered sufficient to support its safe use.

REFERENCES:

The IFRA Standard on 2,4-Dienals is based on at least one of the following publications:

- The RIFM Safety Assessment on 2,4-Dienals if available at the RIFM Safety Assessment Sheet Database: <http://fragrancematerialsafetyresource.elsevier.com>
- Api A.M., Belsito D., Bruze M., Cadby P., Calow P., Dagli M. L., Dekant W., Dent M., Ellis G., Fryer A. D., Fukayama M., Griem P., Hickey C., Kromidas L., Lalko J., Liebler D.C., Miyachi Y., Politano V.T., Renskers K., Ritacco G., Salvito D., Schultz T.W., Sipes I. G., Smith B., Vitale D., Wilcox D.K. (2015). Criteria for the Research Institute for Fragrance Materials, Inc. (RIFM) safety

2,4-Dienals

evaluation process for fragrance ingredients. *Food Chem Toxicol.* 2015 Aug;82 Suppl:S1-S19 (http://fragrancematerialsafetyresource.elsevier.com/sites/default/files/Criteria_Document_Final.pdf).

- IDEA project (International Dialogue for the Evaluation of Allergens) Final Report on the QRA2: Skin Sensitisation Quantitative Risk Assessment for Fragrance Ingredients, September 30, 2016 (<http://www.ideaproject.info/uploads/Modules/Documents/qra2-dossier-final--september-2016.pdf>).
- Salvito D.T., Senna R. J., Federle T.W. (2002). A framework for prioritizing fragrance materials for aquatic risk assessment. *Environ Toxicol Chem.* 2002;21:1301-1308 (<https://www.ncbi.nlm.nih.gov/pubmed/12069318>).

Additional information on the application of IFRA Standards is available in the Guidance for the use of IFRA Standards, publicly available at www.ifrafragrance.org.