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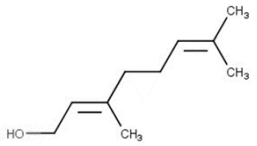
CAS-No.:	106-24-1 The scope of this Standard includes, but is not limited to the CAS number(s) indicated above; any other CAS number(s) used to identify this fragrance ingredient should be considered in scope as well.	**Molecular formula:**	$C_{10}H_{18}O$
		Structure:	
Synonyms:	3,7-Dimethylocta-2,6-dien-1-ol 2,6-Octadien-1-ol, 3,7-dimethyl-, (e)- 2,6-Dimethyl-2,6-octadien-8-ol trans-3,7-Dimethyl-2,6-octadien-1-ol trans-3,7-Dimethyl-2,7-octadien-1-ol Geraniol 60 (commercial name) Geraniol Coeur (commercial name) Geraniol extra (commercial name) Geraniol SP (commercial name) Geraniol Supra (commercial name) Meranol (commercial name) Rhodinol pure (commercial name)		

History:	Publication date:	2020 (Amendment 49)	Previous Publications:	2007

Implementation dates:	For new submissions*:	February 10, 2021
	For existing fragrance compounds*:	February 10, 2022
	*These dates apply to the supply of fragrance mixtures (formulas) only, not to the finished consumer products in the marketplace.	

RECOMMENDATION:	**RESTRICTION**

RESTRICTION LIMITS IN THE FINISHED PRODUCT (%):			
Category 1	0.85 %	Category 7A	9.6 %
Category 2	0.25 %	Category 7B	9.6 %

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Category 3	5.1 %	Category 8	0.50 %
Category 4	4.7 %	Category 9	9.2 %
Category 5A	1.2 %	Category 10A	33 %
Category 5B	1.2 %	Category 10B	33 %
Category 5C	1.2 %	Category 11A	18 %
Category 5D	1.2 %	Category 11B	18 %
Category 6	2.8 %	Category 12	No Restriction

FLAVOR REQUIREMENTS:	Due to the possible ingestion of small amounts of fragrance ingredients from their use in products in Categories 1 and 6, materials must not only comply with IFRA Standards but must also be recognized as safe as a flavoring ingredient as defined by the IOFI Code of Practice (www.iofi.org). For more details see chapter 1 of the Guidance for the use of IFRA Standards.

CONTRIBUTIONS FROM OTHER SOURCES:	**SEE ANNEX I**

ANNEX I

Natural Complex Substances (NCS) containing Geraniol

Concentration in NCS (%)	CAS number of ingredient	Name of NCS	Botanical name	CAS number of NCS	Essential oil category
1	106-24-1	Armoise vulgaris oil	Artemisia vulgaris L.	68991-20-8	E2.12
1.3	106-24-1	Balm oil	Melissa officinalis L.	8014-71-9	E2.12
0.2	106-24-1	Basil oil, chemotype linalool	Ocimum basilicum L.	8015-73-4	E2.12
0.1	106-24-1	Bergamot oil, expressed	Citrus bergamia (Risso) Wright & Arn.	8007-75-8	G2.5
0.1	106-24-1	Bergamot oil, furocoumarin free	Citrus bergamia (Risso) Wright & Arn.	68648-33-9	G2.33
0.7	106-24-1	Cananga oil	Cananga odorata	68606-83-7	F2.12

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			(Lam.) Hook. f. & Thomson (forma macrophylla Steenis)		
0.7	106-24-1	Cardamom seed extract	Elettaria cardamomum (L.) Maton	8000-66-6	H2.13
1	106-24-1	Cardamom seed oil	Elettaria cardamomum (L.) Maton	8000-66-6	H2.12
1.1	106-24-1	Carrot seed oil	Daucus carota L.	8015-88-1	H2.12
1	106-24-1	Cassie absolute	Vachellia farnesiana (L.) Willd.	8023-82-3	F2.1
0.3	106-24-1	Cassie extract	Vachellia farnesiana (L.) Willd.	8023-82-3	F2.13
17.7	106-24-1	Citronella oil, Ceylon type	Cymbopogon nardus (L.) Rendle	8000-29-1	E2.12
22	106-24-1	Citronella oil, Java type	Cymbopogon winterianus Jowitt	8000-29-1	E2.12
0.7	106-24-1	Citrus hystrix extract	Citrus hystrix DC	91771-50-5	G2.5
0.2	106-24-1	Clary sage concrete	Salvia sclarea L.	8016-63-5	E2.7
1.2	106-24-1	Clary sage oil	Salvia sclarea L.	8016-63-5	E2.12
0.8	106-24-1	Coriander herb oil	Corindrum sativum L.	8008-52-4	E2.12
1.6	106-24-1	Coriander seed oil	Coriandrum sativum L.	8008-52-4	H2.12
0.16	106-24-1	Eucalyptus radiata oil	Eucalyptus radiata Sieber ex DC oil	92201-64-4	E2.12
0.03	106-24-1	Fir needle oil, Siberian	Abies siberica Ledeb (Pinaceae)	8021-29-2	E2.12
0.13	106-24-1	Genet absolute	Spartium junceum L.	90131-21-8	E2.1
9	106-24-1	Geranium absolute	Pelargonium graveolens l'Hertier ex Aiton	8000-46-2	E2.1
17.7	106-24-1	Geranium oil	Pelargonium graveolens l'Hertier ex Aiton	8000-46-2	E2.12
17	106-24-1	Geranium oil African	Pelargonium odoratissimum L'Heritier	8000-46-2	E2.12
10	106-24-1	Geranium oil, terpene-free	Pelargonium graveolens l'Hertier ex Aiton	68916-44-9	E2.29
0.5	106-24-1	Ginger oil	Zingiber officinale Rosc.	8007-08-7	A2.12
0.1	106-24-1	Ginger oleoresin	Zingiber officinale Rosc.	8007-08-7	A2.21
0.04	106-24-1	Gingergrass oil	Cymbopogon winterianus Jowitt	8023-92-5	E2.12
0.1	106-24-1	Grapefruit oil,	Citrus paradisi Macf.	68916-46-1	G2.29

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		terpeneless			
0.4	106-24-1	Helichrysum absolute	Helichrysum angustifolium DC.	8023-95-8	E2.1
0.7	106-24-1	Helichrysum oil	Helichrysum angustifolium DC.	8023-95-8	E2.12
0.4	106-24-1	Ho Leaf oil	Cinnamomum camphora (L.) J.Presl	8022-91-1	E2.12
0.2	106-24-1	Hop oil	Humulus lupus L.	8007-04-3	G2.9
0.03	106-24-1	Hyacinth absolute	Hyacinthus orientalis L.	8023-94-7	F2.1
0.1	106-24-1	Jasmine officinale absolute	Jasminum officinale L.	8024-43-9	F2.1
0.1	106-24-1	Juniper berry oil	Juniperus communis L.	8002-68-4	G2.12
0.2	106-24-1	Kumquat oil, Fortunella margarita	Fortunella (Lour.) Swingle	938464-05-2	G2.5
0.05	106-24-1	Laurel leaf oil	Laurus nobilis L	8007-48-5	E2.12
0.3	106-24-1	Lavandin abrialis oil	Lavandula x intermedia abrialis	8022-15-9	F2.12
0.2	106-24-1	Lavandin oil	Lavandula officinalis x Lavandula latifolia	8022-15-9	F2.12
0.9	106-24-1	Lavender absolute	Lavandula angustifolia angustifolia	8000-28-0	F2.1
0.1	106-24-1	Lavender concrete	Lavandula angustifolia angustifolia	8000-28-0	F2.7
0.2	106-24-1	Lavender oil	Lavandula angustifolia angustifolia	8000-28-0	F2.12
0.5	106-24-1	Lavendin super oil	Lavendula super	93685-88-2	F2.12
0.03	106-24-1	Lemon extract	Citrus limon (L.) Burm. f.	84929-31-7	G2.20
1	106-24-1	Lemon oil folded (5X)	Citrus limon (L.) Burm. f.	8008-56-8	G2.6
2	106-24-1	Lemon oil folded (10X)	Citrus limon (L.) Burm. f.	8008-56-8	G2.6
2	106-24-1	Lemon oil terpeneless	Citrus limon (L.) Burm. f.	68648-39-7	G2.29
0.1	106-24-1	Lemon oil, distilled	Citrus limon (L.) Burm. f.	8008-56-8	G2.24
0.1	106-24-1	Lemon oil, expressed	Citrus limon (L.) Burm. f.	8008-56-8	G2.5
0.1	106-24-1	Lemon oil, furocoumarin free	Citrus limon (L.) Burm. f.	68916-89-2	G2.33
0.1	106-24-1	Lemon oil. essence	Citrus limon (L.) Burm. f.	8008-56-8	G2.10
3.8	106-24-1	Lemongrass oil, East Indian	Cymbopogon flexuosus (Nees ex Steudel) Will. Watson	8007-02-1	E2.12

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2.3	106-24-1	Lemongrass oil, West Indian	Cymbopogon citratus (DC) Stapf.	8007-02-1	E2.12
0.03	106-24-1	Lime oil, cold pressed, furocoumarin free	Citrus aurantifolia (Christman) Swingle	68916-83-6	G2.33
1	106-24-1	Linaloe wood oil	Bursera penicillata (DC.) Engl.	8006-86-8	D2.12
1.1	106-24-1	Litsea cubeba oil	Litsea Cubeba(Lour.) Pers.	68855-99-2	G2.12
0.2	106-24-1	Mandarin oil, terpeneless	Citrus reticulata Blanco	68917-20-4	G2.29
0.2	106-24-1	Marjoram oil, Spanish	Origanum mastichina L.	8016-33-9	E2.12
0.3	106-24-1	Marjoram oil, sweet	Origanum majorana L.	8015-01-8	E2.12
0.1	106-24-1	Marjoram oleoresin	Origanum majorana L.	84082-58-6	E2.21
0.4	106-24-1	Michelia alba extract	Michelia x alba DC. (champaca x montana)	8006-76-6	F2.13
0.4	106-24-1	Myrtle oil	Myrtus communis L.	8008-46-6	E2.12
1	106-24-1	Orange blossoms absolute	Citrus aurantium L. spp. Amara Link	8016-38-4	F2.1
2.8	106-24-1	Orange flower oil, bitter (neroli and neroli bigarade)	Citrus aurantium L. spp. Amara Link	8016-38-4	F2.12
10.2	106-24-1	Orange flower water absolute	Citrus aurantium L. spp. Amara Link	8030-28-2	F2.54
1	106-24-1	Orange leaf absolute	Citrus aurantium L. spp. Amara Link	8030-28-2	E2.1
0.04	106-24-1	Orange oil, bitter	Citrus aurantium L. spp. Amara Link	68916-04-1	G2.5
1	106-24-1	Orange peel oil, sweet terpeneless	Citrus sinensis (L.) Osbeck	68606-94-0	G2.29
1	106-24-1	Orange sweet oil folded	Citrus sinensis (L.) Osbeck	8008-57-9	G2.6
1.2	106-24-1	Osmanthus absolute	Osmanthus fragrans Lour.	68917-05-5	F2.1
1.2	106-24-1	Osmanthus concrete	Osmanthus fragrans Lour.	68917-05-5	F2.7
82.4	106-24-1	Palmarosa oil	Cymbopogon martinii (Roxb.) Wats	8014-19-5	E2.12
0.1	106-24-1	Petitgrain bergamot oil	Citrus bergamia (Risso) Wright & Arn.	8007-75-8	E2.12
2.4	106-24-1	Petitgrain	Citrus aurantium	8014-17-3	E2.12

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		bigarade oil	L. spp. Amara Link		
2	106-24-1	Petitgrain lemon oil	Citrus limon (L.) Burm. f.	8048-51-9	E2.12
3	106-24-1	Petitgrain oil terpeneless, Paraguay	Citrus aurantium L. spp. Amara Link	68915-85-5	E2.29
3	106-24-1	Petitgrain oil terpenes, Paraguay	Citrus aurantium L. spp. Amara Link	68917-61-3	E2.30
3	106-24-1	Petitgrain oil, Paraguay	Citrus aurantium L. spp. Amara Link	8014-17-3	E2.12
5	106-24-1	Rose absolute	Rosa x damascena Mill.	90106-38-0	F2.1
2.7	106-24-1	Rose concrete	Rosa x damascena Mill.	90106-38-0	F2.7
20	106-24-1	Rose oil	Rosa x damascena Mill.	8007-01-0	F2.12
0.5	106-24-1	Rose water stronger	Rosa x centifolia L.	8007-01-0	F2.54
0.8	106-24-1	Rosewood oil	Aniba rosaeodora (Ducke) var amazonica	8015-77-8	D2.12
1	106-24-1	Snakeroot oil	Asarum canadense L.	8016-69-1	A2.12
0.2	106-24-1	Tangerine oil terpeneless	Citrus reticulata blanco	68607-01-2	G2.29
0.05	106-24-1	Thyme absolute	Thymus vulgaris L.	8007-46-3	E2.1
0.1	106-24-1	Thyme oil, red	Thymus vulgaris L.	8007-46-3	E2.12
0.1	106-24-1	Thyme oil, white	Thymus vulgaris L.	8007-46-3	E2.12
0.1	106-24-1	Tuberose absolute	Poliantes tuberosa L.	8024-05-3	F2.1
0.1	106-24-1	Tuberose concrete	Poliantes tuberosa L.	8024-05-3	F2.7
4.1	106-24-1	Verbena absolute	Lippia citriodora (L.) Kunth	8024-12-2	E2.1
0.1	106-24-1	Wormwood oil	Artemisia absinthium L.	8008-93-3	E2.12
0.3	106-24-1	Ylang ylang oil I	Cananga odorata (Lam.) Hook. f. &Thomson oil (forma genuine Steenis)	8006-81-3	F2.12.1
1	106-24-1	Ylang ylang oil II	Cananga odorata (Lam.) Hook. f. &Thomson oil (forma genuine Steenis)	8006-81-3	F2.12.2
0.3	106-24-1	Ylang ylang oil III	Cananga odorata (Lam.) Hook. f. &Thomson oil (forma genuine Steenis)	8006-81-3	F2.12.3
1	106-24-1	Ylang, Ylang oil extra	Cananga odorata (Lam.) Hook. f.	8006-81-3	F2.12 X

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			&Thomson oil (forma genuine Steenis)		
1	106-24-1	Ylang, Ylang oil, terpene-free	Cananga odorata (Lam.) Hook. f. &Thomson oil (forma genuine Steenis)	68952-44-3	F2.29

This is a non-exhaustive indicative list of typical natural presence for Geraniol and is intended to be used in the absence of own analytical data. If analysis has shown that the level of the restricted ingredient in a natural complex substance is different from what is provided in this Annex I, then the analytically determined level should be used in place of the indicative level.
It should further be noted that natural complex substances themselves can be restricted by an IFRA Standard.
For a detailed list of natural contributions, please refer to the Annex I of IFRA Standards, publicly available on the IFRA website (www.ifrafragrance.org).

INTRINSIC PROPERTY DRIVING RISK MANAGEMENT:	DERMAL SENSITIZATION

RIFM SUMMARIES:

Recommended concentration levels are based on a comprehensive safety assessment, considering various endpoints. Depending on the outcome of the safety assessment, it might be one or more endpoint(s) that will drive the derivation of the concentration levels. If more than one endpoint is of relevance, the recommended concentration levels for each product category is derived from comparing maximum permitted level per endpoint consideration (dermal sensitization and/or systemic toxicity). Such recommended concentration levels correspond to the lowest level obtained per category.

Additional information is available in the RIFM safety assessment for Geraniol, which can be downloaded from the RIFM Safety Assessment Sheet Database: http://fragrancematerialsafetyresource.elsevier.com/.

EXPERT PANEL FOR FRAGRANCE SAFETY RATIONALE / CONCLUSION:

The Expert Panel for Fragrance Safety reviewed all the available data for Geraniol and recommends the limits for the 12 different product categories, which are the acceptable use levels of Geraniol in the various product categories.

REFERENCES:

The IFRA Standard on Geraniol is based on at least one of the following publications:

• The RIFM Safety Assessment on Geraniol 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.,

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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 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.