3 and 4-(4-Hydroxy-4-methylpentyl)-3-cyclohexene-1-carboxaldehyde (HMPCC)

CAS N°:	31906-04-4 51414-25-6	**Empirical formula:**	$C_{13}H_{22}O_2$
Synonyms:	3-Cyclohexen-1-carboxaldehyde, 4-(4-hydroxy-4-methylpentyl)- 3-Cyclohexen-1-carboxaldehyde, 3-(4-hydroxy-4-methylpentyl)- Hydroxyisohexyl 3-cyclohexene carboxaldehyde (INCI) 4-(4-Hydroxy-4-methylpenyl) cyclohex-3-enecarbaldehyde 3-(4-Hydroxy-4-methylpentyl) cyclohex-3-ene-1-carbaldehyde Lyral, Kovanol, Mugonal, Landolal, Cyclohexal (trade names)		

History:	Initial reviews:	April 2003, July 2008, October 2009	
	Current revision date:	June 2013	
	Implementation date:	For new submissions*:	August 10, 2013
		For existing fragrance compounds*:	August 10, 2014
	Next review date	2018	

* This date applies to the supply of fragrance compounds (formulas) only, not to the finished products in the marketplace.

RECOMMENDATION:	**RESTRICTED**

RESTRICTIONS:

Limits in the finished product:			
Category 1 See Note box (1)	0.02 %	Category 7	0.02 %
Category 2	0.02 %	Category 8	0.2 %
Category 3	0.2 %	Category 9	0.2 %
Category 4	0.2 %	Category 10	0.2 %
Category 5	0.2 %	Category 11	See Note box (2)
Category 6	0.2 %		

Note box:

(1) IFRA would recommend that any material used to impart perfume or flavour in products intended for human ingestion should consist of ingredients that are in compliance with appropriate regulations for foods and food flavourings in the countries of planned distribution and, where these are lacking, with the recommendations laid down in the Code of Practice of IOFI (International Organisation of the Flavor Industry - www.iofiorg.org).
(2) Category 11 includes all non-skin contact or incidental skin contact products. Due to the negligible skin contact from these types of products there is no justification for a restriction of the concentration of this fragrance ingredient in the finished product.
The restrictions as given for the individual categories are NOT based on the QRA but solely represent a pragmatic approach to address the specific situation for HMPCC. These pragmatic measures will be reviewed over time in view of the development of sensitization rates (clinical data) to the material.

Fragrance material specifications:	N/A

CONTRIBUTION FROM OTHER SOURCES:

See **Annex II**

3 and 4-(4-Hydroxy-4-methylpentyl)-3-cyclohexene-1-carboxaldehyde (HMPCC)

CRITICAL EFFECT:	SENSITIZATION

RIFM SUMMARIES:

See Note Box

REXPAN RATIONALE / CONCLUSION:

The RIFM Expert Panel approved the pragmatic approach proposed by IFRA.