



**CERTIFICATE OF ANALYSIS
ALDEHYDE C-11 UNDECANAL**

CAS#: 112-44-7

FEMA#: 3092

PRODUCT IDENTIFICATION

PRODUCT NAME	ALDEHYDE C-11 UNDECANAL		
BATCH NO	4413708		
BEST BEFORE END	NOVEMBER 2022		
MOLECULAR FORM	C ₁₁ H ₂₂ O		
MOLECULAR WT	170.30		
MELTING POINT (C)			
BOILING POINT (C)	223	deg	C
FLASH POINT (F)	205	deg	F
SHELF LIFE (DAYS)	730		

PHYSICAL SPECIFICATIONS

APPEARANCE	RANGE	RESULTS
ODOR	CLEAR, ALMOST COLOURLESS LIQUID	CONFORMS
SPECIFIC GRAVITY (25C)	STRONG ALDEHYDIC, WAXY	CONFORMS
REFRACTIVE INDEX (20C)	0.8230 to 0.8330	0.8297
ANALYTICAL SPECIFICATIONS	1.4280 to 1.4350	1.4331
PURITY (BY GC)	RANGE	RESULTS
OTHER SPECIFICATIONS	98.0% MINIMUM	99.56%
ACID VALUE (mGKOH/g)	RANGE	RESULTS
STABILITY	5.0 MAX	0.78

STABLE UNDER NORMAL CONDITIONS

STORAGE

STORE IN COOL DRY PLACE AWAY FROM HEAT AND SUNLIGHT.
SHELF LIFE CONSIDERATIONS APPLY ONLY FOR ORIGINAL UNOPENED CONTAINERS

FRAGRANCE ALLERGENS

ALDEHYDE C-11

Contains the following fragrance allergens as detailed in the 7th Amendment to the EU Cosmetic Directive 76/768/EEC:

	Allergen	CAS number	Content %
1	Alpha isomethylionone	127-51-5	-
2	Amyl cinnamal	122-40-7	-
3	Amylcinnamyl alcohol	101-85-9	-
4	Anisyl alcohol	105-13-5	-
5	Benzyl alcohol	100-51-6	-
6	Benzyl benzoate	120-51-4	-
7	Benzyl cinnamate	103-41-3	-
8	Benzyl salicylate	118-58-1	-
9	Butylphenyl methylpropional (Lilial)	80-54-6	-
10	Cinnamal	104-55-2	-
11	Cinnamyl alcohol	104-54-1	-
12	Citral	5392-40-5	-
13	Citronellol	106-22-9	-
14	Coumarin	91-64-5	-
15	Eugenol	97-53-0	-
16	Farnesol	4602-84-0	-
17	Geraniol	106-24-1	-
18	Hexyl cinnamal	101-86-0	-
19	Hydroxycitronellal	107-75-5	-
20	Hydroxyisohexyl 3-cyclohexene carboxaldehyde (Lyral)	31906-04-4	-
21	Isoeugenol	97-54-1	-
22	Limonene	5989-27-5	-
23	Linalool	78-70-6	-
24	Methyl 2-octynoate	111-12-6	-
25	Evernia furfuracea (Treemoss) extract	90028-67-4	-
26	Evernia prunastri (Oakmoss) extract	90028-68-55	-

(All absent)



GMO CERTIFICATE

MADAR Corporation Ltd hereby certifies that:

ALDEHYDE C-11

to the best of its knowledge does not derive from a genetically modified source (GMO) as specified in Regulation (EC) No 1829/2003 nor have GMO materials been used in its manufacture or as additives.

Date of issue: 05/12/2018

IFRA CERTIFICATE

ALDEHYDE C-11

MADAR Corporation Ltd hereby certifies that the above material complies with the requirements of the INTERNATIONAL FRAGRANCE ASSOCIATION - IFRA-48th Amendment / published June 10th 2015) provided it is used in following application (class) at a maximum concentration level of:

IFRA category	Maximum level of use (%)
Class 1	Not restricted
Class 2	Not restricted
Class 3A	Not restricted
Class 3B	Not restricted
Class 3C	Not restricted
Class 3D	Not restricted
Class 4A	Not restricted
Class 4B	Not restricted
Class 4C	Not restricted
Class 4D	Not restricted
Class 5	Not restricted
Class 6	Not restricted
Class 7A	Not restricted
Class 7B	Not restricted
Class 8A	Not restricted
Class 8B	Not restricted
Class 9A	Not restricted
Class 9B	Not restricted
Class 9C	Not restricted
Class 10A	Not restricted
Class 10B	Not restricted
Class 11	Not restricted

The above values were calculated based on the following IFRA restricted materials: <none contained>

The IFRA Standards regarding use restrictions are based on safety assessments by the Panel of Experts of the RESEARCH INSTITUTE FOR FRAGRANCE MATERIALS (RIFM) and are enforced by the IFRA Scientific Committee.

It is the ultimate responsibility of our customer to ensure the safety of the final product by further testing if need be. Evaluation of the Fragrance ingredient was made according to the safety requirements contained in the relevant section of the IFRA Code of Practice.

IFRA category includes	IFRA category
Toys (****)	Class 1A
Insect Repellent intended to be applied on the skin	Class 1B
Lip Products of all types (solid and liquid lipsticks, balms, clear or coloured etc...)(****)	Class 2
Deodorant and Antiperspirant products of all types (spray, stick, roll-on, under-arm and body etc...)	Class 3A
Hydroalcoholic products applied to recently shaved skin (EdT range)	Class 3B
Hydroalcoholic products applied to recently shaved skin (fine fragrance range)	Class 3C
Eye Products of all types (eye shadow, mascara, eyeliner, eye make-up, etc...)	Class 3D
Men's Facial Creams, Balms, Wipes, Refreshing Tissues	Class 4A
Tampons	Class 4B
Hydroalcoholic Products applied to unshaved skin (EdT range)	Class 4C
Ingredients of Perfume Kits, Scent Strips for Hydroalcoholic Products, "scratch and sniff", other paper products	Class 4D
Hydroalcoholic Products applied to unshaved skin, Fine Fragrance range	Class 5A
Hair Styling Aids Sprays of all types (pumps, aerosol sprays, etc...). Hair Deodorant	Class 6
Body Creams, Oils, Lotions of all types (including baby creams, lotions, oils)	Class 7
Fragrance Compounds for Cosmetic Kits, Foot Care Products	Class 8
Fragrancing Creams of all types	Class 9A
Women's Facial Creams/Facial Make-up/Facial Wipes. Facial Masks, Hand Cream	Class 9B
Mouthwash, Toothpaste (****)	Class 9C
Intimate Wipes, Baby Wipes	Class 10A
Make-up Removers of all types (not including face cleansers)	Class 10B
Hair Styling Aids Non-Spray of all types (mousse, gels, leave-in conditioners etc...)	Class 10B
Nail Care, all Powders & Talcs (including baby powders and talcs)	Class 10B
Liquid Soap, Bar Soap (toilet soap), Depilatory,	Class 11A
Conditioner (rinse-off), Shampoos of all types (including baby shampoos)	Class 11A
Face Cleansers of all types (washes, gels, scrubs, etc...) Shaving Creams of all types (stick, gels, foams, etc...)	Class 11A
Body Washes of all types (including baby washes) and Shower Gels of all types	Class 11A
Bath Gels, Foams, Mousses, Salts, Oils and other products added to bathwater	Class 11A
Feminine pads/Liners	Class 11A
Aerosols (including air fresheners sprays but not including deodorant/antiperspirants, hair styling aids spray)	Class 11A
Hand wash/Machine Wash Laundry Detergents of all types (liquid, powder, tablet, etc...) including Laundry Bleaches	Class 11A
Other Household Cleaning Products (fabric cleaners, soft surface cleaners, carpet cleaners etc...), Dry Cleaning Kits	Class 11A
Fabric Softeners of all types including softener sheets. Hand Dishwashing Detergent.	Class 11A
Hard Surface Cleaners of all types (bathroom and kitchen cleansers, furniture polish etc...), Shampoos for pets	Class 11A
Diapers	Class 11A
All non-skin contact, including:	Class 11A
Air Fresheners and fragrancing of all types (excluding aerosol products): plug-ins, solid substrate, membrane delivery; Toilet blocks; Joss Sticks, Incense; Insecticides (mosquito coil, paper, electrical, etc...excluding aerosols); Plastic articles (excluding toys); Candles; Fuels; Paints.	Class 11A
All incidental skin contact, including:	Class 11B
Machine Dish wash Detergents and Deodorizers. Machine only Laundry Detergents (e.g. liquid tabs)	Class 11B
Deodorizers/Maskers (e.g. fabric drying machine deodorizers, carpet powder)	Class 11B
Pot pourri, fragrancing sachets, liquid refills for air fresheners, etc...	Class 11B
Shoe polishes; Cat Litter; Animal Sprays (excluding aerosols); Treated Textiles; Odoured Distilled Water	Class 11B

(****) Fragrance materials for use in these applications need also FEMA-GRAS conformity.



CERTIFICATE OF ORIGIN

MADAR Corporation Ltd hereby certifies that:

ALDEHYDE C-11

Originates from and is produced in the UK.

Date of issue: 14/12/2018



Safety Data Sheet

This safety data sheet complies with the requirements of:
Regulation (EC) No. 1907/2006 and Regulation (EC) No. 1272/2008

Product name ALDEHYDE C-11

Issue date 09-Jun-2016

Revision date 05-Dec-2018

Version 3

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product Identifier

<i>Product name</i>	ALDEHYDE C-11
REACH registration number	01-2119529242-47-0005
EC No.	203-972-6
CAS No	112-44-7
Chemical Name	Undecanal
Pure substance/mixture	Substance
Formula	C ₁₁ H ₂₂ O
Molecular weight	170.3

1.2. Relevant identified uses of the substance or mixture and uses advised against

Sold to the general public?	No
Recommended Use	Industry Use
Uses advised against	No information available

1.3. Details of the supplier of the safety data sheet

Supplier

MADAR Corporation Ltd, 19-20 Sandleheath Industrial Estate, Fordingbridge, Hampshire SP6 1PA

For further information, please contact

E-mail address technical@madarcorporation.co.uk

1.4. Emergency telephone number

Emergency telephone 01425 655555

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Regulation (EC) No 1272/2008

Skin corrosion/irritation	Category 2 - (H315)
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2.2. Label Elements

Product identifier

**Signal word**

Warning

Hazard statements

H315 - Causes skin irritation

Precautionary Statements

P280 - Wear protective gloves/protective clothing/eye protection/face protection

P302 + P352 - IF ON SKIN: Wash with plenty of soap and water

P333 + P313 - If skin irritation or rash occurs: Get medical advice/attention

2.3. Other Hazards

H401 - Toxic to aquatic life

SECTION 3: Composition/information on ingredients

3.1 Substances**Chemical nature**

Aliphatic aldehyde.

Chemical Name	EC No.	CAS No.	Weight-%	Classification according to Regulation (EC) No. 1272/2008 [CLP]	REACH registration number
Undecanal	203-972-6	112-44-7	100	Aquatic Acute 2 (H401) (ECHA) Skin Irrit. 2 (315) (ECHA)	No data available

Full text of H- and EUH-phrases: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures**Inhalation**

Remove to fresh air.

Skin contact

IF ON SKIN: Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention.

Eye Contact

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

Ingestion

IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.

4.2. Most important symptoms and effects, both acute and delayed**Symptoms**

None known.

4.3. Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable Extinguishing Media

Use Dry chemical, CO₂, water spray or alcohol-resistant foam

Unsuitable extinguishing media

Do not use a solid water stream as it may scatter and spread fire

5.2. Special hazards arising from the substance or mixture

Thermal decomposition can lead to release of irritating and toxic gases and vapors

Hazardous combustion products Irritating or toxic substances may be emitted upon burning, combustion, or decomposition.

5.3. Advice for firefighters

Wear self-contained breathing apparatus and protective suit. Use personal protective equipment as required.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions

Avoid contact with skin, eyes or clothing. Use personal protection recommended in Section 8. Stop leak if you can do it without risk.

For emergency responders

Use personal protection recommended in Section 8.

6.2. Environmental precautions

Collect spillage.

6.3. Methods and material for containment and cleaning up

Methods for Containment

Contain and collect spillage with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see Section 13).

Methods for cleaning up

Cover liquid spill with sand, earth or other non-combustible absorbent material. Use personal protective equipment as required. Take up mechanically, placing in appropriate containers for disposal. Clean contaminated surface thoroughly.

6.4. Reference to other sections

See Section 12: ECOLOGICAL INFORMATION.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

Avoid contact with skin, eyes or clothing. Ensure adequate ventilation, especially in confined areas. Use personal protection recommended in Section 8.

General hygiene considerations

Do not eat, drink or smoke when using this product. Avoid contact with skin, eyes or clothing. Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities

Storage Conditions

Protect from direct sunlight. Keep containers tightly closed in a dry, cool and well-ventilated place.

7.3. Specific end use(s)

Risk Management Methods (RMM)

The information required is contained in this Material Safety Data Sheet.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Derived No Effect Level (DNEL)	Workers
dermal	8.3 mg/kg bw/day
Inhalation	59 mg/m ³
Derived No Effect Level (DNEL)	General Population
oral	4.2 mg/kg bw/day
dermal	4.2 mg/kg bw/day
Inhalation	14.5 mg/m ³
Predicted No Effect Concentration (PNEC)	
Fresh Water	0.003 mg/L
Sea Water	0 mg/L
Sea sediment	0.004 mg/kg sediment dw
Soil	0.006 mg/kg soil dw
Impact on Sewage Treatment	5.5 mg/L

8.2. Exposure controls

Engineering controls	Showers Eyewash stations Ventilation systems
Personal Protective Equipment	
Eye/Face Protection	Wear safety glasses with side shields (or goggles).
Hand protection	Wear protective gloves.
Skin and Body Protection	Wear suitable protective clothing.
Respiratory protection	No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.
Environmental exposure controls	Prevent product from entering drains.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Liquid	Odor	Characteristic Odor
Appearance	Colorless to Pale Yellow	Odor threshold	Not applicable
Color	Not applicable		

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH		
Melting point / freezing point	-10 °C / 14 °F	
Boiling point / boiling range	225 °C / 437 °F	
Flash Point	> 96 °C / > 205 °F	
Evaporation Rate		
Flammability (solid, gas)		
Flammability Limit in Air		
Upper flammability limit:		
Lower flammability limit:		
Vapor pressure	0.038kPa	(20°C)
Vapor Density		
Specific gravity	0.823 - 0.833	(25°C)
Water solubility	0.12 g/L	(20°C)
solubility(ies)		
Partition coefficient	Log Pow - 3.84	n-octanol/water
Autoignition Temperature	200 °C / 392 °F	
Decomposition temperature		
Kinematic viscosity		
Dynamic viscosity	2.295 mPa s	(20°C)
Explosive properties	Not an explosive	
Oxidizing properties	Not oxidising	

9.2. Other information

Molecular weight	170.3
VOC content (%)	Not applicable
Density	828.3 kg/m ³
Bulk Density	Not applicable

SECTION 10: Stability and reactivity**10.1. Reactivity****10.2. Chemical stability**

Stable under recommended storage conditions.

Explosion data

Sensitivity to Mechanical Impact	None.
Sensitivity to Static Discharge	None.

10.3. Possibility of hazardous reactions**Possibility of Hazardous Reactions**

None under normal processing.

10.4. Conditions to avoid

Extremes of temperature and direct sunlight.

10.5. Incompatible materials

No information available.

10.6. Hazardous decomposition products

None under normal use conditions.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity

Product Information

Harmful if inhaled.

Inhalation	No known hazard by inhalation.
Eye Contact	Avoid contact with eyes.
Skin contact	Avoid contact with skin. Irritating to skin.
Ingestion	No known hazard by swallowing.

The following values are calculated based on chapter 3.1 of the GHS document

Unknown acute toxicity

0 % of the mixture consists of ingredient(s) of unknown acute oral toxicity.

0 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity.

Oral LD50	> 5,000 mg/kg
Dermal LD50	> 5,000 mg/kg

Skin corrosion/irritation Irritating to skin.

Serious eye damage/eye irritation Not applicable.

Sensitization Not expected to cause skin sensitization.

Germ cell mutagenicity None known.

Carcinogenicity None known.

Reproductive toxicity This product does not contain any known or suspected reproductive hazards above the threshold value.

Developmental toxicity None known.

STOT - single exposure Not classified.

STOT - repeated exposure Not classified.

Neurological Effects None known.

Target organ effects No known effects under normal use conditions.

Aspiration hazard Not classified.

SECTION 12: Ecological information

12.1. Toxicity

Toxic to aquatic life

0 % of the mixture consists of component(s) of unknown hazards to the aquatic environment

Chemical Name	Crustacea	Algae/aquatic plants	Fish
Undecanal	48hr EC50/LC50 - 2.5 mg/L (Daphnia magna)	72hr EC50/LC50 - 4.37 mg/L, 72hr EC10, LC10 or NOEC - 1.49 mg/L (Desmodesmus subspicatus)	96hr LC50 - 6 mg/L (Danio rerio)

12.2. Persistence and degradability

Rapidly biodegradable.

12.3. Bioaccumulative potential

Low potential for bioaccumulation.

Bioconcentration factor (BCF) 158.7

Chemical Name	Partition coefficient
Undecanal	3.84

12.4. Mobility in soil**Mobility in soil**

Log Koc - 2.1

12.5. Results of PBT and vPvB assessment

This substance is not considered to be persistent, bioaccumulating nor toxic (PBT). This substance is not considered to be very persistent nor very bioaccumulating (vPvB).

12.6. Other adverse effects

No information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste from Residues/Unused Products	Disposal should be in accordance with applicable regional, national and local laws and regulations.
Contaminated packaging	Do not reuse container. Improper disposal or reuse of this container may be dangerous and illegal.

SECTION 14: Transport information

IMDG

14.1 UN/ID no	Not regulated
14.2 Proper Shipping Name	Not regulated
14.3 Hazard Class	Not regulated
14.4 Packing group	Not regulated
14.5 Marine pollutant	Not applicable
14.6 Special Provisions	None
14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	No information available

RID

14.1 UN/ID no	Not regulated
14.2 Proper Shipping Name	Not regulated
14.3 Hazard Class	Not regulated
14.4 Packing group	Not regulated
14.5 Environmental hazard	Not applicable
14.6 Special Provisions	None

ADR

14.1 UN/ID no	Not regulated
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14.2 Proper Shipping Name	Not regulated
14.3 Hazard Class	Not regulated
14.4 Packing group	Not regulated
14.5 Environmental hazard	Not applicable
14.6 Special Provisions	None

ICAO (air)

14.1 UN/ID no	Not regulated
14.2 Proper Shipping Name	Not regulated
14.3 Hazard Class	Not regulated
14.4 Packing group	Not regulated
14.5 Environmental hazard	Not applicable
14.6 Special Provisions	None

IATA

14.1 UN/ID no	Not regulated
14.2 Proper Shipping Name	Not regulated
14.3 Hazard Class	Not regulated
14.4 Packing group	Not regulated
14.5 Environmental hazard	Not applicable
14.6 Special Provisions	None

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

European Union

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work

Authorization and/or restrictions on use:

This product does not contain substances subject to authorization (Regulation (EC) No. 1907/2006 (REACH), Annex XIV) This product does not contain substances subject to restriction (Regulation (EC) No. 1907/2006 (REACH), Annex XVII)

Persistent Organic Pollutants

Not applicable

Ozone-depleting substances (ODS) regulation (EC) 1005/2009 Not applicable

15.2. Chemical safety assessment

No information available

SECTION 16: Other information

Full text of H-Statements referred to under section 3

H401 - Toxic to aquatic life

Key literature references and sources for data

Key Source: European Chemicals Agency, <http://echa.europa.eu>

Issue date	09-Jun-2016
Revision date	05-Dec-2018
Revision note	Not applicable.

This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. Classification and labeling according to the IFRA/IOFI Labeling Manual 2017.

End of Safety Data Sheet



PRODUCT SPECIFICATION

CAS#: 112-44-7

FEMA#: 3092

PRODUCT IDENTIFICATION

PRODUCT NAME	ALDEHYDE C-11 UNDECANAL
MOLECULAR FORM	C ₁₁ H ₂₂ O
MOLECULAR WT	170.30
MELTING POINT (C)	
BOILING POINT (C)	223 deg C
FLASH POINT (F)	205 deg F
SHELF LIFE (DAYS)	730

PHYSICAL SPECIFICATIONS	RANGE	METHOD
APPEARANCE	CLEAR, ALMOST COLOURLESS LIQUID	VISUAL
ODOR	STRONG ALDEHYDIC, WAXY	ORGANOLEPTIC
SPECIFIC GRAVITY (25C)	0.8230 to 0.8330	FCC METHOD
REFRACTIVE INDEX (20C)	1.4280 to 1.4350	FCC METHOD

ANALYTICAL SPECIFICATIONS	RANGE	METHOD
PURITY (BY GC)	98.0% MINIMUM	GC-MS

OTHER SPECIFICATIONS	RANGE	METHOD
ACID VALUE (mGKOH/g)	5.0 MAX	FCC METHOD

STABILITY

STABLE UNDER NORMAL CONDITIONS

STORAGE

STORE IN COOL DRY PLACE AWAY FROM HEAT AND SUNLIGHT.
SHELF LIFE CONSIDERATIONS APPLY ONLY FOR ORIGINAL UNOPENED CONTAINERS

Date Revised: 01/07/2018



VEGAN / VEGETARIAN DECLARATION

MADAR Corporation Ltd. hereby certifies that:

ALDEHYDE C-11

to the best of our knowledge is suitable for both vegan and vegetarian diets.

Date of issue: 05/12/2018