

Safety Data Sheet

according to 1907/2006/EC, Article 31

Printing date 24.08.2010

Revision: 24.08.2010

1 Identification of substance**Product details****Trade name****gamma-Undecanolactone****Stock number:**

L16028

Manufacturer/Supplier:Alfa Aesar GmbH & Co.KG
Benzstrasse 3
D-76185 Karlsruhe / GermanyE-mail: gcat@matthey.com
www.alfa-chemcat.com**Informing department:**

Product safety department.

Emergency information:Giftnotruf Universität Mainz / Poison Information Center Mainz
www.giftnotruf.uni-mainz.de Telefon: +49(0)6131/19240**2 Hazards identification****Hazard designation:**

Xi Irritant

Information pertaining to particular dangers for man and environment GHS label elements

R 36/38 Irritating to eyes and skin.

**Warning**

H315 - Causes skin irritation.

H319 - Causes serious eye irritation.

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

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

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P321 Specific treatment (see on this label).

P332+P313 If skin irritation occurs: Get medical advice/attention.

P362 Take off contaminated clothing and wash before reuse.

Prevention:**Response:****3 Composition/information on ingredients****Chemical characterization:**

gamma-Undecanolactone (CAS# 104-67-6)

Designation: (CAS#)**Identification number(s):**

203-225-4

EINECS Number:**4 First aid measures****After inhalation**

Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.

After skin contactSeek immediate medical advice.
Instantly wash with water and soap and rinse thoroughly.**After eye contact**

Seek immediate medical advice.

After swallowingRinse opened eye for several minutes under running water. Then consult doctor.
Seek immediate medical advice.**5 Fire fighting measures****Suitable extinguishing agents**

CO2, extinguishing powder or water jet. Fight larger fires with water jet or alcohol-resistant foam.

Special hazards caused by the material, its products of combustion or flue gases:Can be released in case of fire:
Carbon monoxide and carbon dioxide
Wear self-contained breathing apparatus.
Wear full protective suit.**Protective equipment:****6 Accidental release measures****Person-related safety precautions:**

Wear protective equipment. Keep unprotected persons away.

Measures for environmental protection:

Ensure adequate ventilation

Measures for cleaning/collecting:Do not allow material to be released to the environment without proper governmental permits.
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Ensure adequate ventilation.**Additional information:**See Section 7 for information on safe handling
See section 8 for information on personal protection equipment.
See Section 13 for information on disposal.**7 Handling and storage****Handling****Information for safe handling:**Keep containers tightly sealed.
Store in cool, dry place in tightly closed containers.
Ensure good ventilation/exhaustion at the workplace.**Information about protection against explosions and fires:**

Keep ignition sources away - Do not smoke.

Storage**Requirements to be met by storerooms and containers:**

No special requirements.

Information about storage in one common storage facility:

Store away from oxidizing agents.

Further information about storage conditions:Keep container tightly sealed.
Store in cool, dry conditions in well sealed containers.**8 Exposure controls and personal protection****Additional information about design of technical systems:**

Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

Components with critical values that require monitoring at the workplace:

Not required.

Additional information:

No data

Personal protective equipment**General protective and hygienic measures**The usual precautionary measures should be adhered to in handling the chemicals.
Keep away from foodstuffs, beverages and food.
Instantly remove any soiled and impregnated garments.
Wash hands during breaks and at the end of the work.
Do not inhale gases / fumes / aerosols.
Avoid contact with the eyes and skin.(Contd. on page 2)
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Breathing equipment:	Use breathing protection with high concentrations.
Protection of hands:	Check protective gloves prior to each use for their proper condition.
Material of gloves	The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.
	Impervious gloves
Penetration time of glove material	Not determined
Eye protection:	Safety glasses
	Face protection
Body protection:	Protective work clothing.

9 Physical and chemical properties:**General Information**

Form:	Liquid
Colour:	Colourless
Smell:	Not determined
Change in condition	
Melting point/Melting range:	Not determined
Boiling point/Boiling range:	164-166°C (13 mmHg)
Sublimation temperature / start:	Not determined
Flash point:	156°C
Ignition temperature:	Not determined
Decomposition temperature:	Not determined
Danger of explosion:	Product is not explosive.
Critical values for explosion:	
Lower:	Not determined
Upper:	Not determined
Steam pressure:	Not determined
Density at 20°C	0.949 g/cm ³
Solubility in / Miscibility with Water:	Not miscible or difficult to mix

10 Stability and reactivity

Thermal decomposition / conditions to be avoided:	No decomposition if used and stored according to specifications.
Materials to be avoided:	Oxidizing agents
Dangerous reactions:	No dangerous reactions known
Dangerous products of decomposition:	Carbon monoxide and carbon dioxide

11 Toxicological information**Acute toxicity:****LD/LC50 values that are relevant for classification:**

Oral	LD50	18500 mg/kg (rat)
Irritation of skin	severe	100 mg/24H (rabbit)

Primary irritant effect:

on the skin: Irritant for skin and mucous membranes.

on the eye: Irritant effect.

Sensitization: No sensitizing effect known.

Other information (about experimental toxicology):

Additional toxicological information: Mutagenic effects have been observed on tests with bacteria.

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.

12 Ecological information:**Additional ecological information:**

General notes:	Generally not hazardous for water. Do not allow material to be released to the environment without proper governmental permits.
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13 Disposal considerations

Product:	
Recommendation	Hand over to disposers of hazardous waste. Must be specially treated under adherence to official regulations. Consult state, local or national regulations for proper disposal.
Uncleaned packagings:	
Recommendation:	Disposal must be made according to official regulations.

14 Transport information**Land transport ADR/RID and GGVS/GGVE (cross-border/domestic)**

ADR/RID-GGVS/E Class: None

Maritime transport IMDG/GGVSea:

IMDG/GGVSea Class: None

Marine pollutant: No

Air transport ICAO-TI and IATA-DGR:

ICAO/IATA Class: None

Transport/Additional information: Not dangerous according to the above specifications.

15 Regulatory information**Designation according to EC guidelines:**

Code letter and hazard designation of product:



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Risk phrases:	36/38 Irritating to eyes and skin.
Safety phrases:	23 Do not breathe fumes. 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. 37 Wear suitable gloves.
National regulations	
Information about limitation of use:	Employment restrictions concerning young persons must be observed. For use only by technically qualified individuals.
Water hazard class:	Generally not hazardous for water.

16 Other information:

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

Department issuing data specification sheet: Health, Safety and Environmental Department.**Contact:** Zachariah Holt**Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
ICAO: International Civil Aviation Organization
ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)
GHS: Globally Harmonized System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent

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