

## GPS Safety Summary

**Substance Name:**

**Heptanoic Acid**

### 1. General Statement

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Heptanoic acid is produced to be used in the form of esters primarily for industrial lubricants due to its good corrosion properties and unique performance level at both high and low temperatures (refrigeration lubricants, aviation, automobile...).

It can also be used in the form of esters in the flavors and fragrances industry, and in cosmetics.

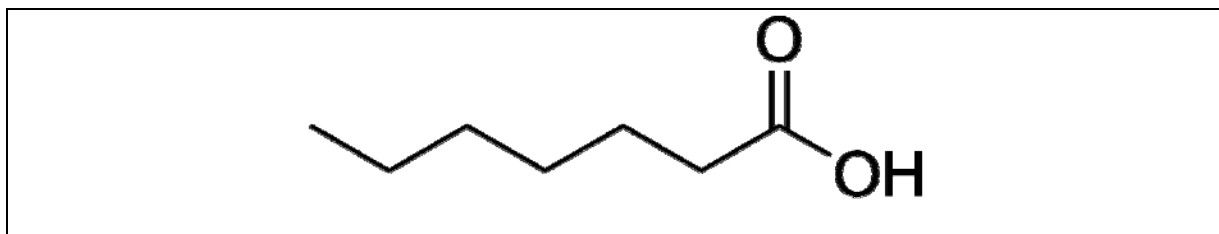
In the form of salts (sodium heptanoate) it is used for corrosion inhibition.

The substance is manufactured and handled in industrial settings.

### 2. Chemical Identity

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<b>Name:</b>	Heptanoic Acid
<b>Brand names:</b>	n-Heptanoic Acid
<b>Chemical name (IUPAC):</b>	Heptanoic Acid
<b>CAS number(s):</b>	111-14-8
<b>EC number:</b>	203-838-7
<b>Molecular formula:</b>	C <sub>7</sub> H <sub>14</sub> O <sub>2</sub>
<b>Structure:</b>	



### 3. Use and applications

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Heptanoic acid is used as a chemical intermediate in the synthesis of heptanoic acid derivatives for various industrial purposes.

### 4. Physical / Chemical properties

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Heptanoic acid is a colourless oily liquid with the following physical/chemical properties:

Property	Value
Form	Oily
Physical state	Liquid
Colour	Clear, colourless

Odour	Characteristic
Density	0,92 g/cm <sup>3</sup> at 20°C
Melting point	-8°C at 1013 hPa
Boiling point	223°C at 1013 hPa
Flammability	Not flammable
Explosive / oxidizing properties	Not expected based on its structure
Self-ignition temperature	275°C at 999 hPa
Vapour pressure	1,349 Pa at 20°C
Mol weight	130,2 g/mol
Water solubility	1,96 g/L to 5,32 g/L
Flash point	117°C at 1013 hPa
Octanol-water partition coefficient (LogKow)	2,54 at 20°C

## 5. Health Effects

Effect Assessment	Result
Acute Toxicity Oral / inhalation / dermal	<i>Oral and dermal:</i> Not relevant as the substance is corrosive: risk of burns in the mouth, the throat, the stomach and on skin. <i>Inhalation:</i> Harmful by inhalation.
Irritation / corrosion Skin / eye/ respiratory tract	Based on the available test data: Corrosive to skin and eyes. Irritant to the respiratory system.
Sensitisation	Based on the available test data, not expected to cause allergic skin reactions.
Toxicity after repeated exposure Oral / inhalation / dermal	Based on the available test data, not expected to cause significant toxicity after repeated exposure.
Genotoxicity / Mutagenicity	Based on the available test data, not expected to cause genetic effects.
Carcinogenicity	Based on the information from the repeated exposure and reproduction studies, not expected to cause cancer under normal conditions of use.
Toxicity for reproduction	Based on the available test data, not expected to cause adverse effects on reproduction.

## 6. Environmental Effects

Effect Assessment	Result
Aquatic Toxicity	Slightly harmful to aquatic life.

Fate and behaviour	Result
Biodegradation	Based on the available test data: readily biodegradable.
Bioaccumulation potential	Based on the estimated log Kow (log Kow=2,54), low potential for bioaccumulation.
PBT / vPvB conclusion	Not considered to be PBT nor vPvB.

## 7. Exposure

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### 7.1 Human health

Considering the life cycle of the substance (manufacture and use as intermediate of synthesis) consumers will not come into contact with heptanoic acid.

Worker exposure can occur in facilities manufacturing or using the substance. Worker activities are mainly undertaken in closed systems resulting in a low exposure. However when workers are exposed, during handling, loading, sampling or maintenance operations, they should follow the recommended safety measures in the extended Safety Data Sheet (eSDS). Given the corrosive properties of the substance, special attention should be paid to avoid skin and eye contact.

### 7.2 Environment

Emissions of heptanoic acid to the environment may occur during production and use of the substance. As the substance is soluble and has a low potential for adsorption its main target compartment in the environment will be the water compartment where it is not expected to persist as it is readily biodegradable.

Due to its low vapour pressure heptanoic acid has a low potential for volatilisation.

Based on its low potential for bioaccumulation, heptanoic acid is not expected to pose a risk to the food chain.

## 8. Risk Management recommendations

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Human health measures		
<b>Organizational</b>	Implement good basic standards of occupational hygiene. Ensure operatives are well informed of the hazards and trained to minimise exposures. Refer to the latest available extended safety data sheet (eSDS).	
<b>Engineering controls</b>	Should be handled in well ventilated areas. Provide appropriate local exhaust ventilation at points of emission. Ensure that eye- and handwash stations and safety showers are close to workstation locations.	
<b>Protection</b>	<b>Eye/Face protection:</b>	Safety glasses with side-shields
	<b>Skin protection:</b>	Protective suit (cotton)
	<b>Hand protection:</b>	Acid resistant gloves (PVC) tested to standard EN374
	<b>Respiratory protection:</b>	In case of insufficient ventilation, wear suitable respiratory equipment: respirator with combination filter for vapor /particulate (EN 141)
Environment protective measures		
Do not release into the environment. Do not let product enter drains. Dam up with inert material. Destroy absorbed product in accordance with local and national regulations.		

## 9. Regulatory Information / Classification and Labelling

### 9.1 Regulatory Information



This substance has been registered under:

- EU Regulation EC 1907/2006 (REACH)
- Sponsored in the EPA HPV program

### 9.2 Classification and labelling

Under GHS substances are classified according to their physical, health, and environmental hazards. The hazards are communicated via specific labels and the eSDS. GHS attempts to standardize hazard communication so that the intended audience (workers, consumers, transport workers, and emergency responders) can better understand the hazards of the chemicals in use. Substances registered for REACH are classified according CLP (EC) 1272/2008, implementation of the GHS in the European Union.

The substance is subject to harmonised classification under the EU Classification Labelling and Packaging (CLP) Regulation EC/1272/2008. Based on the available data, industry has proposed a more stringent self-classification, as follows:

Classification	
According to REGULATION (EC) n° 1272/2008: <ul style="list-style-type: none"><li>– Acute Toxicity; Category 4; Harmful if inhaled.</li><li>– Skin Corrosion; Category 1B; Causes severe skin burns and eye damage.</li><li>– Eye Damage; Category 1; Causes serious eye damage.</li><li>– STOT Single Exposure; Category 3; May cause respiratory irritation; Affected organs: Respiratory tract; Route of exposure: Inhalation.</li></ul>	
Signal word	
– Danger	
Pictogram	
– GHS07: exclamation mark	
– GHS05: corrosion	
Hazard statement	
<ul style="list-style-type: none"><li>– H332: Harmful if inhaled.</li><li>– H314: Causes severe skin burns and eye damage.</li><li>– H335: May cause respiratory irritation.</li></ul>	

## 10. Contact Information within Company

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For further information on this substance or product safety summary in general, please contact:

- arkema.reach-dpt1@arkema.com
- **ICCA portal where the GPS Safety Summary is posted:**  
<http://www.icca-chem.org/en/Home/ICCA-initiatives/global-product-strategy/>

## 11. Date of Issues / Revision

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- Date of issue: 2013/02/10
- Date of revision:

## 12. Disclaimer

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The information contained in this paper is intended as advice only and whilst the information is provided in utmost good faith and has been based on the best information currently available, is to be relied upon at the user's own risk.

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