

## GPS Safety Summary

**Substance Name:**

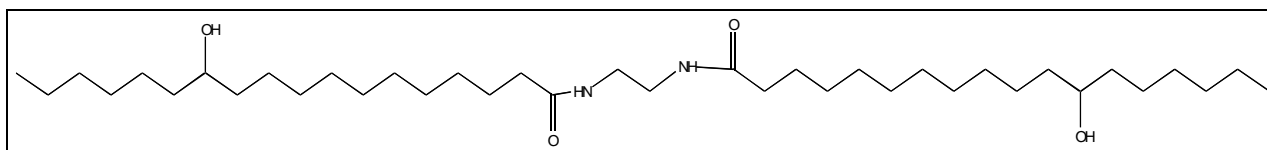
### **Octadecanoic acid, 12-hydroxy, reaction products with ethylenediamine**

#### **1. General Statement**

Octadecanoic acid, 12-hydroxy, reaction products with ethylenediamine, is a fatty di-amide UVCB<sup>1</sup>. It has a negligible solubility and low toxicity. It is used as a rheological additive in various coating applications.

#### **2. Chemical Identity**

<b>Name:</b>	Octadecanoic acid, 12-hydroxy, reaction products with ethylenediamine
<b>Brand names:</b>	Crayvallac® MT, Flowtone® ST (formulations)
<b>Chemical name (IUPAC):</b>	Reaction products of 12-hydroxyoctadecanoic acid with ethane-1,2-diamine
<b>CAS number:</b>	100545-48-0
<b>EC number:</b>	309-629-8
<b>Structure of main component:</b>	



#### **3. Use and applications**

Octadecanoic acid, 12-hydroxy, reaction products with ethylenediamine is used in formulations as a rheological additive.

The final liquid formulations contain low levels and are used by industrial and professional workers as adhesives, sealants, coatings, paints, thinners, paint removers, fillers, putties, plasters, modelling clay, inks, toners, welding and soldering products, flux products.

#### **4. Physical / Chemical properties**

Octadecanoic acid, 12-hydroxy, reaction products with ethylenediamine is a fine powder with negligible solubility, very high lipophilicity and no specific physico-chemical hazards. However, non-specific dust explosion cannot be excluded when using powders.

Property	Value
Physical state	Solid at 20°C and 1013 hPa
Form	Powder
Particle size	> 90% particles between 10 and 100 µm

<sup>1</sup> Unknown, Variable composition, Complex reaction products and Biological materials

Colour	Off-white
Odour	Odourless
Molecular weight	625 g/mol for main component
Density	1.04 at 20°C
Vapour pressure	0.1 mPa at 25°C
Self-ignition temperature	No self-ignition before melting.
Melting / boiling points	113-149°C at 1013 hPa. No boiling before decomposition.
Decomposition temperature	310°C at 1005 hPa.
Flammability	Non-flammable
Explosive / oxidizing properties	Not expected based on its structure
Water solubility	< 44 µg/L at 20°C
Dissociation constant (pK <sub>a</sub> )	12.1 at 20°C (estimated) for main component
Octanol-water partition coefficient (Log K <sub>ow</sub> )	> 5.86

## 5. Health Effects

Octadecanoic acid, 12-hydroxy, reaction products with ethylenediamine is a fine inhalable powder with. It has a weak skin sensitisation potential.

Effect Assessment	Result
Acute Toxicity Oral / inhalation / dermal	Slightly harmful by inhalation and ingestion Based on the physico-chemical properties, absorption through the skin is expected to be negligible.
Irritation / corrosion Skin / eye/ respiratory tract	Slightly irritating to skin and eyes.
Sensitisation	May cause an allergic skin reaction: low sensitising potential by skin contact.
Toxicity after repeated exposure Oral / inhalation / dermal	The predominant effect is local irritation. Does not cause toxicity to other organs after repeated exposure in animal studies.
Genotoxicity / Mutagenicity	Based on the available test data, not expected to cause genetic effects.
Carcinogenicity	No hazard expected in the absence of genotoxicity.
Reproductive / Developmental Toxicity	Based on the available test data, not expected to cause reproductive effects

## 6. Environmental Effects

The components of this UVCB being of negligible water solubility, they would partition to sediments in case of release in the aquatic environment. For the same reason, they are poorly bioavailable to micro-organisms and showed a limited/slow biodegradation in water.

The substance had no short-term effects on aquatic organisms (fish, invertebrates and algae) at its water solubility limit. However an environmental classification is required due to its high log K<sub>ow</sub> value and limited biodegradation potential.

Effect Assessment	Result
Aquatic Toxicity	No short-term effect at the water solubility limit in fish, invertebrates and algae. No long-term data available.

Fate and behaviour	Result
Biodegradation	Not readily biodegradable, but showed some biodegradation potential in water.
Bioaccumulation potential	No final conclusion can be drawn at present.
PBT / vPvB conclusion	No final conclusion can be drawn at present.

## 7. Exposure

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### 7.1 Human health

Due to a negligible volatility and inhalable particle size, the major exposure pathway to Octadecanoic acid, 12-hydroxy, reaction products with ethylenediamine is inhalation of dust. Exposure to aerosols is possible if the final formulation is applied by spray. Due to the very high lipophilicity and negligible water solubility, dermal penetration is expected to be limited.

Based on the chemical safety assessment, the risk is controlled when the activities described below are carried out under conditions recommended in the Extended Safety Data Sheet (see Chap. 8 and Exposure Scenarios).

#### **Workers:**

The substance is industrially manufactured and formulated within closed or semi-closed systems, minimizing the occupational exposure potential. The final, liquid formulations are applied using semi-closed or open processes such as roller, brush or spray. Potential occupational exposure steps include transfer, sampling, analysis, cleaning, maintenance and application of the formulations.

Procedures, controls, collective and personal risk management measures are in place, which limit the occupational exposure. Workers who might accidentally come in contact with the substance should follow the safety measures indicated in the Extended Safety Data Sheet.

#### **Consumers:**

When consumers apply the final liquid formulations, their inhalative exposure is limited by the absence of dust, the low amount/concentration and the short duration/frequency of use. Gloves are worn if dermal contact is possible depending on the application process.

### 7.2 Environment

The substance is industrially manufactured and formulated in batch processes within closed or semi-closed systems, minimizing release to the environment. The final application is either industrial or professional and spread across a large number of point sources. Due to negligible water solubility and volatility, the main exposure pathway for the environment is cleaning of the various sites.

Procedures, controls and risk management measures are in place, which limit the environmental exposure. Notably, cleaning waste is disposed of.

Overall, releases to the environment are negligible in the sector of use of coatings.

## 8. Risk Management recommendations

Human health measures		
Organisational	Collect the latest available Safety Data Sheet. Implement good basic standards of occupational hygiene. Ensure operatives are well informed of the hazards and trained to minimise exposures. Handle and store according to the indications of the Safety Data Sheet.	
Engineering controls	Prevention of dust explosion should be in place if a powder is used. Provide local exhaust ventilation at points of emission of dust. Ensure that eye and handwash stations and safety showers are closed to workstation locations.	
Personal protective equipment	Eye/Face protection:	Safety goggles with side-shields.
	Skin protection:	Protective suit.
	Hand protection:	Protective gloves.
	Respiratory protection:	Respirator if dust is emitted and ventilation is insufficient.
Environment protective measures		
Do not release into the environment. Do not let product enter drains, water streams or soil. Recycle or incinerate any waste.		

## 9. Regulatory Information / Classification and Labelling


### 9.1 Regulatory Information

This substance has been registered under EU Regulation EC 1907/2006 (REACH).

### 9.2 Classification and labelling

Under GHS (Globally Harmonized System of classification and labelling of chemicals), substances are classified according to their physical, health, and environmental hazards. The hazards are communicated via specific labels and safety data sheets. 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 to Regulation (EC) 1272/2008, implementation of the GHS in the European Union.

#### **Classification and labelling according to Regulation (EC) n° 1272/2008 and GHS**

Classification
– Skin sensitization: Category 1B. – Chronic aquatic toxicity: Category 3.
Labelling
Hazard pictogram

Signal word
– Warning

Hazard statements
<ul style="list-style-type: none"><li>– H317: May cause an allergic skin reaction.</li><li>– H412: Harmful to aquatic life with long lasting effects.</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-Uses-Coating-Resins@arkema.com](mailto:Arkema-Reach-Uses-Coating-Resins@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: 2014/12/15
- 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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