



Safety Data Sheet according to (EC) No 1907/2006

Page 1 of 12

LOCTITE EDAG PF 407A E&C known as ELECTRODAG PF-407A 1 KG

SDS No. : 339046
V005.2

Revision: 26.02.2016

printing date: 02.07.2020

Replaces version from: 14.05.2014

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

1.1. Product identifier

LOCTITE EDAG PF 407A E&C known as ELECTRODAG PF-407A 1 KG

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

Intended use:

PTF ink

1.3. Details of the supplier of the safety data sheet

Henkel Ltd

Wood Lane End

HP2 4RQ Hemel Hempstead

Great Britain

Phone: +44 1442 278000

Fax-no.: +44 1442 278071

ua-productsafety.uk@uk.henkel.com

1.4. Emergency telephone number

24 Hours Emergency Tel: +44 (0)1442 278497

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (CLP):

Flammable liquids

Category 3

H226 Flammable liquid and vapor.

Serious eye irritation

Category 2

H319 Causes serious eye irritation.

2.2. Label elements

Label elements (CLP):

Hazard pictogram:



Signal word:

Warning

Hazard statement:

H226 Flammable liquid and vapor.

H319 Causes serious eye irritation.

Precautionary statement: P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources.
Prevention No smoking.
P280 Wear eye protection/face protection.

Precautionary statement: P370+P378 In case of fire: Use CO2, dry chemical, or foam for extinction.
Response

2.3. Other hazards

None if used properly.

Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Base substances of preparation:

organic solvent
Pigment

Declaration of the ingredients according to CLP (EC) No 1272/2008:

Hazardous components CAS-No.	EC Number REACH-Reg No.	content	Classification
2-(2-Butoxyethoxy)ethanol 112-34-5	203-961-6 01-2119475104-44	40- 60 %	Eye Irrit. 2 H319
Methoxypropyl acetate 2- 108-65-6	203-603-9 01-2119475791-29	20- 40 %	Flam. Liq. 3 H226

For full text of the H - statements and other abbreviations see section 16 "Other information".
Substances without classification may have community workplace exposure limits available.

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation:

Move to fresh air, consult doctor if complaint persists.

Skin contact:

Rinse with running water and soap. Apply replenishing cream. Change all contaminated clothing. If necessary, see a dermatologist.

Eye contact:

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

In case of adverse health effects seek medical advice.

Ingestion:

Rinse out mouth, drink 1-2 glasses of water, do not induce vomiting.
In case of adverse health effects seek medical advice.

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

EYE: Irritation, conjunctivitis.

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

See section: Description of first aid measures

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:

Carbon dioxide, foam, powder
Water spray jet

Extinguishing media which must not be used for safety reasons:

Water jet (solvent-containing product).

5.2. Special hazards arising from the substance or mixture

Formation of toxic gases is possible during heating or in fires.

5.3. Advice for firefighters

Wear self-contained breathing apparatus.
Wear protective equipment.

Additional information:

In case of fire, keep containers cool with water spray.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Avoid skin and eye contact.

6.2. Environmental precautions

Do not empty into drains / surface water / ground water.
Do not allow to enter the ground / soil.

6.3. Methods and material for containment and cleaning up

Take up with liquid-absorbing material (sand).
Dispose of contaminated material as waste according to Section 13.

6.4. Reference to other sections

See advice in section 8

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Avoid skin and eye contact.
Ensure good ventilation/suction at the workplace.
See advice in section 8
Ground/bond container and receiving equipment.
Use explosion proof electric equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Avoid open flames and sources of ignition.

Hygiene measures:

Wash hands before work breaks and after finishing work.
Do not eat, drink or smoke while working.

7.2. Conditions for safe storage, including any incompatibilities

Store in sealed original container.
Store in a cool, well-ventilated place.
Storage at 10 to 30°C is recommended.
Store protected from heat influence.

7.3. Specific end use(s)

PTF ink

SECTION 8: Exposure controls/personal protection**8.1. Control parameters****Occupational Exposure Limits**Valid for
Great Britain

Ingredient [Regulated substance]	ppm	mg/m ³	Value type	Short term exposure limit category / Remarks	Regulatory list
2-(2-Butoxyethoxy)ethanol 112-34-5 [2-(2-BUTOXYETHOXY)ETHANOL]	15	101,2	Short Term Exposure Limit (STEL):		EH40 WEL
2-(2-Butoxyethoxy)ethanol 112-34-5 [2-(2-BUTOXYETHOXY)ETHANOL]	10	67,5	Time Weighted Average (TWA):		EH40 WEL
2-(2-Butoxyethoxy)ethanol 112-34-5 [2-(2-BUTOXYETHOXY)ETHANOL]	10	67,5	Time Weighted Average (TWA):	Indicative	ECTLV
2-(2-Butoxyethoxy)ethanol 112-34-5 [2-(2-BUTOXYETHOXY)ETHANOL]	15	101,2	Short Term Exposure Limit (STEL):	Indicative	ECTLV
2-Methoxy-1-methylethyl acetate 108-65-6 [2-METHOXY-1-METHYLETHYLACETATE]			Skin designation:	Can be absorbed through the skin.	ECTLV
2-Methoxy-1-methylethyl acetate 108-65-6 [1-METHOXYPROPYL ACETATE]	100	548	Short Term Exposure Limit (STEL):		EH40 WEL
2-Methoxy-1-methylethyl acetate 108-65-6 [1-METHOXYPROPYL ACETATE]	50	274	Time Weighted Average (TWA):		EH40 WEL
2-Methoxy-1-methylethyl acetate 108-65-6 [1-METHOXYPROPYL ACETATE]			Skin designation:	Can be absorbed through the skin.	EH40 WEL
2-Methoxy-1-methylethyl acetate 108-65-6 [2-METHOXY-1-METHYLETHYLACETATE]	100	550	Short Term Exposure Limit (STEL):	Indicative	ECTLV
2-Methoxy-1-methylethyl acetate 108-65-6 [2-METHOXY-1-METHYLETHYLACETATE]	50	275	Time Weighted Average (TWA):	Indicative	ECTLV
Graphite 7782-42-5 [GRAPHITE, INHALABLE DUST]		10	Time Weighted Average (TWA):		EH40 WEL
Graphite 7782-42-5 [GRAPHITE, RESPIRABLE DUST]		4	Time Weighted Average (TWA):		EH40 WEL
Carbon black 1333-86-4 [CARBON BLACK]		7	Short Term Exposure Limit (STEL):		EH40 WEL
Carbon black 1333-86-4 [CARBON BLACK]		3,5	Time Weighted Average (TWA):		EH40 WEL

Occupational Exposure LimitsValid for
Ireland

Ingredient [Regulated substance]	ppm	mg/m ³	Value type	Short term exposure limit category / Remarks	Regulatory list
2-(2-Butoxyethoxy)ethanol 112-34-5 [2-(2-BUTOXYETHOXY)ETHANOL]	15	101,2	Short Term Exposure Limit (STEL):	Indicative OELV	IR_OEL
2-(2-Butoxyethoxy)ethanol 112-34-5 [2-(2-BUTOXYETHOXY)ETHANOL]	10	67,5	Time Weighted Average (TWA):	Indicative OELV	IR_OEL
2-(2-Butoxyethoxy)ethanol	10	67,5	Time Weighted Average	Indicative	ECTLV

112-34-5 [2-(2-BUTOXYETHOXY)ETHANOL]			(TWA):		
2-(2-Butoxyethoxy)ethanol 112-34-5 [2-(2-BUTOXYETHOXY)ETHANOL]	15	101,2	Short Term Exposure Limit (STEL):	Indicative	ECTLV
2-Methoxy-1-methylethyl acetate 108-65-6 [2-METHOXY-1- METHYLETHYLACETATE]			Skin designation:	Can be absorbed through the skin.	ECTLV
2-Methoxy-1-methylethyl acetate 108-65-6 [2-METHOXY-1- METHYLETHYLACETATE]			Skin designation:	Can be absorbed through the skin.	IR_OEL
2-Methoxy-1-methylethyl acetate 108-65-6 [2-METHOXY-1- METHYLETHYLACETATE]	100	550	Short Term Exposure Limit (STEL):	Indicative OELV	IR_OEL
2-Methoxy-1-methylethyl acetate 108-65-6 [2-METHOXY-1- METHYLETHYLACETATE]	50	275	Time Weighted Average (TWA):	Indicative OELV	IR_OEL
2-Methoxy-1-methylethyl acetate 108-65-6 [2-METHOXY-1- METHYLETHYLACETATE]	100	550	Short Term Exposure Limit (STEL):	Indicative	ECTLV
2-Methoxy-1-methylethyl acetate 108-65-6 [2-METHOXY-1- METHYLETHYLACETATE]	50	275	Time Weighted Average (TWA):	Indicative	ECTLV
Graphite 7782-42-5 [GRAPHITE, RESPIRABLE DUST]		4	Time Weighted Average (TWA):		IR_OEL
Graphite 7782-42-5 [GRAPHITE, TOTAL INHALABLE DUST]		10	Time Weighted Average (TWA):		IR_OEL
Carbon black 1333-86-4 [CARBON BLACK]		3,5	Time Weighted Average (TWA):		IR_OEL
Carbon black 1333-86-4 [CARBON BLACK]		7	Short Term Exposure Limit (STEL):		IR_OEL

Biological Exposure Indices:

None

8.2. Exposure controls:

Engineering controls:

Ensure good ventilation/suction at the workplace.

Respiratory protection:

In case of aerosol formation, we recommend wearing of appropriate respiratory protection equipment with ABEK P2 filter (EN 14387).

This recommendation should be matched to local conditions.

Hand protection:

Chemical-resistant protective gloves (EN 374). Suitable materials for short-term contact or splashes (recommended: at least protection index 2, corresponding to > 30 minutes permeation time as per EN 374): Isobutylene-isoprene rubber (IIR; ≥ 0.7 mm thickness) Suitable materials for longer, direct contact (recommended: protection index 6, corresponding to > 480 minutes permeation time as per EN 374): Isobutylene-isoprene rubber (IIR; ≥ 0.7 mm thickness) This information is based on literature references and on information provided by glove manufacturers, or is derived by analogy with similar substances. Please note that in practice the working life of chemical-resistant protective gloves may be considerably shorter than the permeation time determined in accordance with EN 374 as a result of the many influencing factors (e.g. temperature). If signs of wear and tear are noticed then the gloves should be replaced.

Eye protection:
Goggles which can be tightly sealed.
Protective eye equipment should conform to EN166.

Skin protection:
Suitable protective clothing
Protective clothing should conform to EN 14605 for liquid splashes or to EN 13982 for dusts.

Advices to personal protection equipment:

The information provided on personal protective equipment is for guidance purposes only. A full risk assessment should be conducted prior to using this product to determine the appropriate personal protective equipment to suit local conditions. Personal protective equipment should conform to the relevant EN standard.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	liquid liquid black
Odor	Solvent
Odour threshold	No data available / Not applicable
pH	Not applicable
pH	Not available.
Initial boiling point	146 °C (294.8 °F)
Flash point	47 °C (116.6 °F)
Decomposition temperature	No data available / Not applicable
Vapour pressure (25 °C (77 °F))	3,8 mm hg
Density (20 °C (68 °F))	1,120 g/cm ³
Bulk density	No data available / Not applicable
Viscosity (; 20 °C (68 °F))	30.000 cp
Viscosity (kinematic)	No data available / Not applicable
Explosive properties	No data available / Not applicable
Solubility (qualitative) (Solvent: Water)	Soluble
Solidification temperature	No data available / Not applicable
Melting point	Not determined
Flammability	No data available / Not applicable
Auto-ignition temperature	No data available / Not applicable
Explosive limits	
lower	0,7 %(V)
upper	7,0 %(V)
Partition coefficient: n-octanol/water	No data available / Not applicable
Evaporation rate	No data available / Not applicable
Vapor density	No data available / Not applicable
Oxidising properties	No data available / Not applicable

9.2. Other information

No data available / Not applicable

SECTION 10: Stability and reactivity

10.1. Reactivity

Reaction with strong oxidants.

10.2. Chemical stability

Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions

See section reactivity

10.4. Conditions to avoid

No decomposition if stored and applied as directed.

10.5. Incompatible materials

See section reactivity

10.6. Hazardous decomposition products

None if used for intended purpose.

In case of fire toxic gases can be released.

SECTION 11: Toxicological information**11.1. Information on toxicological effects****General toxicological information:**

The mixture is classified based on the available hazard information for the ingredients as defined in the classification criteria for mixtures for each hazard class or differentiation in Annex I to Regulation (EC) No 1272/2008. Relevant available health/ecological information for the substances listed under Section 3 is provided in the following.

Skin irritation:

Prolonged or repeated contact may cause skin irritation.

Eye irritation:

Causes serious eye irritation.

Acute oral toxicity:

Hazardous components CAS-No.	Value type	Value	Route of application	Exposure time	Species	Method
2-(2-Butoxyethoxy)ethanol 112-34-5	LD50	> 2.000 mg/kg	oral		rat	EU Method B.1 (Acute Toxicity (Oral))
Methoxypropyl acetate 2-108-65-6	LD50	8.532 mg/kg	oral		rat	

Acute dermal toxicity:

Hazardous components CAS-No.	Value type	Value	Route of application	Exposure time	Species	Method
2-(2-Butoxyethoxy)ethanol 112-34-5	LD50	2.800 mg/kg	dermal		rabbit	
Methoxypropyl acetate 2-108-65-6	LD50	> 5.000 mg/kg	dermal		rat	

Skin corrosion/irritation:

Hazardous components CAS-No.	Result	Exposure time	Species	Method
2-(2-Butoxyethoxy)ethanol 112-34-5	not irritating		rabbit	Draize Test
Methoxypropyl acetate 2-108-65-6	not irritating		rabbit	

Serious eye damage/irritation:

Hazardous components CAS-No.	Result	Exposure time	Species	Method
2-(2-Butoxyethoxy)ethanol 112-34-5	moderately irritating		rabbit	
Methoxypropyl acetate 2-108-65-6	slightly irritating		rabbit	

Respiratory or skin sensitization:

Hazardous components CAS-No.	Result	Test type	Species	Method
2-(2-Butoxyethoxy)ethanol 112-34-5	not sensitising	Guinea pig maximisation test	guinea pig	Magnusson and Kligman Method
Methoxypropyl acetate 2- 108-65-6	not sensitising	Guinea pig maximisation test	guinea pig	Magnusson and Kligman Method

Germ cell mutagenicity:

Hazardous components CAS-No.	Result	Type of study / Route of administration	Metabolic activation / Exposure time	Species	Method
2-(2-Butoxyethoxy)ethanol 112-34-5	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		OECD Guideline 471 (Bacterial Reverse Mutation Assay)
Methoxypropyl acetate 2- 108-65-6	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		OECD Guideline 471 (Bacterial Reverse Mutation Assay)

Repeated dose toxicity

Hazardous components CAS-No.	Result	Route of application	Exposure time / Frequency of treatment	Species	Method
2-(2-Butoxyethoxy)ethanol 112-34-5	NOAEL=< 50 mg/kg	oral: gavage	90 days 5 days/week	rat	
2-(2-Butoxyethoxy)ethanol 112-34-5	NOAEL=2 - 6 ppm	inhalation	90 days	rat	
2-(2-Butoxyethoxy)ethanol 112-34-5	NOAEL=> 2.000 mg/kg	dermal	13 weeks 6 hours/day, 5 days/week	rat	
Methoxypropyl acetate 2- 108-65-6	NOAEL=300 ppm	inhalation	2 wks 6 hrs/day, 9 days	rat	
Methoxypropyl acetate 2- 108-65-6	LOAEL=1000 ppm	inhalation	2 wks 6 hrs/day, 9 days	rat	

SECTION 12: Ecological information**General ecological information:**

The mixture is classified based on the available hazard information for the ingredients as defined in the classification criteria for mixtures for each hazard class or differentiation in Annex I to Regulation (EC) No 1272/2008. Relevant available health/ecological information for the substances listed under Section 3 is provided in the following.

Do not empty into drains / surface water / ground water.

12.1. Toxicity

Hazardous components CAS-No.	Value type	Value	Acute Toxicity Study	Exposure time	Species	Method
2-(2-Butoxyethoxy)ethanol 112-34-5	LC50	1.300 mg/l	Fish	96 h	Lepomis macrochirus	OECD Guideline 203 (Fish, Acute Toxicity Test)
2-(2-Butoxyethoxy)ethanol 112-34-5	EC50	3.300 mg/l	Daphnia	24 h	Daphnia magna	
2-(2-Butoxyethoxy)ethanol 112-34-5	NOEC	> 100 mg/l	Algae	96 h	Scenedesmus subspicatus (new name: Desmodesmus subspicatus)	OECD Guideline 201 (Alga, Growth Inhibition Test)
	EC50	> 100 mg/l	Algae	96 h	Scenedesmus subspicatus (new name: Desmodesmus subspicatus)	OECD Guideline 201 (Alga, Growth Inhibition Test)
2-(2-Butoxyethoxy)ethanol 112-34-5	EC0	10.000 mg/l	Bacteria	30 min		
Methoxypropyl acetate 2- 108-65-6	LC50	100 - 180 mg/l	Fish	96 h	Salmo gairdneri (new name: Oncorhynchus mykiss)	OECD Guideline 203 (Fish, Acute Toxicity Test)
	LC50	63,5 mg/l	Fish	14 d	Oryzias latipes	OECD Guideline 204 (Fish, Prolonged Toxicity Test: 14-day Study)
Methoxypropyl acetate 2- 108-65-6	EC50	> 500 mg/l	Daphnia	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Methoxypropyl acetate 2- 108-65-6	NOEC	> 1.000 mg/l	Algae	72 h	Selenastrum capricornutum (new name: Pseudokirchnerella subcapitata)	OECD Guideline 201 (Alga, Growth Inhibition Test)
	EC50	> 1.000 mg/l	Algae	72 h	Selenastrum capricornutum (new name: Pseudokirchnerella subcapitata)	OECD Guideline 201 (Alga, Growth Inhibition Test)
Methoxypropyl acetate 2- 108-65-6	EC 50	> 100 mg/l	Bacteria			
Methoxypropyl acetate 2- 108-65-6	NOEC	> 100 mg/l	chronic Daphnia	21 d	Daphnia magna	OECD 211 (Daphnia magna, Reproduction Test)

12.2. Persistence and degradability

Hazardous components CAS-No.	Result	Route of application	Degradability	Method
2-(2-Butoxyethoxy)ethanol 112-34-5	inherently biodegradable	aerobic	100 %	OECD Guideline 302 B (Inherent biodegradability: Zahn- Wellens/EMPA Test)
	readily biodegradable	aerobic	> 60 %	OECD Guideline 301 C (Ready Biodegradability: Modified MITI Test (I))
Methoxypropyl acetate 2- 108-65-6	inherently biodegradable	aerobic	100 %	OECD Guideline 302 B (Inherent biodegradability: Zahn- Wellens/EMPA Test)
	readily biodegradable		90 %	OECD Guideline 301 F (Ready Biodegradability: Manometric Respirometry Test)

12.3. Bioaccumulative potential / 12.4. Mobility in soil

Hazardous components CAS-No.	LogKow	Bioconcentration factor (BCF)	Exposure time	Species	Temperature	Method
2-(2-Butoxyethoxy)ethanol 112-34-5	0,56					
Methoxypropyl acetate 2- 108-65-6	0,56					

12.5. Results of PBT and vPvB assessment

Hazardous components CAS-No.	PBT/vPvB
---------------------------------	----------

2-(2-Butoxyethoxy)ethanol 112-34-5	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.
Methoxypropyl acetate 2- 108-65-6	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.

12.6. Other adverse effects

No data available.

SECTION 13: Disposal considerations**13.1. Waste treatment methods**

Product disposal:

In consultation with the responsible local authority, must be subjected to special treatment.

Waste code

The valid EWC waste code numbers are source-related. The manufacturer is therefore unable to specify EWC waste codes for the articles or products used in the various sectors. The EWC codes listed are intended as a recommendation for users. We will be happy to advise you.

080312

SECTION 14: Transport information**14.1. UN number**

ADR	1210
RID	1210
ADN	1210
IMDG	1210
IATA	1210

14.2. UN proper shipping name

ADR	PRINTING INK
RID	PRINTING INK
ADN	PRINTING INK
IMDG	PRINTING INK
IATA	Printing ink

14.3. Transport hazard class(es)

ADR	3
RID	3
ADN	3
IMDG	3
IATA	3

14.4. Packing group

ADR	III
RID	III
ADN	III
IMDG	III
IATA	III

14.5. Environmental hazards

ADR	not applicable
RID	not applicable
ADN	not applicable
IMDG	not applicable
IATA	not applicable

14.6. Special precautions for user

ADR	Special provision 640E Tunnelcode: (D/E)
RID	Special provision 640E
ADN	Special provision 640E
IMDG	not applicable
IATA	not applicable

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

not applicable

SECTION 15: Regulatory information**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture**

VOC content (2010/75/EU)	21,2 %
-----------------------------	--------

15.2. Chemical safety assessment

A chemical safety assessment has not been carried out.

National regulations/information (Great Britain):

Remarks	Control of Substances Hazardous to Health Regulations (COSHH), and related guidance, e.g COSHH Essentials. EH40 Occupational Exposure Limits Chemicals (Hazard Information & Packaging for Supply) Regulations. The Personnel Protective Equipment at Work Regulations. The Carriage of Dangerous Goods by Road Regulations. The Health & Safety at Work Act 1974. (Note: Use latest editions/amendments of above referenced documents.)
---------	--

SECTION 16: Other information

The labelling of the product is indicated in Section 2. The full text of all abbreviations indicated by codes in this safety data sheet are as follows:

H226 Flammable liquid and vapor.
H319 Causes serious eye irritation.

Further information:

This information is based on our current level of knowledge and relates to the product in the state in which it is delivered. It is intended to describe our products from the point of view of safety requirements and is not intended to guarantee any particular properties.

Relevant changes in this safety data sheet are indicated by vertical lines at the left margin in the body of this document. Corresponding text is displayed in a different color on shadowed fields.