

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard Rule - 29 CFR 1910.1200 and the Canadian Hazardous Products Act



LIPLA EsOne Magenta Light HD Series Ink

SUBID:000001014530

Version 1

Print Date 05-10-2016

Revision Date 05-10-2016

SECTION 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Identification of the substance or mixture:

Product name : LIPLA EsOne Magenta Light HD Series Ink
MSDS Number : 000001014530

1.2 Use of the substance/mixture:

Use of the : Printing ink
Substance/Preparation

1.3 Company/undertaking identification

CMYK Engineering
1450 2nd Street, Los Angeles CA 90401

Ph: (424) 296-7227

Transport Emergency

Non-transportation

Call CHEMTREC : +1 800 4249300
International : +1 703 5273887

Health Emergency Phone : +1 303 6235716

SECTION 2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture:

GHS (Globally Harmonized System of Classification and Labelling of Chemicals)	
• Hazard classes	Skin irritation
Hazard categories	Category 2
Hazard statements	H315
• Hazard classes	Serious eye damage
Hazard categories	Category 1
Hazard statements	H318
• Hazard classes	Skin sensitizer
Hazard categories	Category 1
Hazard statements	H317
• Hazard classes	Specific target organ toxicity - repeated exposure
Hazard categories	Category 3
Hazard statements	H335
• Hazard classes	Specific target organ toxicity - single exposure
Hazard categories	Category 2
Hazard statements	H373
• Hazard classes	Toxic to reproduction
Hazard categories	Category 2

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Hazard statements	H361f
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2.2 Label elements:

Hazardous components which must be listed on the label :

Symbol(s)



GHS05



GHS07



GHS08

Signal word
Hazard
statements

: DANGER
: H315

Causes skin irritation.

H317
H318
H335
H336
H361f
H373

May cause an allergic skin reaction.
Causes serious eye damage.
May cause respiratory irritation.
May cause drowsiness or dizziness.
Suspected of damaging fertility.
May cause damage to organs (or state all organs affected, if known) through prolonged or repeated exposure (state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard).

Precautionary
statements:
prevention

: P201

Obtain special instructions before use.

P202

Do not handle until all safety precautions have been read and understood.

P260
P271
P272

Do not breathe dust/fume/gas/mist/vapours/spray.
Use only outdoors or in a well-ventilated area.

Contaminated work clothing should not be allowed out of the workplace.

P280

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

Precautionary
statements:
response

: P302+P352

IF ON SKIN: Wash with plenty of water/...

P332+P313
P362
P310
P363
P333+P313
P304+P340

If skin irritation occurs: Get medical advice/attention.
Take off contaminated clothing.
Immediately call a POISON CENTER/doctor/...
Wash contaminated clothing before reuse.
If skin irritation or rash occurs: Get medical advice/attention.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
Call a POISON CENTER/ doctor/.../if you feel unwell.
Get medical advice/attention if you feel unwell.
IF exposed or concerned: Get medical advice/attention.

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Precautionary statements: storage	: P403+P233	Store in a well-ventilated place. Keep container tightly closed.
Precautionary statements: disposal	: P405 P501NA	Store locked up. Dispose of contents / container to an approved waste disposal facility.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Mixture related information:

Printer ink, mainly consisting of:

3.2 Hazard ingredients:

The hazard and labelling information in this section is that of the individual ingredients. The corresponding information relative to this product as supplied is given in section 2.1.

Hazardous components

• Phenoxyethylacrylate		Concentration [%] :	20.0	-	40.0
CAS-No.	: 48145-04-6				
• Isobornyl acrylate		Concentration [%] :	10.0	-	20.0
CAS-No.	: 5888-33-5				
• Hexamethylene diacrylate		Concentration [%] :	5.0	-	10.0
CAS-No.	: 13048-33-4				
• 2-Propenoic acid ,1-6-hexanediyl ester, polymer with 2-aminoethanol		Concentration [%] :	5.0	-	10.0
CAS-No.	: 67906-98-3				
• Phosphine oxide, diphenyl(2,4,6-trimethylbenzoyl)-		Concentration [%] :	5.0	-	10.0
CAS-No.	: 75980-60-8				
• Tetrahydrofurfuryl acrylate		Concentration [%] :	5.0	-	10.0
CAS-No.	: 2399-48-6				
• N-vinyl caprolactam		Concentration [%] :	5.0	-	10.0
CAS-No.	: 2235-00-9				
• Oxybis(methyl-2,1-ethanediyl) diacrylate		Concentration [%] :	5.0	-	10.0
CAS-No.	: 57472-68-1				
• Isodecyl acrylate		Concentration [%] :	1.0	-	5.0
CAS-No.	: 1330-61-6				

Components with a community workplace exposure limit

- 2,6-bis(1,1-dimethylethyl)-4-methyl-phenol
- mequinol; 4-methoxyphenol; hydroquinone monomethyl ether
- Cupferron Al

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- Caprolactam

3.3 Remark:

Full text of each relevant H-phrase is listed in section 16.

SECTION 4. FIRST AID MEASURES

4.1 Description of first aid measures:

- | | | |
|-------------|---|---|
| Eye contact | : | Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. |
| Ingestion | : | Rinse mouth with plenty of water. Consult a physician if necessary. Do not induce vomiting. |
| Inhalation | : | Take patient to fresh air if necessary. Consult a physician if necessary. |

4.2 Most important symptoms and effects:

- | | | |
|----------|---|---|
| Symptoms | : | Upon contact with skin: redness, pain. In case of eye contact: redness and pain. Ingestion can cause nausea, vomiting and diarrhea. May cause headache and dizziness. |
|----------|---|---|

4.3 Indication of immediate medical attention and special treatment needed:

- | | | |
|----------------|---|-------------------------------|
| General advice | : | Call a physician immediately. |
|----------------|---|-------------------------------|

SECTION 5. FIRE-FIGHTING MEASURES

5.1 Extinguishing media

- | | | |
|---|---|---|
| Suitable extinguishing media | : | Alcohol-resistant foam., Carbon dioxide (CO2)., Dry extinguishing powder., Water. |
| Extinguishing media which must not be used for safety reasons | : | Do not use a solid water stream as it may scatter and spread fire. |

5.2 Special hazards arising from the substance or mixture:

- | | | |
|---------------------------------------|---|--|
| Specific hazards during fire fighting | : | Do not use a solid water stream as it may scatter and spread fire. |
| Further information | : | Collect contaminated fire extinguishing water separately. This must not be discharged into drains. |

5.3 Advice for fire-fighters:

- | | | |
|--|---|--|
| Special protective equipment for fire-fighters | : | Firefighters should be equipped with self-contained breathing apparatus to protect against potentially toxic and irritating fumes. |
|--|---|--|

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SECTION 6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures:

- Personal precautions : Cleanup personnel must use appropriate personal protective equipment.
- Additional advice : Observe normal precautions when handling chemicals.

6.2 Environmental precautions:

- Environmental precautions : The product should not be allowed to enter drains, water courses or the soil.

6.3 Methods and material for containment and cleaning up:

- Methods for cleaning up : Dike the spill if necessary. If spill occurs, apply a suitable absorbent material and collect into an impervious waste container. Collect the product in a plastic vessel. Carefully collect leftovers.

6.4 Reference to other sections:

- For waste disposal see section 13.
- For personal protection see section 8.

SECTION 7. HANDLING AND STORAGE

7.1 Precautions for safe handling:

- Advice on safe handling : Prevent product from diffusing.
- Hygiene measures : Employees should wash their hands and face before eating, drinking, or using tobacco products. Educate and train employees in the safe use and handling of this product. Emergency showers and eye wash stations should be available.
- Advice on protection against fire and explosion : No special protective measures against fire and explosion required.

7.2 Conditions for safe storage:

- Requirements for storage areas and containers : Keep container tightly closed. Keep in a dry place.
- Further information on storage conditions : Keep container in a well-ventilated place.

7.3 Specific end use:

- This substance is used only by trained professionals under restricted conditions.

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LIPLA EsOne Magenta Light HD Series Ink

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Version 1

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Revision Date 05-10-2016

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters:

8.1.1 Components with occupational exposure limits resp. biological occupational exposure limits requiring monitoring:

8.1.1.1 Occupational exposure limits:

Air limit values (US)

- 2,6-bis(1,1-dimethylethyl)-4-methyl-phenol

CAS-No.: 128-37-0

Basis	Revision Date	Value	Type
ACGIH	03 2014	2 mg/m3	TWA
NIOSH	2010	10 mg/m3	REL
OSHA Z1A	1989	10 mg/m3	TWA
TN OEL	06 2008	10 mg/m3	TWA
US CA OEL	09 2013	10 mg/m3	TWA PEL

- mequinol; 4-methoxyphenol; hydroquinone monomethyl ether

CAS-No.: 150-76-5

Basis	Revision Date	Value	Type
ACGIH	03 2014	5 mg/m3	TWA
NIOSH	2010	5 mg/m3	REL
OSHA Z1A	1989	5 mg/m3	TWA
TN OEL	06 2008	5 mg/m3	TWA
US CA OEL	09 2013	5 mg/m3	TWA PEL

- Cupferron Al

CAS-No.: 15305-07-4

Basis	Revision Date	Value	Type
ACGIH	03 2014	1 mg/m3	TWA

- Caprolactam

CAS-No.: 105-60-2

Basis	Revision Date	Value	Type
ACGIH	03 2014	5 mg/m3	TWA
NIOSH	2010	1 mg/m3	REL
NIOSH	2010	3 mg/m3	STEL
NIOSH	2010	1 mg/m3	REL
		0.22 ppm	
NIOSH	2010	3 mg/m3	STEL
		0.66 ppm	
OSHA Z1A	1989	40 mg/m3	STEL
		10 ppm	

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LIPLA EsOne Magenta Light HD Series Ink

SUBID:000001014530

Version 1

Print Date 05-10-2016

Revision Date 05-10-2016

OSHA Z1A	1989	3 mg/m3	STEL
OSHA Z1A	1989	1 mg/m3	TWA
OSHA Z1A	1989	20 mg/m3	TWA
		5 ppm	
TN OEL	06 2008	3 mg/m3	STEL
TN OEL	06 2008	40 mg/m3	STEL
		10 ppm	
TN OEL	06 2008	1 mg/m3	TWA
TN OEL	06 2008	20 mg/m3	TWA
		5 ppm	
US CA OEL	09 2013	20 mg/m3	TWA PEL
		5 ppm	
US CA OEL	09 2013	3 mg/m3	STEL
US CA OEL	09 2013	40 mg/m3	STEL
		10 ppm	
US CA OEL	09 2013	1 mg/m3	TWA PEL

Air limit values (CA)

- 2,6-bis(1,1-dimethylethyl)-4-methyl-phenol

CAS-No.: 128-37-0

Basis	Revision Date	Value	Type
CAD AB OEL	07 2009	10 mg/m3	TWA
CAD BC OEL	05 2013	2 mg/m3	TWA
CAD MB OEL	03 2014	2 mg/m3	TWA
CAD ON OEL	11 2010	2 mg/m3	TWAEV
CAD SK OEL	05 2009	2 mg/m3	8 HR ACL
CAD SK OEL	05 2009	4 mg/m3	15 MIN ACL
OEL (QUE)	11 2011	10 mg/m3	TWA

- mequinol; 4-methoxyphenol; hydroquinone monomethyl ether

CAS-No.: 150-76-5

Basis	Revision Date	Value	Type
CAD AB OEL	07 2009	5 mg/m3	TWA
CAD BC OEL	05 2013	5 mg/m3	TWA
CAD MB OEL	03 2014	5 mg/m3	TWA
CAD ON OEL	11 2010	5 mg/m3	TWAEV
CAD SK OEL	05 2009	10 mg/m3	15 MIN ACL
CAD SK OEL	05 2009	5 mg/m3	8 HR ACL
OEL (QUE)	11 2011	5 mg/m3	TWA

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard Rule - 29 CFR 1910.1200 and the Canadian Hazardous Products Act



LIPLA EsOne Magenta Light HD Series Ink

SUBID:000001014530

Version 1

Print Date 05-10-2016

Revision Date 05-10-2016

• Cupferron Al

CAS-No.: 15305-07-4

Basis	Revision Date	Value	Type
CAD BC OEL	05 2013	1 mg/m3	TWA
CAD MB OEL	03 2014	1 mg/m3	TWA
CAD ON OEL	11 2010	1 mg/m3	TWAEV
CAD SK OEL	05 2009	10 mg/m3	8 HR ACL
CAD SK OEL	05 2009	20 mg/m3	15 MIN ACL

• Caprolactam

CAS-No.: 105-60-2

Basis	Revision Date	Value	Type
CAD AB OEL	07 2009	5 mg/m3	TWA
CAD BC OEL	05 2013	1 mg/m3	TWA
CAD BC OEL	05 2013	3 mg/m3	STEL
CAD MB OEL	03 2014	5 mg/m3	TWA
CAD ON OEL	11 2010	5 mg/m3	TWAEV
CAD SK OEL	05 2009	5 mg/m3	8 HR ACL
CAD SK OEL	05 2009	10 mg/m3	15 MIN ACL
OEL (QUE)	11 2011	46 mg/m3	STEL
OEL (QUE)	11 2011	3 mg/m3	STEL
OEL (QUE)	11 2011	1 mg/m3	TWA
OEL (QUE)	11 2011	23 mg/m3	TWA

Biological limit values (US)

We are not aware of any national exposure limit.

Biological limit values (CA)

We are not aware of any national exposure limit.

8.1.1.2 Additional exposure limits under the conditions of use:

No other exposure limits applicable.

8.2 Exposure controls:

Occupational exposure controls:

➤ Instruction measures to prevent exposure:

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Version 1

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Employees should wash their hands and face before eating, drinking, or using tobacco products. Keep away from foodstuffs, drinks and tobacco.

➤ Technical measures to prevent exposure:

Ensure adequate ventilation.

➤ Personal measures to prevent exposure:

Respiratory protection : Under normal conditions of use, respirator protection is not required. If respirators are used, institute a program in accordance with OSHA standard 29CFR1910.134 or Canada CSA Standard Z94.4-02.

Hand protection : Use chemical resistant gloves. In case of prolonged immersion or frequently repeated contact use gloves made of the materials: butylrubber (thickness ≥ 0.70 mm, breakthrough time > 480 min).(EN 374). The use of protective gloves should conform to the specifications of EC directive 89/686/EC and the resultant standard EN374.

Additional advice: The data are based on own tests, literature data and information of glove manufacturers or derived from similar substances. Because several factors may influence these properties (eg temperature), one should take into account the fact that the life of a chemical gloves in practice may be considerably shorter than indicated by the permeation test. The high diversity of types of use are prescribed by the manufacturer.

Eye protection : Safety goggles. EN 166.

Body Protection : Safety clothes : long sleeved clothing EN13688

Personal protective equipment : Educate and train employees in the safe use and handling of this product. Emergency showers and eye wash stations should be available.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Basic physical and chemical properties:

9.1.1 Appearance:

State of matter : Liquid
Form : liquid
Color : Magenta
Odor : Sweetish smell
Odor threshold : No data available

9.1.2 Important health, safety and environmental information:

pH : Not applicable
Melting point/range : $< 0^{\circ}\text{C}$ Method: Literature.
Boiling point/range : $> 100^{\circ}\text{C}$ Method: Literature.

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LIPLA EsOne Magenta Light HD Series Ink

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Version 1

Print Date 05-10-2016

Revision Date 05-10-2016

Flash point	: > 100 °C	Method: Literature.
Autoignition temperature	: No data available	
Vapour pressure	: No data available	
Relative vapour density	: No data available	
Relative density	: 1.053	Method: Literature.
Density	: No data available	
Solubility/qualitative	: Immiscible with water.	
Water solubility	: No data available	
Partition coefficient (n-octanol/water)	: No data available	
Viscosity, dynamic	: No data available	
Viscosity, kinematic	: No data available	
Lower explosion limit	: No data available	
Upper explosion limit	: No data available	
Evaporation rate	: No data available	
Flammability (solid, gas)	: Not flammable.	Method: Literature.

9.2 Other information:

VOC content	: 266.2 g/l
	VOC content excluding water

SECTION 10. STABILITY AND REACTIVITY

10.1 Reactivity:

Reactivity	: Reactivity is not to be expected under normal conditions of temperature and pressure.
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10.2 Chemical stability:

Stability	: The product is stable under normal conditions of storage and use.
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10.3 Possibility of hazardous reactions:

Hazardous reactions	: The product is stable under normal conditions of storage and use.
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10.4 Conditions to avoid:

Conditions to avoid	: No data available
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10.5 Materials to avoid:

Materials to avoid	: No data available
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10.6 Hazardous decomposition products:

Hazardous decomposition products	: No specified dangerous decomposition products are known.
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SAFETY DATA SHEET

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LIPLA EsOne Magenta Light HD Series Ink

SUBID:000001014530

Version 1

Print Date 05-10-2016

Revision Date 05-10-2016

SECTION 11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Toxicity data specific for individual ingredients in their pure state:

Toxicokinetics, metabolism and distribution:

- Hexamethylene diacrylate
No data available
- Isodecyl acrylate
No data available

Acute effects (toxicity tests):

➤ Acute Toxicity

- Phenoxyethylacrylate

	Effect dose	Species	Value	Method
Acute oral toxicity	LD 50	Rat	5,000 mg/kg	Experimental result, Key study

- Isobornyl acrylate

	Effect dose	Species	Value	Method
Acute oral toxicity	LD 50	Rat	4,350 mg/kg	Experimental result, Key study
Acute dermal toxicity	LD 50	Rabbit	> 3,000 mg/kg	

- Hexamethylene diacrylate

	Effect dose	Species	Value	Method
Acute oral toxicity	LD 50	Rat	> 5,000 mg/kg	Experimental result, Key study
Acute dermal toxicity	LD 50	Rabbit	3,650 mg/kg	
Acute inhalation toxicity	LC 0	Rat	0.41 mg/l/ 7 h	Vapor Experimental result, Key study

- Phosphine oxide, diphenyl(2,4,6-trimethylbenzoyl)-

	Effect dose	Species	Value	Method
Acute oral toxicity	LD 50	Rat	> 5,000 mg/kg	Experimental result, Key study
Acute dermal toxicity	LD 50	Rat	> 2,000 mg/kg	

- N-vinyl caprolactam

	Effect dose	Species	Value	Method
Acute oral toxicity	LD 50	Rat	+/- 1,400 mg/kg	

SAFETY DATA SHEET

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LIPLA EsOne Magenta Light HD Series Ink

SUBID:000001014530

Version 1

Print Date 05-10-2016

Revision Date 05-10-2016

Acute dermal toxicity	Experimental result, Supporting study
Acute inhalation toxicity	LD 50 Rat > 2,000 mg/kg
	LC 50 Rat > 1.6 mg/l/ 8 h
	Vapor Experimental result, Key study

- Oxybis(methyl-2,1-ethanediyl) diacrylate

	Effect dose	Species	Value	Method
Acute oral toxicity	LD 50	Rat	4,626 mg/kg	
	Experimental result, Supporting study			
Acute dermal toxicity	LD 50	Rabbit	> 2,000 mg/kg	

- Isodecyl acrylate

	Effect dose	Species	Value	Method
Acute oral toxicity	LD 50	Rat	+/- 4,435 mg/kg	
	Read-across from supporting substance (structural analogue or surrogate), Key study			
Acute dermal toxicity	LD 50	Rabbit	7,522 mg/kg	
Acute inhalation toxicity	LC 50	Rat	> 1.19 mg/l/ 8 h	
	Vapor Read-across from supporting substance (structural analogue or surrogate), Key study			

➤ Specific target organ toxicity (STOT):

➤ Irritant and corrosive effects:

- Hexamethylene diacrylate

	Exposure time	Species	Evaluation	Method
Primary irritation to the skin		Rabbit	Category 2	in vivo
Irritation to eyes			Irritating	

- Oxybis(methyl-2,1-ethanediyl) diacrylate

	Exposure time	Species	Evaluation	Method
Primary irritation to the skin		Rabbit	Category 2	in vivo
Irritation to eyes	24 - 72 hrs	Rabbit	Category 1	in vivo
	OECD GHS			

- Isodecyl acrylate

	Exposure time	Species	Evaluation	Method
Irritation to eyes			Mildly Irritating	

➤ Irritation to the respiratory tract:

- Hexamethylene diacrylate

No data available

SAFETY DATA SHEET

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LIPLA EsOne Magenta Light HD Series Ink

SUBID:000001014530

Version 1

Print Date 05-10-2016

Revision Date 05-10-2016

- Isodecyl acrylate
- No data available

➤ Sensitisation:

- Hexamethylene diacrylate

Species	Evaluation	Method
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- Oxybis(methyl-2,1-ethanediyl) diacrylate

Species	Evaluation	Method
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➤ Aspiration hazard:

Sub-acute, sub-chronic and chronic toxicity

➤ Repeated dose toxicity:

- Phenoxyethylacrylate

	Effect dose	Value	Exposure time	Species
Oral			2 Weeks	Rat
Evaluation: 1 = reliable without restrictions Method: Gavage OralExperimental result, Supporting study				

- Isobornyl acrylate

	Effect dose	Value	Exposure time	Species
Inhalation				Rat
Evaluation: 2 = reliable with restrictions Method: Vapor InhalationRead-across from supporting substance (structural analogue or surrogate), Key study				

- Hexamethylene diacrylate

	Effect dose	Value	Exposure time	Species
Oral			28 - 52 d	Rat
Evaluation: 1 = reliable without restrictions Method: Gavage OralExperimental result, Key study				

- 2-Propenoic acid ,1-6-hexanediyl ester, polymer with 2-aminoethanol

- Phosphine oxide, diphenyl(2,4,6-trimethylbenzoyl)-

	Effect dose	Value	Exposure time	Species
Oral			28 d	Rat
Evaluation: 1 = reliable without restrictions Method: Gavage OralExperimental result, Key study				

SAFETY DATA SHEET

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LIPLA EsOne Magenta Light HD Series Ink

SUBID:000001014530

Version 1

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- Tetrahydrofurfuryl acrylate
- N-vinyl caprolactam

	Effect dose	Value	Exposure time	Species
Inhalation				Rat
	Evaluation: 1 = reliable without restrictions Method: Vapor InhalationExperimental result, Key study			

- Oxybis(methyl-2,1-ethanediyl) diacrylate

	Effect dose	Value	Exposure time	Species
Oral			28 - 52 d	Rat
	Evaluation: 1 = reliable without restrictions Method: Gavage OralRead-across from supporting substance (structural analogue or surrogate), Key study			

- Isodecyl acrylate

	Effect dose	Value	Exposure time	Species
Inhalation				Rat
	Evaluation: 2 = reliable with restrictions Method: Vapor InhalationRead-across from supporting substance (structural analogue or surrogate), Key study			

➤ Specific target organ toxicity (STOT):

- Phenoxyethylacrylate
- Isobornyl acrylate
- Hexamethylene diacrylate
- 2-Propenoic acid ,1-6-hexanediyl ester, polymer with 2-aminoethanol
- Phosphine oxide, diphenyl(2,4,6-trimethylbenzoyl)-
- Tetrahydrofurfuryl acrylate
- N-vinyl caprolactam
- Oxybis(methyl-2,1-ethanediyl) diacrylate
- Isodecyl acrylate

➤ CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction):

- Carcinogenicity

- Phenoxyethylacrylate
- Isobornyl acrylate
- Hexamethylene diacrylate

SAFETY DATA SHEET

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LIPLA EsOne Magenta Light HD Series Ink

SUBID:000001014530

Version 1

Print Date 05-10-2016

Revision Date 05-10-2016

No data available

- 2-Propenoic acid ,1-6-hexanediyl ester, polymer with 2-aminoethanol
- Phosphine oxide, diphenyl(2,4,6-trimethylbenzoyl)-
- Tetrahydrofurfuryl acrylate
- N-vinyl caprolactam
- Oxybis(methyl-2,1-ethanediyl) diacrylate
- Isodecyl acrylate

No data available

- **Mutagenicity**

- Hexamethylene diacrylate

Based on available data, the classification criteria are not met.

- Isodecyl acrylate

No data available

- **Genetic toxicity in vitro**

- Phenoxyethylacrylate
- Isobornyl acrylate
- Hexamethylene diacrylate
- 2-Propenoic acid ,1-6-hexanediyl ester, polymer with 2-aminoethanol
- Phosphine oxide, diphenyl(2,4,6-trimethylbenzoyl)-
- Tetrahydrofurfuryl acrylate
- N-vinyl caprolactam
- Oxybis(methyl-2,1-ethanediyl) diacrylate
- Isodecyl acrylate

- **Genetic toxicity in vivo**

- Phenoxyethylacrylate
- Isobornyl acrylate
- Hexamethylene diacrylate
- 2-Propenoic acid ,1-6-hexanediyl ester, polymer with 2-aminoethanol
- Phosphine oxide, diphenyl(2,4,6-trimethylbenzoyl)-
- Tetrahydrofurfuryl acrylate
- N-vinyl caprolactam
- Oxybis(methyl-2,1-ethanediyl) diacrylate
- Isodecyl acrylate

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard Rule - 29 CFR 1910.1200 and the Canadian Hazardous Products Act



LIPLA EsOne Magenta Light HD Series Ink

SUBID:000001014530

Version 1

Print Date 05-10-2016

Revision Date 05-10-2016

- Teratogenicity

- Phenoxyethylacrylate
- Isobornyl acrylate
- Hexamethylene diacrylate

Route of exposure	Species	Exposure time
	rat	
	Method: OECD-Guideline No.422	
	No teratogenic effects observed at the doses tested.	

- 2-Propenoic acid ,1-6-hexanediyl ester, polymer with 2-aminoethanol
- Phosphine oxide, diphenyl(2,4,6-trimethylbenzoyl)-
- Tetrahydrofurfuryl acrylate
- N-vinyl caprolactam
- Oxybis(methyl-2,1-ethanediyl) diacrylate
- Isodecyl acrylate

No data available

- Toxicity to reproduction

- Phenoxyethylacrylate
- Isobornyl acrylate
- Hexamethylene diacrylate

No data available

- 2-Propenoic acid ,1-6-hexanediyl ester, polymer with 2-aminoethanol
- Phosphine oxide, diphenyl(2,4,6-trimethylbenzoyl)-
- Tetrahydrofurfuryl acrylate
- N-vinyl caprolactam
- Oxybis(methyl-2,1-ethanediyl) diacrylate
- Isodecyl acrylate

No data available

➤ Summarised evaluation of the CMR properties:

Experiences made in practice:

Symptoms may be delayed. Consult your supplier if the material is to be used for special applications such as in the food industry or for hygiene, medical or surgical end-use. Other dangerous properties can not be excluded. At high concentrations the monomer vapours can cause eye and nose irritation.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard Rule - 29 CFR 1910.1200 and the Canadian Hazardous Products Act



LIPLA EsOne Magenta Light HD Series Ink

SUBID:000001014530

Version 1

Print Date 05-10-2016

Revision Date 05-10-2016

SECTION 12. ECOLOGICAL INFORMATION

12.1 Ecotoxicity:

- Hexamethylene diacrylate

	Effect dose	Exposure time	Species	Value
Toxicity to fish	LC 50	96 h	Leuciscus idus	4.6 to 10 mg/l
Toxicity to daphnia	Method: Static experimental result EC 50	48 h		2.6 mg/l
Toxicity to bacteria	Method: Static experimental result EC50	0.5 h		ca. 270 mg/l
Method: OECD-Guideline No.209; 88/302/EEC C.11				

- Oxybis(methyl-2,1-ethanediyl) diacrylate

	Effect dose	Exposure time	Species	Value
Toxicity to fish	LC 50	96 h	Leuciscus idus	2.2 to 4.64 mg/l
Toxicity to daphnia	Method: Static experimental result EC 50	48 h		22.3 mg/l
Method: Static experimental result				

- Isodecyl acrylate

	Effect dose	Exposure time	Species	Value
Toxicity to bacteria	EC50	0.5 h	Pseudomonas putida (bacteria)	> 10,000 mg/l
Method: Literature.				

12.2 Persistence and degradability:

Physico-chemical removability

- Phenoxyethylacrylate
- Isobornyl acrylate
- Hexamethylene diacrylate

No data available

- 2-Propenoic acid ,1-6-hexanediyl ester, polymer with 2-aminoethanol
- Phosphine oxide, diphenyl(2,4,6-trimethylbenzoyl)-
- Tetrahydrofurfuryl acrylate

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard Rule - 29 CFR 1910.1200 and the Canadian Hazardous Products Act



LIPLA EsOne Magenta Light HD Series Ink

SUBID:000001014530

Version 1

Print Date 05-10-2016

Revision Date 05-10-2016

- N-vinyl caprolactam
- Oxybis(methyl-2,1-ethanediyl) diacrylate
- Isodecyl acrylate

No data available

Chemical Oxygen Demand (COD)

- Phenoxyethylacrylate
- Isobornyl acrylate
- Hexamethylene diacrylate

No data available

- 2-Propenoic acid ,1-6-hexanediyl ester, polymer with 2-aminoethanol
- Phosphine oxide, diphenyl(2,4,6-trimethylbenzoyl)-
- Tetrahydrofurfuryl acrylate
- N-vinyl caprolactam
- Oxybis(methyl-2,1-ethanediyl) diacrylate
- Isodecyl acrylate

No data available

Adsorbed organic bound halogens (AOX)

- Phenoxyethylacrylate
- Isobornyl acrylate
- Hexamethylene diacrylate

Product does not contain any organic halogens.

- 2-Propenoic acid ,1-6-hexanediyl ester, polymer with 2-aminoethanol
- Phosphine oxide, diphenyl(2,4,6-trimethylbenzoyl)-
- Tetrahydrofurfuryl acrylate
- N-vinyl caprolactam
- Oxybis(methyl-2,1-ethanediyl) diacrylate
- Isodecyl acrylate

Product does not contain any organic halogens.

Biodegradation

- Phenoxyethylacrylate
- Isobornyl acrylate
- Hexamethylene diacrylate

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard Rule - 29 CFR 1910.1200 and the Canadian Hazardous Products Act



LIPLA EsOne Magenta Light HD Series Ink

SUBID:000001014530

Version 1

Print Date 05-10-2016

Revision Date 05-10-2016

Value	Exposure time	Method	Evaluation
89 %	14 d	OECD 301D Readily biodegradable	According to the results of tests of biodegradability this product is considered as being readily biodegradable.

- 2-Propenoic acid ,1-6-hexanediyl ester, polymer with 2-aminoethanol
- Phosphine oxide, diphenyl(2,4,6-trimethylbenzoyl)-
- Tetrahydrofurfuryl acrylate
- N-vinyl caprolactam
- Oxybis(methyl-2,1-ethanediyl) diacrylate
- Isodecyl acrylate

No data available

Biochemical Oxygen Demand (BOD)

- Phenoxyethylacrylate
- Isobornyl acrylate
- Hexamethylene diacrylate

No data available

- 2-Propenoic acid ,1-6-hexanediyl ester, polymer with 2-aminoethanol
- Phosphine oxide, diphenyl(2,4,6-trimethylbenzoyl)-
- Tetrahydrofurfuryl acrylate
- N-vinyl caprolactam
- Oxybis(methyl-2,1-ethanediyl) diacrylate
- Isodecyl acrylate

No data available

12.3 Bioaccumulative potential:

Partition coefficient (n-octanol/water)

No data available

Bioconcentration factor (BCF)

- Phenoxyethylacrylate
- Isobornyl acrylate
- Hexamethylene diacrylate
- 2-Propenoic acid ,1-6-hexanediyl ester, polymer with 2-aminoethanol

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard Rule - 29 CFR 1910.1200 and the Canadian Hazardous Products Act



LIPLA EsOne Magenta Light HD Series Ink

SUBID:000001014530

Version 1

Print Date 05-10-2016

Revision Date 05-10-2016

- Phosphine oxide, diphenyl(2,4,6-trimethylbenzoyl)-
- Tetrahydrofurfuryl acrylate
- N-vinyl caprolactam
- Oxybis(methyl-2,1-ethanediyl) diacrylate
- Isodecyl acrylate

12.4 Mobility in soil:

- Hexamethylene diacrylate

Based on a low adsorption coefficient Koc, a high mobility in soil is assumed.

- Isodecyl acrylate

No information available.

Henry's constant

- Hexamethylene diacrylate

Value	Temperature	Method
2.075 hPa	25 °C	No information available.

- Isodecyl acrylate

Value	Temperature	Method
6.729 MPa	25 °C	No information available.

Transport between environmental compartments

- Phenoxyethylacrylate
- Isobornyl acrylate
- Hexamethylene diacrylate
- 2-Propenoic acid ,1-6-hexanediyl ester, polymer with 2-aminoethanol
- Phosphine oxide, diphenyl(2,4,6-trimethylbenzoyl)-
- Tetrahydrofurfuryl acrylate
- N-vinyl caprolactam
- Oxybis(methyl-2,1-ethanediyl) diacrylate
- Isodecyl acrylate

12.5 Results of PBT and vPvB assessment:

This product does not meet the criteria concerning PBT or vPvB substances as described in Annex XIII of the REACH regulation (1907/2006 EC)

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard Rule - 29 CFR 1910.1200 and the Canadian Hazardous Products Act



LIPLA EsOne Magenta Light HD Series Ink

SUBID:000001014530

Version 1

Print Date 05-10-2016

Revision Date 05-10-2016

12.6 Other adverse effects:

This substance is not in Annex I of Regulation (EC) 2037/2000 on substances that deplete the ozone layer. Avoid infiltration in to drinking supplies, waste water or soil. An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

SECTION 13. DISPOSAL CONSIDERATIONS

Waste disposal methods

Waste disposal should be in accordance with existing federal, state and local environmental control laws.

Empty containers.

Recondition or dispose of empty container in accordance with governmental regulations.

US. RCRA Hazardous Waste Classification (40 CFR 261)

If discarded in its purchased form, this product would not be a hazardous waste either by listing or by characteristic. However, under RCRA, it is the responsibility of the product user to determine at the time of disposal, whether a material containing the product or derived from the product should be classified as a hazardous waste.

SECTION 14. TRANSPORT INFORMATION

CFR_ROAD

UN-No : 3082
Proper shipping name : Environmentally hazardous substance, liquid, n.o.s. (Acrylate)
Class : 9
Packing group : III
Labelling No. : 9

CFR_RAIL

UN-No : 3082
Proper shipping name : Environmentally hazardous substance, liquid, n.o.s. (Acrylate)
Class : 9
Packing group : III
Labelling No. : 9

CFR_INWTR

UN-No : 3082
Proper shipping name : Environmentally hazardous substance, liquid, n.o.s. (Acrylate)
Class : 9
Packing group : III
Labelling No. : 9

TDG_ROAD

UN-No : 3082

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard Rule - 29 CFR
1910.1200 and the Canadian Hazardous Products Act



LIPLA EsOne Magenta Light HD Series Ink

SUBID:000001014530

Version 1

Print Date 05-10-2016

Revision Date 05-10-2016

Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,
N.O.S. (Acrylate)
Class : 9
Packing group : III
Labelling No. : 9

TDG_RAIL

UN-No : 3082
Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,
N.O.S. (Acrylate)
Class : 9
Packing group : III
Labelling No. : 9

TDG_INWTR

UN-No : 3082
Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,
N.O.S. (Acrylate)
Class : 9
Packing group : III
Labelling No. : 9

IMO / IMDG

UN-No : 3082
Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,
N.O.S. (Acrylate)
Class : 9
Packing group : III
Labelling No. : 9
EmS : F-A, S-F
Marine pollutant : Marine pollutant

ICAO / IATA cargo aircraft only

UN-No : 3082
Proper shipping name : Environmentally hazardous substance, liquid, n.o.s. (Acrylate)
Class : 9
Packing group : III
Labelling No. : 9MI
Packing instruction : 964

ICAO / IATA passenger and cargo aircraft

UN-No : 3082
Proper shipping name : Environmentally hazardous substance, liquid, n.o.s. (Acrylate)
Class : 9
Packing group : III
Labelling No. : 9MI
Packing instruction : 964

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard Rule - 29 CFR 1910.1200 and the Canadian Hazardous Products Act



LIPLA EsOne Magenta Light HD Series Ink

SUBID:000001014530

Version 1

Print Date 05-10-2016

Revision Date 05-10-2016

SECTION 15. REGULATORY INFORMATION

US. Toxic Substances Control Act (TSCA)

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substance Control Act (U.S. EPA TSCA) 8(b) inventory.

US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 313 Toxic Chemicals (40 CFR 372.65) - Supplier Notification Required

- Phenoxyethylacrylate :
 - : De minimis concentration: 1.0 %
 - : Reportable threshold: 25,000 lbs
 - : Reportable threshold: 10,000 lbs

US. EPA CERCLA Hazardous Substances (40 CFR 302)

State Right-to-Know Information

The following chemicals are specifically listed by individual states. Other product specific health and safety data in other sections of the MSDS may also be applicable for state requirements. For details on your regulatory requirements you should contact the appropriate agency in your state.

US. New Jersey Worker and Community Right-to-Know Act (New Jersey Statute Annotated Section 34:5A-5)

	<u>CAS-No.</u>	<u>Concentration [%]</u>		
• Phenoxyethylacrylate	48145-04-6	>= 20.0	-	<= 40.0
• Phenoxyethylacrylate	48145-04-6	>= 20.0	-	<= 40.0

US. Pennsylvania Worker and Community Right-to-Know Law (34 Pa. Code Chap. 301-323)

	<u>CAS-No.</u>	<u>Concentration [%]</u>		
• Phenoxyethylacrylate	48145-04-6	>= 20.0	-	<= 40.0

US. Rhode Island Hazardous Substances Right-to-Know Act (R.I. Gen. Laws Section 28-21-1 et. seq.)

	<u>CAS-No.</u>	<u>Concentration [%]</u>		
• Phenoxyethylacrylate	48145-04-6	>= 20.0	-	<= 40.0

US. Massachusetts, New Jersey, Pennsylvania or Rhode Island Right to Know Substance Lists : See Section 2.

Canadian WHMIS Classification

E : Corrosive Material

Canadian Environmental Protection Act (CEPA)

This product contains the following components listed on the Canadian NDSL list. All other components are on the Canadian DSL list.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard Rule - 29 CFR 1910.1200 and the Canadian Hazardous Products Act



LIPLA EsOne Magenta Light HD Series Ink

SUBID:000001014530

Version 1

Print Date 05-10-2016

Revision Date 05-10-2016

- Tetrahydrofurfuryl acrylate

SECTION 16. OTHER INFORMATION

Text of H-phrases referred to under headings 2 and 3:

H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H335	May cause respiratory irritation.
H361f	Suspected of damaging fertility.
H373	May cause damage to organs (or state all organs affected, if known) through prolonged or repeated exposure (state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard).