

물질안전보건자료

(Material Safety Data Sheet)

1. Product and Company Identification

A. Product Name : EED-C440MB (Black solvent Ink)

B. Recommended use of the chemical and restrictions on use : Solvent-based ink for inkjet printer
Do not use for the other application.

C. Manufacturer :

Name : InkTec Co.,Ltd.

Address : #98-12, Neungan-ro, Danwon-gu, Ansan-city, Gyeonggi-do
425-839, Korea

Phone number : +82-31-494-0001

FAX number : +82-31-492-2041

2. Hazards Identification

A. Classification of the substance or mixture:

Classified as dangerous according to Directive 1999/45/EC :

Mixture is not classified as dangerous according to Directive 1999/45/EC.

For. Full text of R-phrases : See section 16.

Classification according to Regulation (EC) No 1272/2008 :

Mixture is not classified as dangerous according to Regulation (EC) No 1272/2008

B. Label elements, including precautionary statements

classified as dangerous according to Regulation (EC) No 1272/2008.:

Not applicable

C. Other hazards which do not result in classification :

No data available.

3. Composition Information

Substance name	% By weight	EC/CAS No.	EC No.	67/548 /EEC	Hazard Class and Category Code(s)	Classification CLP		Note
						Hazard statement	Pictogram/ Signal word	
1-ethoxy-2-(2-methoxyethoxy) ethane	50<c<60	213-690-5/ 1002-67-1	213-690-5	-	-	-	-	-
γ-butyrolactone	10<C<20	202-509-5/ 96-48-0	202-509-5	-	-	-	-	-
bis(2-ethoxyethyl) ether	10<C<20	203-963-7/ 112-36-7	203-963-7	-	-	-	-	-
Vinyl chloride/vinyl acetate copolymer resin	1<C<5	25086-48-0		-	-	-	-	-
Black pigment	1<C<5	proprietary	proprietary	-	-	-	-	-

¹Substance is classified in terms of Regulation (EC) No. 1272/2008 Annex VI.

²Substance with workplace exposure limits.

*For full text of H-statements and R-phrases: see SECTION 16.

4. First-aid measures

A. Description of first aid measures :

In case of respiratory exposure :

Remove to fresh air. Get medical attention for any breathing difficulty.

In case of skin contamination :

Remove contaminated clothing and wash exposed area with soap and water.

Get medical attention if irritation develops or persists.

In case of intrusion into eye :

Flush eyes with plenty of water for at least 15 minutes, lifting the upper and lower eyelids.

If irritation persists, get medical attention.

In case of oral intake :

Rinse mouth. Get medical attention.

B. Most important symptoms and effects, both acute and delayed :

No data available.

C. Indication of any immediate medical attention and special treatment needed :

No data available

5. Fire-fighting measures**A. Extinguishing media :****Suitable extinguishing media :**

Use extinguishing media appropriate for surrounding fire (dry chemical, foam, water spray, carbon dioxide)

Unsuitable extinguishing media : No data available.

B. Special hazards arising from the substance or mixture :

Fire may produce irritating or poisonous gases.

C. Advice for firefighters :

In the event of a fire, wear self-contained breathing apparatus and protective clothing.

6. Accidental release measures**A. Personal precautions, protective equipment and emergency procedures :**

For non-emergency personnel : Avoid inhalation and contact with skin, eyes and clothing.

Wear appropriate personal protective equipment as specified in Section 8. Ensure adequate ventilation.

For emergency responders : No data available.

B. Environmental precautions: Avoid dispersal of spilled material and contact with soil, ground and surface water, drains and sewers.

C. Methods and material for containment and cleaning up : Clean up spills immediately. Collect the material in labeled containers and dispose of according to local and regional authority requirements.

D. Reference to other sections : See Section 7 for information on safe handling. See Section 8 for information on personal protection equipment. See Section 13 for disposal information.

7. Handling and storage

A. Precautions for safe handling : Avoid inhalation and contact with skin, eyes and clothing. Handle in well ventilated work space. Wash thoroughly after handling. Do not eat, drink and smoke in work areas. Wear appropriate personal protective equipment as specified in Section 8.

B. Conditions for safe storage, including any incompatibilities :

Store in cool, dry and well-ventilated place. Keep away from incompatible materials.

C. Specific end use(s) : No data available.

8. Exposure controls/personal protection

A. Control parameters : Community workplace exposure limits were not established for substances contained in the mixture.

B. Exposure controls : Do not eat, drink or smoke when using this product. Immediately remove all contaminated clothing. Wash contaminated clothing before reuse. Wash hands before breaks and at the end of work.

1. Appropriate engineering controls : Use adequate ventilation.

2. Individual protection measures, such as personal protective equipment :

2.1 Eye/face protection : Wear appropriate safety glasses or goggles where eye contact is possible.

2.2 Skin protection :

Hand protection : Wear appropriate protective gloves.

Other : Wear appropriate protective clothing.

2.3 Respiratory protection : If ventilation is insufficient, use suitable respiratory protection.

2.4 Thermal hazards : No data available.

3. Environmental exposure controls : Do not allow to enter sewers, surface and ground water

9. Physical and chemical properties

Properties	Data	Properties	Data
Appearance	Black Liquid	Upper/lower flammability or explosive limits	No data available
Odor	Odorless or mild odor	Vapor pressure	No data available
Odour threshold	No data available	Vapor density	Greater than 1 (air=1)
pH	No data available	Relative density	No data available
Melting point/ Freezing point	No data available	Solubility(ies)	No data available
Initial boiling point and boiling range	172°C	Partition coefficient n-octanol/water	No data available
Flash point	80°C	Auto ignition temperature	No data available
Evaporation rate	No data available	Decomposition temperature	No data available

Flammability (Solid/Gas)	No data available	Viscosity	3.0 – 4.0 cP
Explosive properties	Possible to explode above flash point.	Oxidising properties	No data available

10. Stability and reactivity

- A. Reactivity** : No data available.
- B. Chemical stability** : The product is stable under normal conditions.
- C. Possibility of hazardous reactions** : No data available.
- D. Conditions to avoid** : No data available.
- E. Incompatible materials** : No data available
- F. Hazardous decomposition products** : No data available.

11. Toxicological information

A. Information on toxicological effects :

Substances : No data available.

Mixtures :

- Acute toxicity: No data available.
- Skin corrosion/irritation: No data available.
- Serious eye damage/irritation: No data available.
- Respiratory or skin sensitisation: No data available.
- Germ cell mutagenicity: No data available.
- Carcinogenicity: No data available.
- Reproductive toxicity: No data available.
- STOT-single exposure: No data available.
- STOT-repeated exposure: No data available.
- ASPIRATION HAZARD: NO DATA AVAILABLE.

12. Ecological information

- A. Toxicity** : No data available.
- B. Persistence and degradability** : No data available.
- C. Bio accumulative potential** : No data available.
- D. Mobility in soil** : No data available.
- E. Results of PBT and vPvB assessment** : No data available.

F. Other adverse effects : No data available.

13. Disposal considerations

A. Waste treatment methods : Dispose off in accordance with local and national regulations..

14. Transport information

- A. UN number** : No data available.
- B. UN proper shipping number** : No data available.
- C. Transport hazard class** : Not applicable.
- D. Packing group, if applicable** : Not applicable.
- E. Environmental hazards** : No data available.
- F. Special precautions for user** : Not applicable.
- G. IATA** : Not conflicting.

15. Regulatory information

- A. Regulation by the Korea Industrial Safety and Health Act** : No data available.
- B. Regulation by the Enforcement Decree of the Toxic Chemicals Control Act** : No data available.
- C. Regulation by the Safety Control of Dangerous Substances Act** : No data available.
- D. Regulation by the Waste Management Law** : Authorized waste

There are restrictions for substances classified as toxic to reproduction category 1A or 1B under Title VIII of Regulation (EC) No. 1907/2006.

Annex XVII to Regulation (EC) No 1907/2006 - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles:

Substances which appear in Part 3 of Annex VI to Regulation (EC) No 1272/2008 classified as toxic to reproduction category 1A or 1B (Table 3.1) or toxic to reproduction category 1 or 2 (Table 3.2) and listed as follows:

- reproductive toxicant category 1A adverse effects on sexual function and fertility or on development (Table 3.1) or reproductive toxicant category 1 with R60 (May impair fertility) or R61 (May cause harm to the unborn child) (Table 3.2) listed in Appendix 5
- reproductive toxicant category 1B adverse effects on sexual function and fertility or on development (Table 3.1) or reproductive toxicant category 2 with R60 (May impair fertility) or R61 (May cause harm to the unborn child) (Table 3.2) listed in Appendix 6:

1. Shall not be placed on the market, or used,

- as substances,
- as constituents of other substances, or,
- in mixtures,

for supply to the general public when the individual concentration in the substance or mixture is equal to or greater than:

- either the relevant specific concentration limit specified in Part 3 of Annex VI to Regulation (EC) No 1272/2008, or,
- the relevant concentration specified in Directive 1999/45/EC.

Without prejudice to the implementation of other Community provisions relating to the classification, packaging and labelling of substances and mixtures, suppliers shall ensure before the placing on the market that the packaging of such substances and mixtures is marked visibly, legibly and indelibly as follows:

'Restricted to professional users'.

2. By way of derogation, paragraph 1 shall not apply to:

- (a) medicinal or veterinary products as defined by Directive 2001/82/EC and Directive 2001/83/EC;
- (b) cosmetic products as defined by Directive 76/768/EEC;
- (c) the following fuels and oil products:
 - motor fuels which are covered by Directive 98/70/EC,
 - mineral oil products intended for use as fuel in mobile or fixed combustion plants,
 - fuels sold in closed systems (e.g. liquid gas bottles);
- (d) artists' paints covered by Directive 1999/45/EC;
- (e) the substances listed in Appendix 11, column 1, for the applications or uses listed in Appendix 11, column 2. Where a date is specified in column 2 of Appendix 11, the derogation shall apply until the said date.

Substances classified as toxic to reproduction category 1B contained in the mixture are not subject to authorization under Title VII of Regulation (EC) No. 1907/2006. Other substances in the mixture are not subject to authorisation under Title VII or restrictions under Title VIII of Regulation (EC) No. 1907/2006.

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC;

Regulation (EC) No 1272/2008 of the European parliament and of the Council of 16 December 2008 on classification, labeling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006;

COMMISSION REGULATION (EU) No 453/2010 of 20 May 2010 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH);

DIRECTIVE 1999/45/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 31 May 1999 concerning the approximation of the laws, regulations and administrative provisions of the Member States relating to the classification, packaging and labelling of dangerous preparations;

COUNCIL DIRECTIVE of 27 June 1967 on the approximation of laws, regulations and administrative provisions relating to the classification, packaging and labelling of dangerous substances (67/548/EEC).

16. Other information

- A. Literature references and sources for data :** Korea Occupational Safety and Health Agency
SDS was elaborated according to requirements set in Annex II of Regulation (EC) No 1907/2006 of the European Parliament and of the Council. SDS was prepared using data from the producer.
- B. Date of preparation :** 22. Feb. 2016
- C. Latest revision and changes Date :** Rev. 1.2 Date : 19. Sep. 2017
- D. Explanation :** This MSDS (Material Safety Data Sheets) contains health, safety and environment information, and was written by reflecting our company's current technology. This data is not a guarantee for the product's character or quality, and should be used only as a reference in relation to safe use of the product.

List of relevant risk phrases and hazard statements :

R22 Harmful if swallowed.
R36 Irritating to eyes
R60 May impair fertility.
R61 May cause harm to the unborn child.
Xn : Harmful
Xi : Irritant

Instructions for the training : Product handling instruction shall be included into the educational system about the safety work (initial training, training at the workplace, repeated training) according to specific conditions at the workplace.

Recommended restrictions on use (i.e. non-statutory recommendations by supplier) :

Mixture should not be used for any other purpose than for which is appointed (point 1.2).
Because of the fact that specific conditions of use of mixture are out of supplier's control,
It is responsibility of the user to adjust the prescribed warnings to local laws and regulations.
Safety information describes the product in terms of safety and it cannot be considered as
technical information about product.

물질안전보건자료

(Material Safety Data Sheet)

1. Product and Company Identification

A. Product Name : EED-C440MC (Cyan solvent Ink)

B. Recommended use of the chemical and restrictions on use : Solvent-based ink for inkjet printer
Do not use for the other application.

C. Manufacturer :

Name : InkTec Co.,Ltd.

Address : #98-12, Neungan-ro, Danwon-gu, Ansan-city, Gyeonggi-do
425-839, Korea

Phone number : +82-31-494-0001

FAX number : +82-31-492-2041

2. Hazards Identification

A. Classification of the substance or mixture :

Classified as dangerous according to Directive 1999/45/EC :

Mixture is not classified as dangerous according to Directive 1999/45/EC.

For. Full text of R-phrases : See section 16.

Classification according to Regulation (EC) No 1272/2008 :

Mixture is not classified as dangerous according to Regulation (EC) No 1272/2008

B. Label elements, including precautionary statements

classified as dangerous according to Regulation (EC) No 1272/2008.:

Not applicable

C. Other hazards which do not result in classification :

No data available.

3. Composition Information

Substance name	% By weight	EC/CAS No.	EC No.	67/548 /EEC	Classification			Note
					Hazard Class and Category Code(s)	CLP Hazard statement	Pictogram/ Signal word	
1-ethoxy-2-(2-methoxyethoxy) ethane	50<c<60	213-690-5/ 1002-67-1	213-690-5	-	-	-	-	-
γ-butyrolactone	10<C<20	202-509-5/ 96-48-0	202-509-5	-	-	-	-	-
bis(2-ethoxyethyl) ether	10<C<20	203-963-7/ 112-36-7	203-963-7	-	-	-	-	-
Vinyl chloride/vinyl acetate copolymer resin	1<C<5	25086-48-0		-	-	-	-	-
Cyan pigment	1<C<5	proprietary	proprietary	-	-	-	-	-

¹Substance is classified in terms of Regulation (EC) No. 1272/2008 Annex VI.

²Substance with workplace exposure limits.

*For full text of H-statements and R-phrases: see SECTION 16.

4. First-aid measures

A. Description of first aid measures :

In case of respiratory exposure :

Remove to fresh air. Get medical attention for any breathing difficulty.

In case of skin contamination :

Remove contaminated clothing and wash exposed area with soap and water.

Get medical attention if irritation develops or persists.

In case of intrusion into eye :

Flush eyes with plenty of water for at least 15 minutes, lifting the upper and lower eyelids.

If irritation persists, get medical attention.

In case of oral intake :

Rinse mouth. Get medical attention.

B. Most important symptoms and effects, both acute and delayed :

No data available.

C. Indication of any immediate medical attention and special treatment needed :

No data available

5. Fire-fighting measures**A. Extinguishing media :****Suitable extinguishing media :**

Use extinguishing media appropriate for surrounding fire (dry chemical, foam, water spray, carbon dioxide)

Unsuitable extinguishing media : No data available.

B. Special hazards arising from the substance or mixture :

Fire may produce irritating or poisonous gases.

C. Advice for firefighters :

In the event of a fire, wear self-contained breathing apparatus and protective clothing.

6. Accidental release measures**A. Personal precautions, protective equipment and emergency procedures :**

For non-emergency personnel : Avoid inhalation and contact with skin, eyes and clothing.

Wear appropriate personal protective equipment as specified in Section 8. Ensure adequate ventilation.

For emergency responders : No data available.

B. Environmental precautions: Avoid dispersal of spilled material and contact with soil, ground and surface water, drains and sewers.

C. Methods and material for containment and cleaning up : Clean up spills immediately. Collect the material in labeled containers and dispose of according to local and regional authority requirements.

D. Reference to other sections : See Section 7 for information on safe handling. See Section 8 for information on personal protection equipment. See Section 13 for disposal information.

7. Handling and storage

A. Precautions for safe handling : Avoid inhalation and contact with skin, eyes and clothing. Handle in well ventilated work space. Wash thoroughly after handling. Do not eat, drink and smoke in work areas. Wear appropriate personal protective equipment as specified in Section 8.

B. Conditions for safe storage, including any incompatibilities :

Store in cool, dry and well-ventilated place. Keep away from incompatible materials.

C. Specific end use(s) : No data available.

8. Exposure controls/personal protection

A. Control parameters : Community workplace exposure limits were not established for substances contained in the mixture.

B. Exposure controls : Do not eat, drink or smoke when using this product. Immediately remove all contaminated clothing. Wash contaminated clothing before reuse. Wash hands before breaks and at the end of work.

1. Appropriate engineering controls : Use adequate ventilation.

2. Individual protection measures, such as personal protective equipment :

2.1 Eye/face protection : Wear appropriate safety glasses or goggles where eye contact is possible.

2.2 Skin protection :

Hand protection : Wear appropriate protective gloves.

Other : Wear appropriate protective clothing.

2.3 Respiratory protection : If ventilation is insufficient, use suitable respiratory protection.

2.4 Thermal hazards : No data available.

3. Environmental exposure controls : Do not allow to enter sewers, surface and ground water

9. Physical and chemical properties

Properties	Data	Properties	Data
Appearance	Cyan Liquid	Upper/lower flammability or explosive limits	No data available
Odor	Odorless or mild odor	Vapor pressure	No data available
Odour threshold	No data available	Vapor density	Greater than 1 (air=1)
pH	No data available	Relative density	No data available
Melting point/ Freezing point	No data available	Solubility(ies)	No data available
Initial boiling point and boiling range	172°C	Partition coefficient n-octanol/water	No data available
Flash point	80°C	Auto ignition temperature	No data available
Evaporation rate	No data available	Decomposition temperature	No data available

Flammability (Solid/Gas)	No data available	Viscosity	3.0 – 4.0 cP
Explosive properties	Possible to explode above flash point.	Oxidising properties	No data available

10. Stability and reactivity

- A. Reactivity** : No data available.
- B. Chemical stability** : The product is stable under normal conditions.
- C. Possibility of hazardous reactions** : No data available.
- D. Conditions to avoid** : No data available.
- E. Incompatible materials** : No data available
- F. Hazardous decomposition products**: No data available.

11. Toxicological information

A. Information on toxicological effects :

Substances : No data available.

Mixtures :

- Acute toxicity: No data available.
- Skin corrosion/irritation: No data available.
- Serious eye damage/irritation: No data available.
- Respiratory or skin sensitisation: No data available.
- Germ cell mutagenicity: No data available.
- Carcinogenicity: No data available.
- Reproductive toxicity: No data available.
- STOT-single exposure: No data available.
- STOT-repeated exposure: No data available.
- ASPIRATION HAZARD: NO DATA AVAILABLE.

12. Ecological information

- A. Toxicity** : No data available.
- B. Persistence and degradability** : No data available.
- C. Bio accumulative potential** : No data available.
- D. Mobility in soil** : No data available.
- E. Results of PBT and vPvB assessment** : No data available.

F. Other adverse effects : No data available.

13. Disposal considerations

A. Waste treatment methods : Dispose off in accordance with local and national regulations..

14. Transport information

- A. UN number** : No data available.
- B. UN proper shipping number** : No data available.
- C. Transport hazard class** : Not applicable.
- D. Packing group, if applicable** : Not applicable.
- E. Environmental hazards** : No data available.
- F. Special precautions for user** : Not applicable.
- G. IATA** : Not conflicting.

15. Regulatory information

- A. Regulation by the Korea Industrial Safety and Health Act** : No data available.
- B. Regulation by the Enforcement Decree of the Toxic Chemicals Control Act** : No data available.
- C. Regulation by the Safety Control of Dangerous Substances Act** : No data available.
- D. Regulation by the Waste Management Law** : Authorized waste

There are restrictions for substances classified as toxic to reproduction category 1A or 1B under Title VIII of Regulation (EC) No. 1907/2006.

Annex XVII to Regulation (EC) No 1907/2006 - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles:

Substances which appear in Part 3 of Annex VI to Regulation (EC) No 1272/2008 classified as toxic to reproduction category 1A or 1B (Table 3.1) or toxic to reproduction category 1 or 2 (Table 3.2) and listed as follows:

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- reproductive toxicant category 1B adverse effects on sexual function and fertility or on development (Table 3.1) or reproductive toxicant category 2 with R60 (May impair fertility) or R61 (May cause harm to the unborn child) (Table 3.2) listed in Appendix 6:

1. Shall not be placed on the market, or used,

- as substances,
- as constituents of other substances, or,
- in mixtures,

for supply to the general public when the individual concentration in the substance or mixture is equal to or greater than:

- either the relevant specific concentration limit specified in Part 3 of Annex VI to Regulation (EC) No 1272/2008, or,
- the relevant concentration specified in Directive 1999/45/EC.

Without prejudice to the implementation of other Community provisions relating to the classification, packaging and labelling of substances and mixtures, suppliers shall ensure before the placing on the market that the packaging of such substances and mixtures is marked visibly, legibly and indelibly as follows:

'Restricted to professional users'.

2. By way of derogation, paragraph 1 shall not apply to:

- (a) medicinal or veterinary products as defined by Directive 2001/82/EC and Directive 2001/83/EC;
- (b) cosmetic products as defined by Directive 76/768/EEC;
- (c) the following fuels and oil products:
 - motor fuels which are covered by Directive 98/70/EC,
 - mineral oil products intended for use as fuel in mobile or fixed combustion plants,
 - fuels sold in closed systems (e.g. liquid gas bottles);
- (d) artists' paints covered by Directive 1999/45/EC;
- (e) the substances listed in Appendix 11, column 1, for the applications or uses listed in Appendix 11, column 2. Where a date is specified in column 2 of Appendix 11, the derogation shall apply until the said date.

Substances classified as toxic to reproduction category 1B contained in the mixture are not subject to authorization under Title VII of Regulation (EC) No. 1907/2006. Other substances in the mixture are not subject to authorisation under Title VII or restrictions under Title VIII of Regulation (EC) No. 1907/2006.

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC;

Regulation (EC) No 1272/2008 of the European parliament and of the Council of 16 December 2008 on classification, labeling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006;

COMMISSION REGULATION (EU) No 453/2010 of 20 May 2010 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH);

DIRECTIVE 1999/45/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 31 May 1999 concerning the approximation of the laws, regulations and administrative provisions of the Member States relating to the classification, packaging and labelling of dangerous preparations;

COUNCIL DIRECTIVE of 27 June 1967 on the approximation of laws, regulations and administrative provisions relating to the classification, packaging and labelling of dangerous substances (67/548/EEC).

16. Other information

- A. Literature references and sources for data :** Korea Occupational Safety and Health Agency
SDS was elaborated according to requirements set in Annex II of Regulation (EC) No 1907/2006 of the European Parliament and of the Council. SDS was prepared using data from the producer.
- B. Date of preparation :** 27. Jul. 2017
- C. Latest revision and changes Date :** Rev. 1.1 Date : 19. Sep. 2017
- D. Explanation :** This MSDS (Material Safety Data Sheets) contains health, safety and environment information, and was written by reflecting our company's current technology. This data is not a guarantee for the product's character or quality, and should be used only as a reference in relation to safe use of the product.

List of relevant risk phrases and hazard statements :

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R36 Irritating to eyes
R60 May impair fertility.
R61 May cause harm to the unborn child.
Xn : Harmful
Xi : Irritant

Instructions for the training : Product handling instruction shall be included into the educational system about the safety work (initial training, training at the workplace, repeated training) according to specific conditions at the workplace.

Recommended restrictions on use (i.e. non-statutory recommendations by supplier) :

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Because of the fact that specific conditions of use of mixture are out of supplier's control,
It is responsibility of the user to adjust the prescribed warnings to local laws and regulations.
Safety information describes the product in terms of safety and it cannot be considered as
technical information about product.

물질안전보건자료

(Material Safety Data Sheet)

1. Product and Company Identification

A. Product Name : EED-C440MLB (Light black solvent Ink)

B. Recommended use of the chemical and restrictions on use : Solvent-based ink for inkjet printer
Do not use for the other application.

C. Manufacturer :

Name : InkTec Co.,Ltd.

Address : #98-12, Neungan-ro, Danwon-gu, Ansan-city, Gyeonggi-do
425-839, Korea

Phone number : +82-31-494-0001

FAX number : +82-31-492-2041

2. Hazards Identification

A. Classification of the substance or mixture:

Classified as dangerous according to Directive 1999/45/EC :

Mixture is not classified as dangerous according to Directive 1999/45/EC.

For. Full text of R-phrases : See section 16.

Classification according to Regulation (EC) No 1272/2008 :

Mixture is not classified as dangerous according to Regulation (EC) No 1272/2008

B. Label elements, including precautionary statements

classified as dangerous according to Regulation (EC) No 1272/2008.:

Not applicable

C. Other hazards which do not result in classification :

No data available.

3. Composition Information

Substance name	% By weight	EC/CAS No.	EC No.	67/548 /EEC	Classification CLP			Note
					Hazard Class and Category Code(s)	Hazard statement	Pictogram/ Signal word	
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γ-butyrolactone	10<C<20	202-509-5/ 96-48-0	202-509-5	-	-	-	-	-
bis(2-ethoxyethyl) ether	10<C<20	203-963-7/ 112-36-7	203-963-7	-	-	-	-	-
Vinyl chloride/vinyl acetate copolymer resin	1<C<5	25086-48-0		-	-	-	-	-
Black pigment	1<C<3	proprietary	proprietary	-	-	-	-	-

¹Substance is classified in terms of Regulation (EC) No. 1272/2008 Annex VI.

²Substance with workplace exposure limits.

*For full text of H-statements and R-phrases: see SECTION 16.

4. First-aid measures

A. Description of first aid measures :

In case of respiratory exposure :

Remove to fresh air. Get medical attention for any breathing difficulty.

In case of skin contamination :

Remove contaminated clothing and wash exposed area with soap and water.

Get medical attention if irritation develops or persists.

In case of intrusion into eye :

Flush eyes with plenty of water for at least 15 minutes, lifting the upper and lower eyelids.

If irritation persists, get medical attention.

In case of oral intake :

Rinse mouth. Get medical attention.

B. Most important symptoms and effects, both acute and delayed :

No data available.

C. Indication of any immediate medical attention and special treatment needed :

No data available

5. Fire-fighting measures**A. Extinguishing media :****Suitable extinguishing media :**

Use extinguishing media appropriate for surrounding fire (dry chemical, foam, water spray, carbon dioxide)

Unsuitable extinguishing media : No data available.

B. Special hazards arising from the substance or mixture :

Fire may produce irritating or poisonous gases.

C. Advice for firefighters :

In the event of a fire, wear self-contained breathing apparatus and protective clothing.

6. Accidental release measures**A. Personal precautions, protective equipment and emergency procedures :**

For non-emergency personnel : Avoid inhalation and contact with skin, eyes and clothing.

Wear appropriate personal protective equipment as specified in Section 8. Ensure adequate ventilation.

For emergency responders : No data available.

B. Environmental precautions: Avoid dispersal of spilled material and contact with soil, ground and surface water, drains and sewers.

C. Methods and material for containment and cleaning up : Clean up spills immediately. Collect the material in labeled containers and dispose of according to local and regional authority requirements.

D. Reference to other sections : See Section 7 for information on safe handling. See Section 8 for information on personal protection equipment. See Section 13 for disposal information.

7. Handling and storage

A. Precautions for safe handling : Avoid inhalation and contact with skin, eyes and clothing. Handle in well ventilated work space. Wash thoroughly after handling. Do not eat, drink and smoke in work areas. Wear appropriate personal protective equipment as specified in Section 8.

B. Conditions for safe storage, including any incompatibilities :

Store in cool, dry and well-ventilated place. Keep away from incompatible materials.

C. Specific end use(s) : No data available.

8. Exposure controls/personal protection

A. Control parameters : Community workplace exposure limits were not established for substances contained in the mixture.

B. Exposure controls : Do not eat, drink or smoke when using this product. Immediately remove all contaminated clothing. Wash contaminated clothing before reuse. Wash hands before breaks and at the end of work.

1. Appropriate engineering controls : Use adequate ventilation.

2. Individual protection measures, such as personal protective equipment :

2.1 Eye/face protection : Wear appropriate safety glasses or goggles where eye contact is possible.

2.2 Skin protection :

Hand protection : Wear appropriate protective gloves.

Other : Wear appropriate protective clothing.

2.3 Respiratory protection : If ventilation is insufficient, use suitable respiratory protection.

2.4 Thermal hazards : No data available.

3. Environmental exposure controls : Do not allow to enter sewers, surface and ground water

9. Physical and chemical properties

Properties	Data	Properties	Data
Appearance	Light Black Liquid	Upper/lower flammability or explosive limits	No data available
Odor	Odorless or mild odor	Vapor pressure	No data available
Odour threshold	No data available	Vapor density	Greater than 1 (air=1)
pH	No data available	Relative density	No data available
Melting point/ Freezing point	No data available	Solubility(ies)	No data available
Initial boiling point and boiling range	172°C	Partition coefficient n-octanol/water	No data available
Flash point	80°C	Auto ignition temperature	No data available
Evaporation rate	No data available	Decomposition temperature	No data available

Flammability (Solid/Gas)	No data available	Viscosity	3.0 – 4.0 cP
Explosive properties	Possible to explode above flash point.	Oxidising properties	No data available

10. Stability and reactivity

- A. Reactivity** : No data available.
- B. Chemical stability** : The product is stable under normal conditions.
- C. Possibility of hazardous reactions** : No data available.
- D. Conditions to avoid** : No data available.
- E. Incompatible materials** : No data available
- F. Hazardous decomposition products** : No data available.

11. Toxicological information

A. Information on toxicological effects :

Substances : No data available.

Mixtures :

- Acute toxicity: No data available.
- Skin corrosion/irritation: No data available.
- Serious eye damage/irritation: No data available.
- Respiratory or skin sensitisation: No data available.
- Germ cell mutagenicity: No data available.
- Carcinogenicity: No data available.
- Reproductive toxicity: No data available.
- STOT-single exposure: No data available.
- STOT-repeated exposure: No data available.
- ASPIRATION HAZARD: NO DATA AVAILABLE.

12. Ecological information

- A. Toxicity** : No data available.
- B. Persistence and degradability** : No data available.
- C. Bio accumulative potential** : No data available.
- D. Mobility in soil** : No data available.
- E. Results of PBT and vPvB assessment** : No data available.

F. Other adverse effects : No data available.

13. Disposal considerations

A. Waste treatment methods : Dispose off in accordance with local and national regulations..

14. Transport information

- A. UN number** : No data available.
- B. UN proper shipping number** : No data available.
- C. Transport hazard class** : Not applicable.
- D. Packing group, if applicable** : Not applicable.
- E. Environmental hazards** : No data available.
- F. Special precautions for user** : Not applicable.
- G. IATA** : Not conflicting.

15. Regulatory information

- A. Regulation by the Korea Industrial Safety and Health Act** : No data available.
- B. Regulation by the Enforcement Decree of the Toxic Chemicals Control Act** : No data available.
- C. Regulation by the Safety Control of Dangerous Substances Act** : No data available.
- D. Regulation by the Waste Management Law** : Authorized waste

There are restrictions for substances classified as toxic to reproduction category 1A or 1B under Title VIII of Regulation (EC) No. 1907/2006.

Annex XVII to Regulation (EC) No 1907/2006 - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles:

Substances which appear in Part 3 of Annex VI to Regulation (EC) No 1272/2008 classified as toxic to reproduction category 1A or 1B (Table 3.1) or toxic to reproduction category 1 or 2 (Table 3.2) and listed as follows:

- reproductive toxicant category 1A adverse effects on sexual function and fertility or on development (Table 3.1) or reproductive toxicant category 1 with R60 (May impair fertility) or R61 (May cause harm to the unborn child) (Table 3.2) listed in Appendix 5
- reproductive toxicant category 1B adverse effects on sexual function and fertility or on development (Table 3.1) or reproductive toxicant category 2 with R60 (May impair fertility) or R61 (May cause harm to the unborn child) (Table 3.2) listed in Appendix 6:

1. Shall not be placed on the market, or used,

- as substances,
- as constituents of other substances, or,
- in mixtures,

for supply to the general public when the individual concentration in the substance or mixture is equal to or greater than:

- either the relevant specific concentration limit specified in Part 3 of Annex VI to Regulation (EC) No 1272/2008, or,
- the relevant concentration specified in Directive 1999/45/EC.

Without prejudice to the implementation of other Community provisions relating to the classification, packaging and labelling of substances and mixtures, suppliers shall ensure before the placing on the market that the packaging of such substances and mixtures is marked visibly, legibly and indelibly as follows:

'Restricted to professional users'.

2. By way of derogation, paragraph 1 shall not apply to:

- (a) medicinal or veterinary products as defined by Directive 2001/82/EC and Directive 2001/83/EC;
- (b) cosmetic products as defined by Directive 76/768/EEC;
- (c) the following fuels and oil products:
 - motor fuels which are covered by Directive 98/70/EC,
 - mineral oil products intended for use as fuel in mobile or fixed combustion plants,
 - fuels sold in closed systems (e.g. liquid gas bottles);
- (d) artists' paints covered by Directive 1999/45/EC;
- (e) the substances listed in Appendix 11, column 1, for the applications or uses listed in Appendix 11, column 2. Where a date is specified in column 2 of Appendix 11, the derogation shall apply until the said date.

Substances classified as toxic to reproduction category 1B contained in the mixture are not subject to authorization under Title VII of Regulation (EC) No. 1907/2006. Other substances in the mixture are not subject to authorisation under Title VII or restrictions under Title VIII of Regulation (EC) No. 1907/2006.

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC;

Regulation (EC) No 1272/2008 of the European parliament and of the Council of 16 December 2008 on classification, labeling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006;

COMMISSION REGULATION (EU) No 453/2010 of 20 May 2010 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH);

DIRECTIVE 1999/45/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 31 May 1999 concerning the approximation of the laws, regulations and administrative provisions of the Member States relating to the classification, packaging and labelling of dangerous preparations;

COUNCIL DIRECTIVE of 27 June 1967 on the approximation of laws, regulations and administrative provisions relating to the classification, packaging and labelling of dangerous substances (67/548/EEC).

16. Other information

- A. Literature references and sources for data :** Korea Occupational Safety and Health Agency
SDS was elaborated according to requirements set in Annex II of Regulation (EC) No 1907/2006 of the European Parliament and of the Council. SDS was prepared using data from the producer.
- B. Date of preparation :** 27. Jul. 2017
- C. Latest revision and changes Date :** Rev. 1.1 Date : 19. Sep. 2017
- D. Explanation :** This MSDS (Material Safety Data Sheets) contains health, safety and environment information, and was written by reflecting our company's current technology. This data is not a guarantee for the product's character or quality, and should be used only as a reference in relation to safe use of the product.

List of relevant risk phrases and hazard statements :

R22 Harmful if swallowed.
R36 Irritating to eyes
R60 May impair fertility.
R61 May cause harm to the unborn child.
Xn : Harmful
Xi : Irritant

Instructions for the training : Product handling instruction shall be included into the educational system about the safety work (initial training, training at the workplace, repeated training) according to specific conditions at the workplace.

Recommended restrictions on use (i.e. non-statutory recommendations by supplier) :

Mixture should not be used for any other purpose than for which is appointed (point 1.2).
Because of the fact that specific conditions of use of mixture are out of supplier's control,
It is responsibility of the user to adjust the prescribed warnings to local laws and regulations.
Safety information describes the product in terms of safety and it cannot be considered as
technical information about product.

물질안전보건자료

(Material Safety Data Sheet)

1. Product and Company Identification

A. Product Name : EED-C440MLC (Light cyan solvent Ink)

B. Recommended use of the chemical and restrictions on use : Solvent-based ink for inkjet printer
Do not use for the other application.

C. Manufacturer :

Name : InkTec Co.,Ltd.

Address : #98-12, Neungan-ro, Danwon-gu, Ansan-city, Gyeonggi-do
425-839, Korea

Phone number : +82-31-494-0001

FAX number : +82-31-492-2041

2. Hazards Identification

A. Classification of the substance or mixture :

Classified as dangerous according to Directive 1999/45/EC :

Mixture is not classified as dangerous according to Directive 1999/45/EC.

For. Full text of R-phrases : See section 16.

Classification according to Regulation (EC) No 1272/2008 :

Mixture is not classified as dangerous according to Regulation (EC) No 1272/2008

B. Label elements, including precautionary statements

classified as dangerous according to Regulation (EC) No 1272/2008.:

Not applicable

C. Other hazards which do not result in classification :

No data available.

3. Composition Information

Substance name	% By weight	EC/CAS No.	EC No.	67/548 /EEC	Classification			Note
					Hazard Class and Category Code(s)	CLP Hazard statement	Pictogram/ Signal word	
1-ethoxy-2-(2-methoxyethoxy) ethane	55<c<65	213-690-5/ 1002-67-1	213-690-5	-	-	-	-	-
γ-butyrolactone	10<C<20	202-509-5/ 96-48-0	202-509-5	-	-	-	-	-
bis(2-ethoxyethyl) ether	10<C<20	203-963-7/ 112-36-7	203-963-7	-	-	-	-	-
Vinyl chloride/vinyl acetate copolymer resin	1<C<5	25086-48-0		-	-	-	-	-
Cyan pigment	1<C<3	proprietary	proprietary	-	-	-	-	-

¹Substance is classified in terms of Regulation (EC) No. 1272/2008 Annex VI.

²Substance with workplace exposure limits.

*For full text of H-statements and R-phrases: see SECTION 16.

4. First-aid measures

A. Description of first aid measures :

In case of respiratory exposure :

Remove to fresh air. Get medical attention for any breathing difficulty.

In case of skin contamination :

Remove contaminated clothing and wash exposed area with soap and water.

Get medical attention if irritation develops or persists.

In case of intrusion into eye :

Flush eyes with plenty of water for at least 15 minutes, lifting the upper and lower eyelids.

If irritation persists, get medical attention.

In case of oral intake :

Rinse mouth. Get medical attention.

B. Most important symptoms and effects, both acute and delayed :

No data available.

C. Indication of any immediate medical attention and special treatment needed :

No data available

5. Fire-fighting measures**A. Extinguishing media :****Suitable extinguishing media :**

Use extinguishing media appropriate for surrounding fire (dry chemical, foam, water spray, carbon dioxide)

Unsuitable extinguishing media : No data available.

B. Special hazards arising from the substance or mixture :

Fire may produce irritating or poisonous gases.

C. Advice for firefighters :

In the event of a fire, wear self-contained breathing apparatus and protective clothing.

6. Accidental release measures**A. Personal precautions, protective equipment and emergency procedures :**

For non-emergency personnel : Avoid inhalation and contact with skin, eyes and clothing.

Wear appropriate personal protective equipment as specified in Section 8. Ensure adequate ventilation.

For emergency responders : No data available.

B. Environmental precautions : Avoid dispersal of spilled material and contact with soil, ground and surface water, drains and sewers.

C. Methods and material for containment and cleaning up : Clean up spills immediately. Collect the material in labeled containers and dispose of according to local and regional authority requirements.

D. Reference to other sections : See Section 7 for information on safe handling. See Section 8 for information on personal protection equipment. See Section 13 for disposal information.

7. Handling and storage

A. Precautions for safe handling : Avoid inhalation and contact with skin, eyes and clothing. Handle in well ventilated work space. Wash thoroughly after handling. Do not eat, drink and smoke in work areas. Wear appropriate personal protective equipment as specified in Section 8.

B. Conditions for safe storage, including any incompatibilities :

Store in cool, dry and well-ventilated place. Keep away from incompatible materials.

C. Specific end use(s) : No data available.

8. Exposure controls/personal protection

A. Control parameters : Community workplace exposure limits were not established for substances contained in the mixture.

B. Exposure controls : Do not eat, drink or smoke when using this product. Immediately remove all contaminated clothing. Wash contaminated clothing before reuse. Wash hands before breaks and at the end of work.

1. Appropriate engineering controls : Use adequate ventilation.

2. Individual protection measures, such as personal protective equipment :

2.1 Eye/face protection : Wear appropriate safety glasses or goggles where eye contact is possible.

2.2 Skin protection :

Hand protection : Wear appropriate protective gloves.

Other : Wear appropriate protective clothing.

2.3 Respiratory protection : If ventilation is insufficient, use suitable respiratory protection.

2.4 Thermal hazards : No data available.

3. Environmental exposure controls : Do not allow to enter sewers, surface and ground water

9. Physical and chemical properties

Properties	Data	Properties	Data
Appearance	Light Cyan Liquid	Upper/lower flammability or explosive limits	No data available
Odor	Odorless or mild odor	Vapor pressure	No data available
Odour threshold	No data available	Vapor density	Greater than 1 (air=1)
pH	No data available	Relative density	No data available
Melting point/ Freezing point	No data available	Solubility(ies)	No data available
Initial boiling point and boiling range	172°C	Partition coefficient n-octanol/water	No data available
Flash point	80°C	Auto ignition temperature	No data available
Evaporation rate	No data available	Decomposition temperature	No data available

Flammability (Solid/Gas)	No data available	Viscosity	3.0 – 4.0 cP
Explosive properties	Possible to explode above flash point.	Oxidising properties	No data available

10. Stability and reactivity

- A. Reactivity:** No data available.
- B. Chemical stability :** The product is stable under normal conditions.
- C. Possibility of hazardous reactions :** No data available.
- D. Conditions to avoid :** No data available.
- E. Incompatible materials :** No data available
- F. Hazardous decomposition products :** No data available.

11. Toxicological information

A. Information on toxicological effects :

Substances : No data available.

Mixtures :

- Acute toxicity: No data available.
- Skin corrosion/irritation: No data available.
- Serious eye damage/irritation: No data available.
- Respiratory or skin sensitisation: No data available.
- Germ cell mutagenicity: No data available.
- Carcinogenicity: No data available.
- Reproductive toxicity: No data available.
- STOT-single exposure: No data available.
- STOT-repeated exposure: No data available.
- ASPIRATION HAZARD: NO DATA AVAILABLE.

12. Ecological information

- A. Toxicity :** No data available.
- B. Persistence and degradability :** No data available.
- C. Bio accumulative potential :** No data available.
- D. Mobility in soil :** No data available.
- E. Results of PBT and vPvB assessment :** No data available.

F. Other adverse effects : No data available.

13. Disposal considerations

A. Waste treatment methods : Dispose off in accordance with local and national regulations..

14. Transport information

- A. UN number** : No data available.
- B. UN proper shipping number** : No data available.
- C. Transport hazard class** : Not applicable.
- D. Packing group, if applicable** : Not applicable.
- E. Environmental hazards** : No data available.
- F. Special precautions for user** : Not applicable.
- G. IATA** : Not conflicting.

15. Regulatory information

- A. Regulation by the Korea Industrial Safety and Health Act** : No data available.
- B. Regulation by the Enforcement Decree of the Toxic Chemicals Control Act** : No data available.
- C. Regulation by the Safety Control of Dangerous Substances Act** : No data available.
- D. Regulation by the Waste Management Law** : Authorized waste

There are restrictions for substances classified as toxic to reproduction category 1A or 1B under Title VIII of Regulation (EC) No. 1907/2006.

Annex XVII to Regulation (EC) No 1907/2006 - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles:

Substances which appear in Part 3 of Annex VI to Regulation (EC) No 1272/2008 classified as toxic to reproduction category 1A or 1B (Table 3.1) or toxic to reproduction category 1 or 2 (Table 3.2) and listed as follows:

- reproductive toxicant category 1A adverse effects on sexual function and fertility or on development (Table 3.1) or reproductive toxicant category 1 with R60 (May impair fertility) or R61 (May cause harm to the unborn child) (Table 3.2) listed in Appendix 5
- reproductive toxicant category 1B adverse effects on sexual function and fertility or on development (Table 3.1) or reproductive toxicant category 2 with R60 (May impair fertility) or R61 (May cause harm to the unborn child) (Table 3.2) listed in Appendix 6:

1. Shall not be placed on the market, or used,

- as substances,
- as constituents of other substances, or,
- in mixtures,

for supply to the general public when the individual concentration in the substance or mixture is equal to or greater than:

- either the relevant specific concentration limit specified in Part 3 of Annex VI to Regulation (EC) No 1272/2008, or,
- the relevant concentration specified in Directive 1999/45/EC.

Without prejudice to the implementation of other Community provisions relating to the classification, packaging and labelling of substances and mixtures, suppliers shall ensure before the placing on the market that the packaging of such substances and mixtures is marked visibly, legibly and indelibly as follows:

'Restricted to professional users'.

2. By way of derogation, paragraph 1 shall not apply to:

- (a) medicinal or veterinary products as defined by Directive 2001/82/EC and Directive 2001/83/EC;
- (b) cosmetic products as defined by Directive 76/768/EEC;
- (c) the following fuels and oil products:
 - motor fuels which are covered by Directive 98/70/EC,
 - mineral oil products intended for use as fuel in mobile or fixed combustion plants,
 - fuels sold in closed systems (e.g. liquid gas bottles);
- (d) artists' paints covered by Directive 1999/45/EC;
- (e) the substances listed in Appendix 11, column 1, for the applications or uses listed in Appendix 11, column 2. Where a date is specified in column 2 of Appendix 11, the derogation shall apply until the said date.

Substances classified as toxic to reproduction category 1B contained in the mixture are not subject to authorization under Title VII of Regulation (EC) No. 1907/2006. Other substances in the mixture are not subject to authorisation under Title VII or restrictions under Title VIII of Regulation (EC) No. 1907/2006.

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC;

Regulation (EC) No 1272/2008 of the European parliament and of the Council of 16 December 2008 on classification, labeling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006;

COMMISSION REGULATION (EU) No 453/2010 of 20 May 2010 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH);

DIRECTIVE 1999/45/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 31 May 1999 concerning the approximation of the laws, regulations and administrative provisions of the Member States relating to the classification, packaging and labelling of dangerous preparations;

COUNCIL DIRECTIVE of 27 June 1967 on the approximation of laws, regulations and administrative provisions relating to the classification, packaging and labelling of dangerous substances (67/548/EEC).

16. Other information

- A. Literature references and sources for data :** Korea Occupational Safety and Health Agency
SDS was elaborated according to requirements set in Annex II of Regulation (EC) No 1907/2006 of the European Parliament and of the Council. SDS was prepared using data from the producer.
- B. Date of preparation :** 27. Jul. 2017
- C. Latest revision and changes Date :** Rev. 1.1 Date : 19. Sep. 2017
- D. Explanation :** This MSDS (Material Safety Data Sheets) contains health, safety and environment information, and was written by reflecting our company's current technology. This data is not a guarantee for the product's character or quality, and should be used only as a reference in relation to safe use of the product.

List of relevant risk phrases and hazard statements :

R22 Harmful if swallowed.
R36 Irritating to eyes
R60 May impair fertility.
R61 May cause harm to the unborn child.
Xn : Harmful
Xi : Irritant

Instructions for the training : Product handling instruction shall be included into the educational system about the safety work (initial training, training at the workplace, repeated training) according to specific conditions at the workplace.

Recommended restrictions on use (i.e. non-statutory recommendations by supplier) :

Mixture should not be used for any other purpose than for which is appointed (point 1.2).
Because of the fact that specific conditions of use of mixture are out of supplier's control,
It is responsibility of the user to adjust the prescribed warnings to local laws and regulations.
Safety information describes the product in terms of safety and it cannot be considered as
technical information about product.

물질안전보건자료

(Material Safety Data Sheet)

1. Product and Company Identification

A. Product Name : EED-C440MLM (Light magenta solvent Ink)

B. Recommended use of the chemical and restrictions on use : Solvent-based ink for inkjet printer
Do not use for the other application.

C. Manufacturer :

Name : InkTec Co.,Ltd.

Address : #98-12, Neungan-ro, Danwon-gu, Ansan-city, Gyeonggi-do
425-839, Korea

Phone number : +82-31-494-0001

FAX number : +82-31-492-2041

2. Hazards Identification

A. Classification of the substance or mixture :

Classified as dangerous according to Directive 1999/45/EC :

Mixture is not classified as dangerous according to Directive 1999/45/EC.

For. Full text of R-phrases : See section 16.

Classification according to Regulation (EC) No 1272/2008 :

Mixture is not classified as dangerous according to Regulation (EC) No 1272/2008

B. Label elements, including precautionary statements

classified as dangerous according to Regulation (EC) No 1272/2008.:

Not applicable

C. Other hazards which do not result in classification :

No data available.

3. Composition Information

Substance name	% By weight	EC/CAS No.	EC No.	67/548 /EEC	Classification			Note
					Hazard Class and Category Code(s)	CLP Hazard statement	Pictogram/ Signal word	
1-ethoxy-2-(2-methoxyethoxy) ethane	55<c<65	213-690-5/ 1002-67-1	213-690-5	-	-	-	-	-
γ-butyrolactone	10<C<20	202-509-5/ 96-48-0	202-509-5	-	-	-	-	-
bis(2-ethoxyethyl) ether	10<C<20	203-963-7/ 112-36-7	203-963-7	-	-	-	-	-
Vinyl chloride/vinyl acetate copolymer resin	1<C<5	25086-48-0		-	-	-	-	-
Magenta pigment	1<C<3	proprietary	proprietary	-	-	-	-	-

¹Substance is classified in terms of Regulation (EC) No. 1272/2008 Annex VI.

²Substance with workplace exposure limits.

*For full text of H-statements and R-phrases: see SECTION 16.

4. First-aid measures

A. Description of first aid measures :

In case of respiratory exposure :

Remove to fresh air. Get medical attention for any breathing difficulty.

In case of skin contamination :

Remove contaminated clothing and wash exposed area with soap and water.

Get medical attention if irritation develops or persists.

In case of intrusion into eye :

Flush eyes with plenty of water for at least 15 minutes, lifting the upper and lower eyelids.

If irritation persists, get medical attention.

In case of oral intake :

Rinse mouth. Get medical attention.

B. Most important symptoms and effects, both acute and delayed :

No data available.

C. Indication of any immediate medical attention and special treatment needed :

No data available

5. Fire-fighting measures**A. Extinguishing media :****Suitable extinguishing media :**

Use extinguishing media appropriate for surrounding fire (dry chemical, foam, water spray, carbon dioxide)

Unsuitable extinguishing media : No data available.

B. Special hazards arising from the substance or mixture :

Fire may produce irritating or poisonous gases.

C. Advice for firefighters :

In the event of a fire, wear self-contained breathing apparatus and protective clothing.

6 Accidental release measures**A. Personal precautions, protective equipment and emergency procedures :**

For non-emergency personnel : Avoid inhalation and contact with skin, eyes and clothing.

Wear appropriate personal protective equipment as specified in Section 8. Ensure adequate ventilation.

For emergency responders : No data available.

B. Environmental precautions : Avoid dispersal of spilled material and contact with soil, ground and surface water, drains and sewers.

C. Methods and material for containment and cleaning up : Clean up spills immediately. Collect the material in labeled containers and dispose of according to local and regional authority requirements.

D. Reference to other sections : See Section 7 for information on safe handling. See Section 8 for information on personal protection equipment. See Section 13 for disposal information.

7. Handling and storage

A. Precautions for safe handling : Avoid inhalation and contact with skin, eyes and clothing. Handle in well ventilated work space. Wash thoroughly after handling. Do not eat, drink and smoke in work areas. Wear appropriate personal protective equipment as specified in Section 8.

B. Conditions for safe storage, including any incompatibilities :

Store in cool, dry and well-ventilated place. Keep away from incompatible materials.

C. Specific end use(s) : No data available.

8. Exposure controls/personal protection

A. Control parameters : Community workplace exposure limits were not established for substances contained in the mixture.

B. Exposure controls : Do not eat, drink or smoke when using this product. Immediately remove all contaminated clothing. Wash contaminated clothing before reuse. Wash hands before breaks and at the end of work.

1. Appropriate engineering controls : Use adequate ventilation.

2. Individual protection measures, such as personal protective equipment :

2.1 Eye/face protection : Wear appropriate safety glasses or goggles where eye contact is possible.

2.2 Skin protection :

Hand protection : Wear appropriate protective gloves.

Other : Wear appropriate protective clothing.

2.3 Respiratory protection : If ventilation is insufficient, use suitable respiratory protection.

2.4 Thermal hazards : No data available.

3. Environmental exposure controls : Do not allow to enter sewers, surface and ground water

9. Physical and chemical properties

Properties	Data	Properties	Data
Appearance	Light Magenta Liquid	Upper/lower flammability or explosive limits	No data available
Odor	Odorless or mild odor	Vapor pressure	No data available
Odour threshold	No data available	Vapor density	Greater than 1 (air=1)
pH	No data available	Relative density	No data available
Melting point/ Freezing point	No data available	Solubility(ies)	No data available
Initial boiling point and boiling range	172°C	Partition coefficient n-octanol/water	No data available
Flash point	80°C	Auto ignition temperature	No data available
Evaporation rate	No data available	Decomposition temperature	No data available

Flammability (Solid/Gas)	No data available	Viscosity	3.0 – 4.0 cP
Explosive properties	Possible to explode above flash point.	Oxidising properties	No data available

10. Stability and reactivity

- A. Reactivity** : No data available.
- B. Chemical stability** : The product is stable under normal conditions.
- C. Possibility of hazardous reactions** : No data available.
- D. Conditions to avoid** : No data available.
- E. Incompatible materials** : No data available
- F. Hazardous decomposition products** : No data available.

11. Toxicological information

A. Information on toxicological effects :

Substances : No data available.

Mixtures :

- Acute toxicity: No data available.
- Skin corrosion/irritation: No data available.
- Serious eye damage/irritation: No data available.
- Respiratory or skin sensitisation: No data available.
- Germ cell mutagenicity: No data available.
- Carcinogenicity: No data available.
- Reproductive toxicity: No data available.
- STOT-single exposure: No data available.
- STOT-repeated exposure: No data available.
- ASPIRATION HAZARD: NO DATA AVAILABLE.

12. Ecological information

- A. Toxicity** : No data available.
- B. Persistence and degradability** : No data available.
- C. Bio accumulative potential** : No data available.
- D. Mobility in soil** : No data available.
- E. Results of PBT and vPvB assessment** : No data available.

F. Other adverse effects : No data available.

13. Disposal considerations

A. Waste treatment methods : Dispose off in accordance with local and national regulations..

14. Transport information

- A. UN number** : No data available.
- B. UN proper shipping number** : No data available.
- C. Transport hazard class** : Not applicable.
- D. Packing group, if applicable** : Not applicable.
- E. Environmental hazards** : No data available.
- F. Special precautions for user** : Not applicable.
- G. IATA** : Not conflicting.

15. Regulatory information

- A. Regulation by the Korea Industrial Safety and Health Act** : No data available.
- B. Regulation by the Enforcement Decree of the Toxic Chemicals Control Act** : No data available.
- C. Regulation by the Safety Control of Dangerous Substances Act** : No data available.
- D. Regulation by the Waste Management Law** : Authorized waste

There are restrictions for substances classified as toxic to reproduction category 1A or 1B under Title VIII of Regulation (EC) No. 1907/2006.

Annex XVII to Regulation (EC) No 1907/2006 - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles:

Substances which appear in Part 3 of Annex VI to Regulation (EC) No 1272/2008 classified as toxic to reproduction category 1A or 1B (Table 3.1) or toxic to reproduction category 1 or 2 (Table 3.2) and listed as follows:

- reproductive toxicant category 1A adverse effects on sexual function and fertility or on development (Table 3.1) or reproductive toxicant category 1 with R60 (May impair fertility) or R61 (May cause harm to the unborn child) (Table 3.2) listed in Appendix 5
- reproductive toxicant category 1B adverse effects on sexual function and fertility or on development (Table 3.1) or reproductive toxicant category 2 with R60 (May impair fertility) or R61 (May cause harm to the unborn child) (Table 3.2) listed in Appendix 6:

1. Shall not be placed on the market, or used,

- as substances,
- as constituents of other substances, or,
- in mixtures,

for supply to the general public when the individual concentration in the substance or mixture is equal to or greater than:

- either the relevant specific concentration limit specified in Part 3 of Annex VI to Regulation (EC) No 1272/2008, or,
- the relevant concentration specified in Directive 1999/45/EC.

Without prejudice to the implementation of other Community provisions relating to the classification, packaging and labelling of substances and mixtures, suppliers shall ensure before the placing on the market that the packaging of such substances and mixtures is marked visibly, legibly and indelibly as follows:

'Restricted to professional users'.

2. By way of derogation, paragraph 1 shall not apply to:

- (a) medicinal or veterinary products as defined by Directive 2001/82/EC and Directive 2001/83/EC;
- (b) cosmetic products as defined by Directive 76/768/EEC;
- (c) the following fuels and oil products:
 - motor fuels which are covered by Directive 98/70/EC,
 - mineral oil products intended for use as fuel in mobile or fixed combustion plants,
 - fuels sold in closed systems (e.g. liquid gas bottles);
- (d) artists' paints covered by Directive 1999/45/EC;
- (e) the substances listed in Appendix 11, column 1, for the applications or uses listed in Appendix 11, column 2. Where a date is specified in column 2 of Appendix 11, the derogation shall apply until the said date.

Substances classified as toxic to reproduction category 1B contained in the mixture are not subject to authorization under Title VII of Regulation (EC) No. 1907/2006. Other substances in the mixture are not subject to authorisation under Title VII or restrictions under Title VIII of Regulation (EC) No. 1907/2006.

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC;

Regulation (EC) No 1272/2008 of the European parliament and of the Council of 16 December 2008 on classification, labeling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006;

COMMISSION REGULATION (EU) No 453/2010 of 20 May 2010 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH);

DIRECTIVE 1999/45/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 31 May 1999 concerning the approximation of the laws, regulations and administrative provisions of the Member States relating to the classification, packaging and labelling of dangerous preparations;

COUNCIL DIRECTIVE of 27 June 1967 on the approximation of laws, regulations and administrative provisions relating to the classification, packaging and labelling of dangerous substances (67/548/EEC).

16. Other information

- A. Literature references and sources for data :** Korea Occupational Safety and Health Agency
SDS was elaborated according to requirements set in Annex II of Regulation (EC) No 1907/2006 of the European Parliament and of the Council. SDS was prepared using data from the producer.
- B. Date of preparation :** 27. Jul. 2017
- C. Latest revision and changes Date :** Rev. 1.1 Date : 19. Sep. 2017
- D. Explanation :** This MSDS (Material Safety Data Sheets) contains health, safety and environment information, and was written by reflecting our company's current technology. This data is not a guarantee for the product's character or quality, and should be used only as a reference in relation to safe use of the product.

List of relevant risk phrases and hazard statements :

R22 Harmful if swallowed.
R36 Irritating to eyes
R60 May impair fertility.
R61 May cause harm to the unborn child.
Xn : Harmful
Xi : Irritant

Instructions for the training : Product handling instruction shall be included into the educational system about the safety work (initial training, training at the workplace, repeated training) according to specific conditions at the workplace.

Recommended restrictions on use (i.e. non-statutory recommendations by supplier) :

Mixture should not be used for any other purpose than for which is appointed (point 1.2).
Because of the fact that specific conditions of use of mixture are out of supplier's control,
It is responsibility of the user to adjust the prescribed warnings to local laws and regulations.
Safety information describes the product in terms of safety and it cannot be considered as
technical information about product.

물질안전보건자료

(Material Safety Data Sheet)

1. Product and Company Identification

A. Product Name : EED-C440MM (Magenta solvent Ink)

B. Recommended use of the chemical and restrictions on use : Solvent-based ink for inkjet printer
Do not use for the other application.

C. Manufacturer :

Name : InkTec Co.,Ltd.

Address : #98-12, Neungan-ro, Danwon-gu, Ansan-city, Gyeonggi-do
425-839, Korea

Phone number : +82-31-494-0001

FAX number : +82-31-492-2041

2. Hazards Identification

A. Classification of the substance or mixture :

Classified as dangerous according to Directive 1999/45/EC :

Mixture is not classified as dangerous according to Directive 1999/45/EC.

For. Full text of R-phrases : See section 16.

Classification according to Regulation (EC) No 1272/2008 :

Mixture is not classified as dangerous according to Regulation (EC) No 1272/2008

B. Label elements, including precautionary statements

classified as dangerous according to Regulation (EC) No 1272/2008.:

Not applicable

C. Other hazards which do not result in classification :

No data available.

3. Composition Information

Substance name	% By weight	EC/CAS No.	EC No.	67/548 /EEC	Classification			Note
					Hazard Class and Category Code(s)	CLP Hazard statement	Pictogram/ Signal word	
1-ethoxy-2-(2-methoxyethoxy) ethane	50<c<60	213-690-5/ 1002-67-1	213-690-5	-	-	-	-	-
γ-butyrolactone	10<C<20	202-509-5/ 96-48-0	202-509-5	-	-	-	-	-
bis(2-ethoxyethyl) ether	10<C<20	203-963-7/ 112-36-7	203-963-7	-	-	-	-	-
Vinyl chloride/vinyl acetate copolymer resin	1<C<5	25086-48-0		-	-	-	-	-
Magenta pigment	1<C<5	proprietary	proprietary	-	-	-	-	-

¹Substance is classified in terms of Regulation (EC) No. 1272/2008 Annex VI.

²Substance with workplace exposure limits.

*For full text of H-statements and R-phrases: see SECTION 16.

4. First-aid measures

A. Description of first aid measures :

In case of respiratory exposure :

Remove to fresh air. Get medical attention for any breathing difficulty.

In case of skin contamination :

Remove contaminated clothing and wash exposed area with soap and water.

Get medical attention if irritation develops or persists.

In case of intrusion into eye :

Flush eyes with plenty of water for at least 15 minutes, lifting the upper and lower eyelids.

If irritation persists, get medical attention.

In case of oral intake :

Rinse mouth. Get medical attention.

B. Most important symptoms and effects, both acute and delayed :

No data available.

C. Indication of any immediate medical attention and special treatment needed :

No data available

5. Fire-fighting measures**A. Extinguishing media :****Suitable extinguishing media :**

Use extinguishing media appropriate for surrounding fire (dry chemical, foam, water spray, carbon dioxide)

Unsuitable extinguishing media : No data available.

B. Special hazards arising from the substance or mixture :

Fire may produce irritating or poisonous gases.

C. Advice for firefighters :

In the event of a fire, wear self-contained breathing apparatus and protective clothing.

6. Accidental release measures**A. Personal precautions, protective equipment and emergency procedures :**

For non-emergency personnel : Avoid inhalation and contact with skin, eyes and clothing.

Wear appropriate personal protective equipment as specified in Section 8. Ensure adequate ventilation.

For emergency responders : No data available.

B. Environmental precautions: Avoid dispersal of spilled material and contact with soil, ground and surface water, drains and sewers.

C. Methods and material for containment and cleaning up : Clean up spills immediately. Collect the material in labeled containers and dispose of according to local and regional authority requirements.

D. Reference to other sections : See Section 7 for information on safe handling. See Section 8 for information on personal protection equipment. See Section 13 for disposal information.

7. Handling and storage

A. Precautions for safe handling : Avoid inhalation and contact with skin, eyes and clothing. Handle in well ventilated work space. Wash thoroughly after handling. Do not eat, drink and smoke in work areas. Wear appropriate personal protective equipment as specified in Section 8.

B. Conditions for safe storage, including any incompatibilities :

Store in cool, dry and well-ventilated place. Keep away from incompatible materials.

C. Specific end use(s) : No data available.

8. Exposure controls/personal protection

A. Control parameters : Community workplace exposure limits were not established for substances contained in the mixture.

B. Exposure controls : Do not eat, drink or smoke when using this product. Immediately remove all contaminated clothing. Wash contaminated clothing before reuse. Wash hands before breaks and at the end of work.

1. Appropriate engineering controls : Use adequate ventilation.

2. Individual protection measures, such as personal protective equipment :

2.1 Eye/face protection : Wear appropriate safety glasses or goggles where eye contact is possible.

2.2 Skin protection :

Hand protection : Wear appropriate protective gloves.

Other : Wear appropriate protective clothing.

2.3 Respiratory protection : If ventilation is insufficient, use suitable respiratory protection.

2.4 Thermal hazards : No data available.

3. Environmental exposure controls : Do not allow to enter sewers, surface and ground water

9. Physical and chemical properties

Properties	Data	Properties	Data
Appearance	Magenta Liquid	Upper/lower flammability or explosive limits	No data available
Odor	Odorless or mild odor	Vapor pressure	No data available
Odour threshold	No data available	Vapor density	Greater than 1 (air=1)
pH	No data available	Relative density	No data available
Melting point/ Freezing point	No data available	Solubility(ies)	No data available
Initial boiling point and boiling range	172°C	Partition coefficient n-octanol/water	No data available
Flash point	80°C	Auto ignition temperature	No data available
Evaporation rate	No data available	Decomposition temperature	No data available

Flammability (Solid/Gas)	No data available	Viscosity	3.0 – 4.0 cP
Explosive properties	Possible to explode above flash point.	Oxidising properties	No data available

10. Stability and reactivity

- A. Reactivity** : No data available.
- B. Chemical stability** : The product is stable under normal conditions.
- C. Possibility of hazardous reactions** : No data available.
- D. Conditions to avoid** : No data available.
- E. Incompatible materials** : No data available
- F. Hazardous decomposition products** : No data available.

11. Toxicological information

A. Information on toxicological effects :

Substances : No data available.

Mixtures :

- Acute toxicity: No data available.
- Skin corrosion/irritation: No data available.
- Serious eye damage/irritation: No data available.
- Respiratory or skin sensitisation: No data available.
- Germ cell mutagenicity: No data available.
- Carcinogenicity: No data available.
- Reproductive toxicity: No data available.
- STOT-single exposure: No data available.
- STOT-repeated exposure: No data available.
- ASPIRATION HAZARD: NO DATA AVAILABLE.

12. Ecological information

- A. Toxicity** : No data available.
- B. Persistence and degradability** : No data available.
- C. Bio accumulative potential** : No data available.
- D. Mobility in soil** : No data available.
- E. Results of PBT and vPvB assessment** : No data available.

F. Other adverse effects : No data available.

13. Disposal considerations

A. Waste treatment methods : Dispose off in accordance with local and national regulations..

14. Transport information

- A. UN number** : No data available.
- B. UN proper shipping number** : No data available.
- C. Transport hazard class** : Not applicable.
- D. Packing group, if applicable** : Not applicable.
- E. Environmental hazards** : No data available.
- F. Special precautions for user** : Not applicable.
- G. IATA** : Not conflicting.

15. Regulatory information

- A. Regulation by the Korea Industrial Safety and Health Act** : No data available.
- B. Regulation by the Enforcement Decree of the Toxic Chemicals Control Act** : No data available.
- C. Regulation by the Safety Control of Dangerous Substances Act** : No data available.
- D. Regulation by the Waste Management Law** : Authorized waste

There are restrictions for substances classified as toxic to reproduction category 1A or 1B under Title VIII of Regulation (EC) No. 1907/2006.

Annex XVII to Regulation (EC) No 1907/2006 - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles:

Substances which appear in Part 3 of Annex VI to Regulation (EC) No 1272/2008 classified as toxic to reproduction category 1A or 1B (Table 3.1) or toxic to reproduction category 1 or 2 (Table 3.2) and listed as follows:

- reproductive toxicant category 1A adverse effects on sexual function and fertility or on development (Table 3.1) or reproductive toxicant category 1 with R60 (May impair fertility) or R61 (May cause harm to the unborn child) (Table 3.2) listed in Appendix 5
- reproductive toxicant category 1B adverse effects on sexual function and fertility or on development (Table 3.1) or reproductive toxicant category 2 with R60 (May impair fertility) or R61 (May cause harm to the unborn child) (Table 3.2) listed in Appendix 6:

1. Shall not be placed on the market, or used,

- as substances,
- as constituents of other substances, or,
- in mixtures,

for supply to the general public when the individual concentration in the substance or mixture is equal to or greater than:

- either the relevant specific concentration limit specified in Part 3 of Annex VI to Regulation (EC) No 1272/2008, or,
- the relevant concentration specified in Directive 1999/45/EC.

Without prejudice to the implementation of other Community provisions relating to the classification, packaging and labelling of substances and mixtures, suppliers shall ensure before the placing on the market that the packaging of such substances and mixtures is marked visibly, legibly and indelibly as follows:

'Restricted to professional users'.

2. By way of derogation, paragraph 1 shall not apply to:

- (a) medicinal or veterinary products as defined by Directive 2001/82/EC and Directive 2001/83/EC;
- (b) cosmetic products as defined by Directive 76/768/EEC;
- (c) the following fuels and oil products:
 - motor fuels which are covered by Directive 98/70/EC,
 - mineral oil products intended for use as fuel in mobile or fixed combustion plants,
 - fuels sold in closed systems (e.g. liquid gas bottles);
- (d) artists' paints covered by Directive 1999/45/EC;
- (e) the substances listed in Appendix 11, column 1, for the applications or uses listed in Appendix 11, column 2. Where a date is specified in column 2 of Appendix 11, the derogation shall apply until the said date.

Substances classified as toxic to reproduction category 1B contained in the mixture are not subject to authorization under Title VII of Regulation (EC) No. 1907/2006. Other substances in the mixture are not subject to authorisation under Title VII or restrictions under Title VIII of Regulation (EC) No. 1907/2006.

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC;

Regulation (EC) No 1272/2008 of the European parliament and of the Council of 16 December 2008 on classification, labeling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006;

COMMISSION REGULATION (EU) No 453/2010 of 20 May 2010 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH);

DIRECTIVE 1999/45/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 31 May 1999 concerning the approximation of the laws, regulations and administrative provisions of the Member States relating to the classification, packaging and labelling of dangerous preparations;

COUNCIL DIRECTIVE of 27 June 1967 on the approximation of laws, regulations and administrative provisions relating to the classification, packaging and labelling of dangerous substances (67/548/EEC).

16. Other information

- A. Literature references and sources for data :** Korea Occupational Safety and Health Agency
SDS was elaborated according to requirements set in Annex II of Regulation (EC) No 1907/2006 of the European Parliament and of the Council. SDS was prepared using data from the producer.
- B. Date of preparation :** 22. Feb. 2016
- C. Latest revision and changes Date :** Rev. 1.2 Date : 19. Sep. 2017
- D. Explanation :** This MSDS (Material Safety Data Sheets) contains health, safety and environment information, and was written by reflecting our company's current technology. This data is not a guarantee for the product's character or quality, and should be used only as a reference in relation to safe use of the product.

List of relevant risk phrases and hazard statements :

R22 Harmful if swallowed.
R36 Irritating to eyes
R60 May impair fertility.
R61 May cause harm to the unborn child.
Xn : Harmful
Xi : Irritant

Instructions for the training : Product handling instruction shall be included into the educational system about the safety work (initial training, training at the workplace, repeated training) according to specific conditions at the workplace.

Recommended restrictions on use (i.e. non-statutory recommendations by supplier) :

Mixture should not be used for any other purpose than for which is appointed (point 1.2).
Because of the fact that specific conditions of use of mixture are out of supplier's control,
It is responsibility of the user to adjust the prescribed warnings to local laws and regulations.
Safety information describes the product in terms of safety and it cannot be considered as
technical information about product.

물질안전보건자료

(Material Safety Data Sheet)

1. Product and Company Identification

A. Product Name : EED-C440MY (Yellow solvent Ink)

B. Recommended use of the chemical and restrictions on use : Solvent-based ink for inkjet printer
Do not use for the other application.

C. Manufacturer :

Name : InkTec Co.,Ltd.

Address : #98-12, Neungan-ro, Danwon-gu, Ansan-city, Gyeonggi-do
425-839, Korea

Phone number : +82-31-494-0001

FAX number : +82-31-492-2041

2. Hazards Identification

A. Classification of the substance or mixture :

Classified as dangerous according to Directive 1999/45/EC :

Mixture is not classified as dangerous according to Directive 1999/45/EC.

For. Full text of R-phrases : See section 16.

Classification according to Regulation (EC) No 1272/2008 :

Mixture is not classified as dangerous according to Regulation (EC) No 1272/2008

B. Label elements, including precautionary statements

classified as dangerous according to Regulation (EC) No 1272/2008.:

Not applicable

C. Other hazards which do not result in classification :

No data available.

3. Composition Information

Substance name	% By weight	EC/CAS No.	EC No.	67/548 /EEC	Classification CLP			Note
					Hazard Class and Category Code(s)	Hazard statement	Pictogram/ Signal word	
1-ethoxy-2-(2-methoxyethoxy) ethane	50<c<60	213-690-5/ 1002-67-1	213-690-5	-	-	-	-	-
γ-butyrolactone	10<C<20	202-509-5/ 96-48-0	202-509-5	-	-	-	-	-
bis(2-ethoxyethyl) ether	10<C<20	203-963-7/ 112-36-7	203-963-7	-	-	-	-	-
Vinyl chloride/vinyl acetate copolymer resin	1<C<5	25086-48-0		-	-	-	-	-
Yellow pigment	1<C<5	proprietary	proprietary	-	-	-	-	-

¹Substance is classified in terms of Regulation (EC) No. 1272/2008 Annex VI.

²Substance with workplace exposure limits.

*For full text of H-statements and R-phrases: see SECTION 16.

4. First-aid measures

A. Description of first aid measures :

In case of respiratory exposure :

Remove to fresh air. Get medical attention for any breathing difficulty.

In case of skin contamination :

Remove contaminated clothing and wash exposed area with soap and water.

Get medical attention if irritation develops or persists.

In case of intrusion into eye :

Flush eyes with plenty of water for at least 15 minutes, lifting the upper and lower eyelids.

If irritation persists, get medical attention.

In case of oral intake :

Rinse mouth. Get medical attention.

B. Most important symptoms and effects, both acute and delayed :

No data available.

C. Indication of any immediate medical attention and special treatment needed :

No data available

5. Fire-fighting measures**A. Extinguishing media :****Suitable extinguishing media :**

Use extinguishing media appropriate for surrounding fire (dry chemical, foam, water spray, carbon dioxide)

Unsuitable extinguishing media : No data available.

B. Special hazards arising from the substance or mixture :

Fire may produce irritating or poisonous gases.

C. Advice for firefighters :

In the event of a fire, wear self-contained breathing apparatus and protective clothing.

6. Accidental release measures**A. Personal precautions, protective equipment and emergency procedures :**

For non-emergency personnel : Avoid inhalation and contact with skin, eyes and clothing.

Wear appropriate personal protective equipment as specified in Section 8. Ensure adequate ventilation.

For emergency responders : No data available.

B. Environmental precautions : Avoid dispersal of spilled material and contact with soil, ground and surface water, drains and sewers.

C. Methods and material for containment and cleaning up : Clean up spills immediately. Collect the material in labeled containers and dispose of according to local and regional authority requirements.

D. Reference to other sections : See Section 7 for information on safe handling. See Section 8 for information on personal protection equipment. See Section 13 for disposal information.

7. Handling and storage

A. Precautions for safe handling : Avoid inhalation and contact with skin, eyes and clothing. Handle in well ventilated work space. Wash thoroughly after handling. Do not eat, drink and smoke in work areas. Wear appropriate personal protective equipment as specified in Section 8.

B. Conditions for safe storage, including any incompatibilities :

Store in cool, dry and well-ventilated place. Keep away from incompatible materials.

C. Specific end use(s) : No data available.

8. Exposure controls/personal protection

A. Control parameters : Community workplace exposure limits were not established for substances contained in the mixture.

B. Exposure controls : Do not eat, drink or smoke when using this product. Immediately remove all contaminated clothing. Wash contaminated clothing before reuse. Wash hands before breaks and at the end of work.

1. Appropriate engineering controls : Use adequate ventilation.

2. Individual protection measures, such as personal protective equipment :

2.1 Eye/face protection : Wear appropriate safety glasses or goggles where eye contact is possible.

2.2 Skin protection :

Hand protection : Wear appropriate protective gloves.

Other : Wear appropriate protective clothing.

2.3 Respiratory protection : If ventilation is insufficient, use suitable respiratory protection.

2.4 Thermal hazards : No data available.

3. Environmental exposure controls : Do not allow to enter sewers, surface and ground water

9. Physical and chemical properties

Properties	Data	Properties	Data
Appearance	Yellow Liquid	Upper/lower flammability or explosive limits	No data available
Odor	Odorless or mild odor	Vapor pressure	No data available
Odour threshold	No data available	Vapor density	Greater than 1 (air=1)
pH	No data available	Relative density	No data available
Melting point/ Freezing point	No data available	Solubility(ies)	No data available
Initial boiling point and boiling range	172°C	Partition coefficient n-octanol/water	No data available
Flash point	80°C	Auto ignition temperature	No data available
Evaporation rate	No data available	Decomposition temperature	No data available

Flammability (Solid/Gas)	No data available	Viscosity	3.0 – 4.0 cP
Explosive properties	Possible to explode above flash point.	Oxidising properties	No data available

10. Stability and reactivity

- A. Reactivity** : No data available.
- B. Chemical stability** : The product is stable under normal conditions.
- C. Possibility of hazardous reactions** : No data available.
- D. Conditions to avoid** : No data available.
- E. Incompatible materials** : No data available
- F. Hazardous decomposition products** : No data available.

11. Toxicological information

A. Information on toxicological effects :

Substances : No data available.

Mixtures :

- Acute toxicity: No data available.
- Skin corrosion/irritation: No data available.
- Serious eye damage/irritation: No data available.
- Respiratory or skin sensitisation: No data available.
- Germ cell mutagenicity: No data available.
- Carcinogenicity: No data available.
- Reproductive toxicity: No data available.
- STOT-single exposure: No data available.
- STOT-repeated exposure: No data available.
- ASPIRATION HAZARD: NO DATA AVAILABLE.

12. Ecological information

- A. Toxicity** : No data available.
- B. Persistence and degradability** : No data available.
- C. Bio accumulative potential** : No data available.
- D. Mobility in soil** : No data available.
- E. Results of PBT and vPvB assessment** : No data available.

F. Other adverse effects : No data available.

13. Disposal considerations

A. Waste treatment methods : Dispose off in accordance with local and national regulations..

14. Transport information

- A. UN number** : No data available.
- B. UN proper shipping number** : No data available.
- C. Transport hazard class** : Not applicable.
- D. Packing group, if applicable** : Not applicable.
- E. Environmental hazards** : No data available.
- F. Special precautions for user** : Not applicable.
- G. IATA** : Not conflicting.

15. Regulatory information

- A. Regulation by the Korea Industrial Safety and Health Act** : No data available.
- B. Regulation by the Enforcement Decree of the Toxic Chemicals Control Act** : No data available.
- C. Regulation by the Safety Control of Dangerous Substances Act** : No data available.
- D. Regulation by the Waste Management Law** : Authorized waste

There are restrictions for substances classified as toxic to reproduction category 1A or 1B under Title VIII of Regulation (EC) No. 1907/2006.

Annex XVII to Regulation (EC) No 1907/2006 - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles:

Substances which appear in Part 3 of Annex VI to Regulation (EC) No 1272/2008 classified as toxic to reproduction category 1A or 1B (Table 3.1) or toxic to reproduction category 1 or 2 (Table 3.2) and listed as follows:

- reproductive toxicant category 1A adverse effects on sexual function and fertility or on development (Table 3.1) or reproductive toxicant category 1 with R60 (May impair fertility) or R61 (May cause harm to the unborn child) (Table 3.2) listed in Appendix 5
- reproductive toxicant category 1B adverse effects on sexual function and fertility or on development (Table 3.1) or reproductive toxicant category 2 with R60 (May impair fertility) or R61 (May cause harm to the unborn child) (Table 3.2) listed in Appendix 6:

1. Shall not be placed on the market, or used,

- as substances,
- as constituents of other substances, or,
- in mixtures,

for supply to the general public when the individual concentration in the substance or mixture is equal to or greater than:

- either the relevant specific concentration limit specified in Part 3 of Annex VI to Regulation (EC) No 1272/2008, or,
- the relevant concentration specified in Directive 1999/45/EC.

Without prejudice to the implementation of other Community provisions relating to the classification, packaging and labelling of substances and mixtures, suppliers shall ensure before the placing on the market that the packaging of such substances and mixtures is marked visibly, legibly and indelibly as follows:

'Restricted to professional users'.

2. By way of derogation, paragraph 1 shall not apply to:

- (a) medicinal or veterinary products as defined by Directive 2001/82/EC and Directive 2001/83/EC;
- (b) cosmetic products as defined by Directive 76/768/EEC;
- (c) the following fuels and oil products:
 - motor fuels which are covered by Directive 98/70/EC,
 - mineral oil products intended for use as fuel in mobile or fixed combustion plants,
 - fuels sold in closed systems (e.g. liquid gas bottles);
- (d) artists' paints covered by Directive 1999/45/EC;
- (e) the substances listed in Appendix 11, column 1, for the applications or uses listed in Appendix 11, column 2. Where a date is specified in column 2 of Appendix 11, the derogation shall apply until the said date.

Substances classified as toxic to reproduction category 1B contained in the mixture are not subject to authorization under Title VII of Regulation (EC) No. 1907/2006. Other substances in the mixture are not subject to authorisation under Title VII or restrictions under Title VIII of Regulation (EC) No. 1907/2006.

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC;

Regulation (EC) No 1272/2008 of the European parliament and of the Council of 16 December 2008 on classification, labeling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006;

COMMISSION REGULATION (EU) No 453/2010 of 20 May 2010 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH);

DIRECTIVE 1999/45/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 31 May 1999 concerning the approximation of the laws, regulations and administrative provisions of the Member States relating to the classification, packaging and labelling of dangerous preparations;

COUNCIL DIRECTIVE of 27 June 1967 on the approximation of laws, regulations and administrative provisions relating to the classification, packaging and labelling of dangerous substances (67/548/EEC).

16. Other information

- A. Literature references and sources for data :** Korea Occupational Safety and Health Agency
SDS was elaborated according to requirements set in Annex II of Regulation (EC) No 1907/2006 of the European Parliament and of the Council. SDS was prepared using data from the producer.
- B. Date of preparation :** 27. Jul. 2017
- C. Latest revision and changes Date :** Rev. 1.1 Date : 19. Sep. 2017
- D. Explanation :** This MSDS (Material Safety Data Sheets) contains health, safety and environment information, and was written by reflecting our company's current technology. This data is not a guarantee for the product's character or quality, and should be used only as a reference in relation to safe use of the product.

List of relevant risk phrases and hazard statements :

R22 Harmful if swallowed.
R36 Irritating to eyes
R60 May impair fertility.
R61 May cause harm to the unborn child.
Xn : Harmful
Xi : Irritant

Instructions for the training : Product handling instruction shall be included into the educational system about the safety work (initial training, training at the workplace, repeated training) according to specific conditions at the workplace.

Recommended restrictions on use (i.e. non-statutory recommendations by supplier) :

Mixture should not be used for any other purpose than for which is appointed (point 1.2).
Because of the fact that specific conditions of use of mixture are out of supplier's control,
It is responsibility of the user to adjust the prescribed warnings to local laws and regulations.
Safety information describes the product in terms of safety and it cannot be considered as
technical information about product.