

# SAFETY DATA SHEET

Issuing date 2013/06/17  
Version 1

## SECTION 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**Identification of the product** X300 L-CYAN

**Recommended uses and restrictions on use** Inkjet ink

**Supplier** SAM YOUNG INK & PAINT MFG. CO., LTD.  
679-13 Naegi-ri, Poseung-eup, Pyeongtaek-si,  
Gyeonggi-do 451-821, Korea  
Tel: +82-31-686-7745  
Fax: +82-31-686-7853

**Emergency Telephone Number** 031-686-7745

**Reference number** GHKOENR0047143 - 1

## SECTION 2. HAZARDS IDENTIFICATION

### GHS Classification

**Physical and chemical hazards**  
Not classified

### **Health Hazards**

Acute dermal toxicity	Category 4
Specific Target Organ Toxicity (Single Exposure)	Category 1
Specific Target Organ Toxicity (Repeated Exposure)	Category 2

### **Environmental hazards**

Chronic aquatic toxicity	Category 3
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### GHS Label elements



**Signal Word** DANGER

### **Hazard Statements**

- H303 - May be harmful if swallowed
- H312 - Harmful in contact with skin
- H370 - Causes damage to organs
- H373 - May cause damage to organs through prolonged or repeated exposure.
- H412 - Harmful to aquatic life with long lasting effects

### **Precautionary Statement**

**Precautionary Statements - Safety Measures**

P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking  
 P260 - Do not breathe dust/fume/gas/mist/vapors/spray  
 P264 - Wash hands thoroughly after handling  
 P270 - Do not eat, drink or smoke when using this product  
 P273 - Avoid release to the environment  
 P280 - Wear protective gloves/ protective clothing/ eye protection/ face protection

**Precautionary Statement - Response**

P312 - Call a POISON CENTER or doctor/ physician if you feel unwell  
 P314 - Get medical advice/ attention if you feel unwell  
 P321 - Specific treatment  
 P322 - Specific measures  
 P363 - Wash contaminated clothing before reuse  
 P302 + P352 - IF ON SKIN: Wash with plenty of soap and water  
 P303 + P361 + P353 - IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower  
 P307 + P311 - IF exposed: Call a POISON CENTER or doctor/ physician  
 P370 + P378 - In case of fire: Use appropriate extinguishant

**Precautionary Statement - Storage**

P403 + P235 - Store in a well-ventilated place. Keep cool  
 P405 - Store locked up

**Precautionary Statement - Disposal**

P501 - Dispose of contents/ container to an approved waste disposal plant

**Other hazards not defined in GHS** No information available

**Other hazards which do not result in classification** No information available

**Country / local information** No information available

**Important dangerous hazardous property and influence** No information available

**SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

**Substance/mixture** Mixture

Chemical Name	Weight (%)	CAS No.
Ethylene glycol monobutyl ether acetate	85-95%	112-07-2
Pigment	0.1-10%	* 1
Polymer	1-10%	* 1
Lactone compound	1-10%	* 1

\*1: Listed

**SECTION 4. FIRST-AID MEASURES**

**Eye contact** Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes  
 Immediate medical attention is required

**Skin contact** Remove as much as possible by wiping  
 Wash off immediately with soap and plenty of water  
 Get medical attention immediately if symptoms occur

<b>Inhalation</b>	Move to fresh air If symptoms persist, call a physician If breathing is irregular or stopped, provide cardiopulmonary resuscitation Keep at rest
<b>Ingestion</b>	Immediate medical attention is required
<b>Notes to physician</b>	Treat symptomatically
<b>Anticipated acute and delayed effects</b>	No information available
<b>Most Important Symptoms/Effects</b>	No information available
<b>Protection of first-aiders</b>	No information available

## SECTION 5. FIRE-FIGHTING MEASURES

<b>Suitable/unsuitable extinguishing media</b>	
<b>Extinguishing media</b>	Water spray Carbon dioxide (CO <sub>2</sub> ) Foam Dry powder Dry sand
<b>Extinguishing media which shall not be used for safety reasons</b>	No information available
<b>Specific hazards arising from the chemical</b>	No information available
<b>Special protective equipment for fire-fighters</b>	Wear personal protective equipment Evacuate area and fight fire from a safe distance
<b>Specific methods</b>	May ignite combustibles (wood paper, oil, clothing, etc.) Cool drums with water spray

## SECTION 6. ACCIDENTAL RELEASE MEASURES

<b>Personal precautions, protective equipment, and emergency procedures</b>	Wear suitable protective equipment Evacuate non-essential personnel
<b>Environmental precautions</b>	Dike to collect large liquid spills Try to prevent the material from entering drains or water courses
<b>Recovery and neutralization</b>	Soak up with inert absorbent material A lot of leakage things have the flow first stopped by earth and sand etc., and need to be led to a safe place Keep in suitable and closed containers for disposal.
<b>Secondary disaster prevention measures</b>	Remove all sources of ignition

## SECTION 7. HANDLING AND STORAGE

<b>Handling</b>	
<b>Technical measures</b>	Ensure adequate ventilation
<b>Advice on safe handling</b>	Wash hands before breaks and immediately after handling the product Smoking, eating and drinking should be prohibited in the application area
<b>Hygiene measures</b>	Handle in accordance with good industrial hygiene and safety practice

**Storage**

**Technical measures/Storage conditions** Keep container tightly closed in a dry and well-ventilated place  
Keep away from direct sunlight  
Keep at temperature at 5 to 35C.

**SECTION 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION****Exposure Guideline**

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Chemical Name	ISHA - Occupational Exposure Limits ( Korea)	ISHA - Permissible Exposure Limits ( Korea)	ACGIH-TLV
Ethylene glycol monobutyl ether acetate	TWA 20 ppm TWA 131 mg/m <sup>3</sup>	-	TWA 20 ppm

**Engineering measures** Ensure adequate ventilation

**Personal protective equipment**

**Respiratory protection** In case of insufficient ventilation wear suitable respiratory equipment

**Eye protection** Goggles

**Hand protection** Rubber/latex/neoprene or other suitable chemical resistant gloves

**Skin and body protection** Long sleeved clothing Chemical resistant apron Antistatic boots

**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES****Appearance**

**Physical State** Liquid

**Color** Blue

**Odor** Slight smell

**Odor Threshold** No information available

**pH VALUE** No information available

**Melting point/range** No information available

**Boiling Point/Range** No information available

**Flash point** 83 C (Cleveland Open Cup (COC))

**Evaporation rate** No information available

**Flammability (solid, gas)** No information available

**Flammability Limits in Air** No information available

**Vapor pressure** No information available

**Solubility**

**Water solubility** Practically insoluble

**Solubility in other solvents** No information available

**Vapor density** No information available

**Specific Gravity** No information available

**Partition Coefficient (n-octanol/water)** No information available

**Autoignition temperature** No information available

**Decomposition temperature** No information available

**Viscosity** No information available

**Molecular Weight** No information available

**Density** 0.96 - 1.00 g/cm<sup>3</sup> / 25 C

**Bulk Specific Gravity** No information available

**SECTION 10. STABILITY AND REACTIVITY****Stability / Hazardous Reactions**

**Stability** Stable at room temperature and atmospheric pressure.

**Hazardous Reactions** This product does not have the reactivity with the water.

<b>Conditions to avoid</b>	High temperature
<b>Materials to avoid</b>	Acids and oxidizer
<b>Hazardous decomposition products</b>	No information available

## SECTION 11. TOXICOLOGICAL INFORMATION

**Information about an exposure path with a high possibility** No information available

### Health hazard information

#### Acute toxicity

No Information available as a product

Chemical Name	Acute Toxicity - Oral	Acute Toxicity - Dermal	Acute Toxicity - Inhalation
Ethylene glycol monobutyl ether acetate	LD50 = 1600 - 7000 mg/kg (Rat)	LD50 = 1500 mg/kg (Rabbit)	-

**Skin corrosion/irritation** No information available

**Serious Eye Damage/Eye Irritation** No information available

**Respiratory Sensitization** No information available

**Skin Sensitization** No information available

#### Carcinogenicity

No Information available as a product

Chemical Name	Korean Carc.	ACGIH	IARC
Ethylene glycol monobutyl ether acetate	2	A3	-

**Germ cell mutagenicity** No information available

**Reproductive toxicity** No information available

**STOT - Single Exposure** No information available

**STOT - Repeated Exposure** No information available

**Aspiration hazard** No information available

## SECTION 12. ECOLOGICAL INFORMATION

### Environmental hazards

No Information available as a product

Chemical Name	Fish	Crustacea	Algae
Ethylene glycol monobutyl ether acetate	-	EC50 = 67.5 mg/L 48h	-

**Persistence and degradability** No information available

**Bioaccumulative potential** No information available

**Mobility in soil** No information available

**Other information** No information available

## SECTION 13. DISPOSAL CONSIDERATIONS

<b>Waste from Residues/Unused Products</b>	This product and the container must be discarded based on a rule of , "Waste administration (Korea)".
<b>Contaminated packaging</b>	Dispose of in accordance with local regulations

## SECTION 14. TRANSPORT INFORMATION

<b>UN number</b>	-
<b>UN Proper shipping name</b>	-
<b>UN Classification</b>	-
<b>Packaging group</b>	-
<b>Marine Pollutant</b>	Not applicable
<b>Special safety measures</b>	Ground and bond containers when transferring material

## SECTION 15. REGULATORY INFORMATION

**Industrial Safety and Health Act(Korea)**  
**Toxic Chemicals Control Act(Korea)**  
**Safety Control of Dangerous Substances Act(Korea)**  
**Wastes Control Act (Korea)**  
**A civil law except the above and foreign legal regulation**  
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## SECTION 16. OTHER INFORMATION

<b>Literary reference</b>	Classification and Labelling of Chemical Substances and material safety data sheets(Korea-MOEL Public Notice No.2012-14) ACGIH IARC
<b>First making date</b>	
<b>Issuing date</b>	2013/06/17
<b>Version / Revision Date</b>	
<b>Version</b>	1
<b>Revision Date</b>	-
<b>Other information</b>	No information available
<b>Manufacturer</b>	TOYO INK CO., LTD. 1, Sakae, Kawagoe City, Saitama, 350-0803, JAPAN +81-49-233-2240

- The information provided on this SDS is correct to the best of our knowledge, information and belief at the date of its publication
- The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text
- When you export this product or the chemical substances including this product, please certainly obey the law of the export destination countries. If you have any questions, please contact our sales division.

# SAFETY DATA SHEET

Issuing date 2013/06/18  
Version 1

## SECTION 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**Identification of the product** X300 L-MAGENTA

**Recommended uses and restrictions on use** Inkjet ink

**Supplier** SAM YOUNG INK & PAINT MFG. CO., LTD.  
679-13 Naegi-ri, Poseung-eup, Pyeongtaek-si,  
Gyeonggi-do 451-821, Korea  
Tel: +82-31-686-7745  
Fax: +82-31-686-7853

**Emergency Telephone Number** 031-686-7745

**Reference number** GHKOENR0047149 - 1

## SECTION 2. HAZARDS IDENTIFICATION

### GHS Classification

**Physical and chemical hazards**  
Not classified

### **Health Hazards**

Acute dermal toxicity	Category 4
Specific Target Organ Toxicity (Single Exposure)	Category 1
Specific Target Organ Toxicity (Repeated Exposure)	Category 2

### **Environmental hazards**

Chronic aquatic toxicity	Category 3
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### GHS Label elements



**Signal Word** DANGER

### **Hazard Statements**

- H303 - May be harmful if swallowed
- H312 - Harmful in contact with skin
- H370 - Causes damage to organs
- H373 - May cause damage to organs through prolonged or repeated exposure.
- H412 - Harmful to aquatic life with long lasting effects

### **Precautionary Statement**

**Precautionary Statements - Safety Measures**

- P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking
- P260 - Do not breathe dust/fume/gas/mist/vapors/spray
- P264 - Wash hands thoroughly after handling
- P270 - Do not eat, drink or smoke when using this product
- P273 - Avoid release to the environment
- P280 - Wear protective gloves/ protective clothing/ eye protection/ face protection

**Precautionary Statement - Response**

- P312 - Call a POISON CENTER or doctor/ physician if you feel unwell
- P314 - Get medical advice/ attention if you feel unwell
- P321 - Specific treatment
- P322 - Specific measures
- P363 - Wash contaminated clothing before reuse
- P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
- P303 + P361 + P353 - IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower
- P307 + P311 - IF exposed: Call a POISON CENTER or doctor/ physician
- P370 + P378 - In case of fire: Use appropriate extinguishant

**Precautionary Statement - Storage**

- P403 + P235 - Store in a well-ventilated place. Keep cool
- P405 - Store locked up

**Precautionary Statement - Disposal**

- P501 - Dispose of contents/ container to an approved waste disposal plant

**Other hazards not defined in GHS** No information available

**Other hazards which do not result in classification** No information available

**Country / local information** No information available

**Important dangerous hazardous property and influence** No information available

**SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

**Substance/mixture** Mixture

Chemical Name	Weight (%)	CAS No.
Ethylene glycol monobutyl ether acetate	80-90%	112-07-2
Pigment	1-10%	* 1
Polymer	1-10%	* 1
Lactone compound	1-10%	* 1

\*1: Listed

**SECTION 4. FIRST-AID MEASURES**

**Eye contact** Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes  
Immediate medical attention is required

**Skin contact** Remove as much as possible by wiping  
Wash off immediately with soap and plenty of water  
Get medical attention immediately if symptoms occur



<b>Inhalation</b>	Move to fresh air If symptoms persist, call a physician If breathing is irregular or stopped, provide cardiopulmonary resuscitation Keep at rest
<b>Ingestion</b>	Immediate medical attention is required
<b>Notes to physician</b>	Treat symptomatically
<b>Anticipated acute and delayed effects</b>	No information available
<b>Most Important Symptoms/Effects</b>	No information available
<b>Protection of first-aiders</b>	No information available

## SECTION 5. FIRE-FIGHTING MEASURES

<b>Suitable/unsuitable extinguishing media</b>	
<b>Extinguishing media</b>	Water spray Carbon dioxide (CO <sub>2</sub> ) Foam Dry powder Dry sand
<b>Extinguishing media which shall not be used for safety reasons</b>	No information available
<b>Specific hazards arising from the chemical</b>	No information available
<b>Special protective equipment for fire-fighters</b>	Wear personal protective equipment Evacuate area and fight fire from a safe distance
<b>Specific methods</b>	May ignite combustibles (wood paper, oil, clothing, etc.) Cool drums with water spray

## SECTION 6. ACCIDENTAL RELEASE MEASURES

<b>Personal precautions, protective equipment, and emergency procedures</b>	Wear suitable protective equipment Evacuate non-essential personnel
<b>Environmental precautions</b>	Dike to collect large liquid spills Try to prevent the material from entering drains or water courses
<b>Recovery and neutralization</b>	Soak up with inert absorbent material A lot of leakage things have the flow first stopped by earth and sand etc., and need to be led to a safe place Keep in suitable and closed containers for disposal.
<b>Secondary disaster prevention measures</b>	Remove all sources of ignition

## SECTION 7. HANDLING AND STORAGE

<b>Handling</b>	
<b>Technical measures</b>	Ensure adequate ventilation
<b>Advice on safe handling</b>	Wash hands before breaks and immediately after handling the product Smoking, eating and drinking should be prohibited in the application area
<b>Hygiene measures</b>	Handle in accordance with good industrial hygiene and safety practice

**Storage**

**Technical measures/Storage conditions** Keep container tightly closed in a dry and well-ventilated place  
 Keep away from direct sunlight  
 Keep at temperature at 5 to 35C.

**SECTION 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION**

**Exposure Guideline** -

Chemical Name	ISHA - Occupational Exposure Limits ( Korea)	ISHA - Permissible Exposure Limits ( Korea)	ACGIH-TLV
Ethylene glycol monobutyl ether acetate	TWA 20 ppm TWA 131 mg/m <sup>3</sup>	-	TWA 20 ppm

**Engineering measures** Ensure adequate ventilation

**Personal protective equipment**

**Respiratory protection** In case of insufficient ventilation wear suitable respiratory equipment

**Eye protection** Goggles

**Hand protection** Rubber/latex/neoprene or other suitable chemical resistant gloves

**Skin and body protection** Long sleeved clothing Chemical resistant apron Antistatic boots

**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

**Appearance**

**Physical State** Liquid

**Color** Red

**Odor** Slight smell

**Odor Threshold** No information available

**pH VALUE** No information available

**Melting point/range** No information available

**Boiling Point/Range** No information available

**Flash point** 83 C (Cleveland Open Cup (COC))

**Evaporation rate** No information available

**Flammability (solid, gas)** No information available

**Flammability Limits in Air** No information available

**Vapor pressure** No information available

**Solubility**

**Water solubility** Practically insoluble

**Solubility in other solvents** No information available

**Vapor density** No information available

**Specific Gravity** No information available

**Partition Coefficient (n-octanol/water)** No information available

**Autoignition temperature** No information available

**Decomposition temperature** No information available

**Viscosity** No information available

**Molecular Weight** No information available

**Density** 0.96 - 1.00 g/cm<sup>3</sup> / 25 C

**Bulk Specific Gravity** No information available

**SECTION 10. STABILITY AND REACTIVITY**

**Stability / Hazardous Reactions**

**Stability** Stable at room temperature and atmospheric pressure.

**Hazardous Reactions** This product does not have the reactivity with the water.

<b>Conditions to avoid</b>	High temperature
<b>Materials to avoid</b>	Acids and oxidizer
<b>Hazardous decomposition products</b>	No information available

## SECTION 11. TOXICOLOGICAL INFORMATION

**Information about an exposure path with a high possibility** No information available

### Health hazard information

**Acute toxicity** No Information available as a product

Chemical Name	Acute Toxicity - Oral	Acute Toxicity - Dermal	Acute Toxicity - Inhalation
Ethylene glycol monobutyl ether acetate	LD50 = 1600 - 7000 mg/kg (Rat)	LD50 = 1500 mg/kg (Rabbit)	-

**Skin corrosion/irritation** No information available

**Serious Eye Damage/Eye Irritation** No information available

**Respiratory Sensitization** No information available

**Skin Sensitization** No information available

**Carcinogenicity** No Information available as a product

Chemical Name	Korean Carc.	ACGIH	IARC
Ethylene glycol monobutyl ether acetate	2	A3	-

**Germ cell mutagenicity** No information available

**Reproductive toxicity** No information available

**STOT - Single Exposure** No information available

**STOT - Repeated Exposure** No information available

**Aspiration hazard** No information available

## SECTION 12. ECOLOGICAL INFORMATION

**Environmental hazards** No Information available as a product

Chemical Name	Fish	Crustacea	Algae
Ethylene glycol monobutyl ether acetate	-	EC50 = 67.5 mg/L 48h	-

**Persistence and degradability** No information available

**Bioaccumulative potential** No information available

**Mobility in soil** No information available

**Other information** No information available

## SECTION 13. DISPOSAL CONSIDERATIONS

<b>Waste from Residues/Unused Products</b>	This product and the container must be discarded based on a rule of , "Waste administration (Korea)".
<b>Contaminated packaging</b>	Dispose of in accordance with local regulations

## SECTION 14. TRANSPORT INFORMATION

<b>UN number</b>	-
<b>UN Proper shipping name</b>	-
<b>UN Classification</b>	-
<b>Packaging group</b>	-
<b>Marine Pollutant</b>	Not applicable
<b>Special safety measures</b>	Ground and bond containers when transferring material

## SECTION 15. REGULATORY INFORMATION

**Industrial Safety and Health Act(Korea)**  
**Toxic Chemicals Control Act(Korea)**  
**Safety Control of Dangerous Substances Act(Korea)**  
**Wastes Control Act (Korea)**  
**A civil law except the above and foreign legal regulation**  
 - -

## SECTION 16. OTHER INFORMATION

<b>Literary reference</b>	Classification and Labelling of Chemical Substances and material safety data sheets(Korea-MOEL Public Notice No.2012-14) ACGIH IARC
<b>First making date</b>	
<b>Issuing date</b>	2013/06/18
<b>Version / Revision Date</b>	
<b>Version</b>	1
<b>Revision Date</b>	-
<b>Other information</b>	No information available
<b>Manufacturer</b>	TOYO INK CO., LTD. 1, Sakae, Kawagoe City, Saitama, 350-0803, JAPAN +81-49-233-2240

- The information provided on this SDS is correct to the best of our knowledge, information and belief at the date of its publication
- The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text
- When you export this product or the chemical substances including this product, please certainly obey the law of the export destination countries. If you have any questions, please contact our sales division.

**MATERIAL SAFETY DATA SHEET**

First issue: First issue: 01.01.2016

**1. IDENTIFICATION OF THE SUBSTANCES / PREPARATION AND THE COMPANY**

Product Name: X300 SOLVENT INK SOLUTION

Use: Inkjet Ink

Supplier: DIGITAL GRAPHICS INCORPORATION  
 271-6, GOEUP DONG, YANGJU-CITY, KOREA  
 TEL No.: 82-31-820-8939

**2. COMPOSITION / INFORMATION ON INGREDIENTS**

Main Ingredients	Content (%)
Ethylene glycol monobutyletheracetate	93 – 97
N-Methyl pyrrolidone	3 – 7

All Ingredients in this product are listed on the ECL inventory.

Hazardous Ingredients	Content (%)	CAS No.	OSHA (PEL)	ACGIH (TWA)
Ethylene glycol monobutyletheracetate	93 – 97	112-07-2	Not listed	20ppm
N-Methyl pyrrolidone	3 – 7	872-50-4	Not listed	Not listed

**3. HAZARDOUS IDENTIFICATION**

Classification: Combustible, Harmful and Irritant preparation.

**4. FIRST AID MEASURES**

Skin Contact: In case of contact, immediately wash skin with soap and plenty of water. If irritation develops, get medical attention. Remove contaminated clothing and shoes.

Eye Contact: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. If irritation develops, get medical attention.

Inhalation: Move to fresh air area. Call a physician.

Ingestion: If swallowed, seek medical advice immediately.

Further Medical Treatment: None

**5. FIRE FIGHTING MEASURES**

Flammable properties

Flashpoint: 83°C (Cleveland open cup)

Flammable limit: 0.8-8.5 vol%

Suitable extinguishing media: Foam, CO<sub>2</sub>, Dry chemicals and Water spray.

Not to be used extinguishing media: Water (Jet)

Hazardous decomposition products: Burning in insufficient air supply may produce toxic fume of carbon monoxide.

Protective equipment for Fire fighters: Fire fighters should wear self-contained breathing apparatus to avoid inhalation of smoke and vapors.

Miscellaneous: May catch fire with ignition. Must be kept away from flame or spark.

**6. ACCIDENTAL RELEASE MEASURES**

Shut off all sources of ignition or open flame. Keep public away. For small spills, scrape spilled materials

with disposal towels or dry sand. For large spills, dike and cover liquid with foam. Take up the spill by equipment made of plastics to avoid sparks and place in closed container. Prevent spills from entering sewers, watercourses or low areas to avoid pollution.

## 7. HANDLING AND STORAGE

Handling: Do not handle or store near an open flame, sources of heat or sources of ignition. Use only in the well-ventilated areas and wear proper protective equipment to avoid skin contact, eye contact and vapor inhalation.

Storage: Store containers in a cool and dark place. Keep containers closed.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure limits: Ethylene glycol monobutyl ether acetate ACGIH (TWA) 20ppm

Engineering controls: Use with local exhaust ventilation.

Respiratory protection: Respirator to avoid breathing organic solvent vapor.

Hand protection: Wear chemical resistant gloves treated to prevent static electricity.

Eye protection: Use safety glasses or goggles.

Skin protection: Wear working clothes and anti-static safety shoes.

Other protection: No smoking, No eating and No drinking at the workplace.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Non colored liquid

Odor: solvent odor.

Melting point: Not applicable.

Specific gravity: 0.93-0.95@25°C

Boiling point: 191 - 202°C

Vapor pressure: <0.3mmHg@20°C

Solubility in water: Insoluble

## 10. STABILITY AND REACTIVITY

Stability: Stable

Materials to avoid: Acids and oxidizing agents

Conditions to avoid: Extremely high temperature

Hazardous reactions: Not occur

Decomposition products: Burning in insufficient air supply may produce toxic fume of carbon monoxide.

## 11. TOXICOLOGICAL INFORMATION

Eye contact: Contact with eyes may cause irritation.

Skin contact: Contact with skin may cause irritation.

Inhalation: Prolonged or repeated inhalation of vapor may cause headaches, dizziness or nausea.

Ingestion: Ingestion may result in gastric disturbance.

Long term exposure: This product is not considered as a known human carcinogen.

Acute Toxicity: Ethylene glycol monobutyl ether acetate: LD<sub>50</sub> (rat) 2,400mg/kg<sup>1)</sup>

N-Methylpyrrolidone: LD<sub>50</sub> (rat) 3,914mg/kg<sup>2)</sup> Carcinogenicity:

Ethylene glycol monobutyl ether acetate: IARC; Not listed

N-Methyl pyrrolidone: IARC; Not listed

Mutagenicity: No information available.

Other toxicity information: No information available

## 12. ECOLOGICAL INFORMATION

Environmental fate and distribution: This product is insoluble in water. Treat using the best available techniques to avoid environmental contamination.

Toxicity: No information available.

Effect on effluent treatment: No data.

**13. DISPOSAL CONSIDERATION**

Dispose in accordance with local, state and federal regulations.

**14. TRANSPORT INFORMATION**

UN CLASS: Not applicable

UN NUMBER: Not applicable

PACKING GROUP: Not applicable

PROPER SHIPPING NAME: Ink

Follow all regulations in your country.

**NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS**

**DOT (US): Not dangerous goods.**

**IMDG: Not dangerous goods.**

**IATA: Not dangerous goods.**

**15. REGULATORY INFORMATION**

Follow all regulations in your country

**16. OTHER INFORMATION**

HMIS RATING*	
HEALTH HAZARD	1
FLAMMABILITY	2
REACTIVITY	0
PERSONAL PROTECTION	H

\*HAZARD RATINGS  
 4-SEVERE 3-SERIOUS  
 2-MODERATE  
 1-SLIGHT 0-MINIMAL

Reference

- 1) Clayton and Clayton, Patty's industrial Hygiene and Toxicology 4<sup>th</sup> Edition (The Japanese Version)
- 2) NIOSH, Registry of Toxic Effects of Chemical Substances (RTECS UY5790000)

Manufacture's Company:

TOYO INK MFG.CO.,LTD. (Japan)

InkJet Development Department, Converting System Division

21-1 Kaga 1-Chome, Itabashi-ku, Tokyo, 173-8666, Japan

Tel +81 3 3962 2169 Fax +81 3 3962 2160

# SAFETY DATA SHEET

Issuing date 2013/06/19  
Revision Date 2013/06/19  
Version 2

## SECTION 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Identification of the product X300 BLACK

Recommended uses and restrictions on use Inkjet ink

Supplier . DIGITAL GRAPHICS INCOPORATION  
271-6 GOEUP-DONG, YANGJU-SI, KOREA  
TEL:+82-31-820-8900

Reference number GHKOENR0047148 - 2

## SECTION 2. HAZARDS IDENTIFICATION

### GHS Classification

Physical and chemical hazards  
Not classified

### Health Hazards

Acute dermal toxicity	Category 4
Carcinogenicity	Category 2
Specific Target Organ Toxicity (Single Exposure)	Category 1
Specific Target Organ Toxicity (Repeated Exposure)	Category 2

### Environmental hazards

Chronic aquatic toxicity	Category 3
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### GHS Label elements



Signal Word DANGER

### Hazard Statements

- H303 - May be harmful if swallowed
- H312 - Harmful in contact with skin
- H351 - Suspected of causing cancer
- H370 - Causes damage to organs
- H373 - May cause damage to organs through prolonged or repeated exposure.
- H412 - Harmful to aquatic life with long lasting effects

### Precautionary Statement



**Precautionary Statements - Safety Measures**

- P201 - Obtain special instructions before use  
 P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking  
 P260 - Do not breathe dust/fume/gas/mist/vapors/spray  
 P264 - Wash hands thoroughly after handling  
 P270 - Do not eat, drink or smoke when using this product  
 P273 - Avoid release to the environment  
 P280 - Wear protective gloves/ protective clothing/ eye protection/ face protection  
 P281 - Use personal protective equipment as required  
 P202 - Do not handle until all safety precautions have been read and understood

**Precautionary Statement - Response**

- P312 - Call a POISON CENTER or doctor/ physician if you feel unwell  
 P314 - Get medical advice/ attention if you feel unwell  
 P321 - Specific treatment  
 P322 - Specific measures  
 P363 - Wash contaminated clothing before reuse  
 P302 + P352 - IF ON SKIN: Wash with plenty of soap and water  
 P303 + P361 + P353 - IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower  
 P307 + P311 - IF exposed: Call a POISON CENTER or doctor/ physician  
 P308 + P313 - IF exposed or concerned: Get medical advice/ attention  
 P370 + P378 - In case of fire: Use appropriate extinguishant

**Precautionary Statement - Storage**

- P403 + P235 - Store in a well-ventilated place. Keep cool  
 P405 - Store locked up

**Precautionary Statement - Disposal**

- P501 - Dispose of contents/ container to an approved waste disposal plant

**Other hazards not defined in GHS** No information available

**Other hazards which do not result in classification** No information available

**Country / local information** No information available

**Important dangerous hazardous property and influence** No information available

**SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

**Substance/mixture** Mixture

Chemical Name	Weight (%)	CAS No.
Ethylene glycol monobutyl ether acetate	80-90%	112-07-2
Carbon black	1-10%	1333-86-4
Polymer	1-10%	* 1
Lactone compound	1-10%	* 1

\*1: Listed

**SECTION 4. FIRST-AID MEASURES**

**Eye contact** Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes  
 Immediate medical attention is required

<b>Skin contact</b>	Remove as much as possible by wiping Wash off immediately with soap and plenty of water Get medical attention immediately if symptoms occur
<b>Inhalation</b>	Move to fresh air If symptoms persist, call a physician If breathing is irregular or stopped, provide cardiopulmonary resuscitation Keep at rest
<b>Ingestion</b>	Immediate medical attention is required
<b>Notes to physician</b>	Treat symptomatically
<b>Anticipated acute and delayed effects</b>	No information available
<b>Most Important Symptoms/Effects</b>	No information available
<b>Protection of first-aiders</b>	No information available

## SECTION 5. FIRE-FIGHTING MEASURES

<b>Suitable/unsuitable extinguishing media</b>	
<b>Extinguishing media</b>	Water spray Carbon dioxide (CO <sub>2</sub> ) Foam Dry powder Dry sand
<b>Extinguishing media which shall not be used for safety reasons</b>	No information available
<b>Specific hazards arising from the chemical</b>	No information available
<b>Special protective equipment for fire-fighters</b>	Wear personal protective equipment Evacuate area and fight fire from a safe distance
<b>Specific methods</b>	May ignite combustibles (wood paper, oil, clothing, etc.) Cool drums with water spray

## SECTION 6. ACCIDENTAL RELEASE MEASURES

<b>Personal precautions, protective equipment, and emergency procedures</b>	Wear suitable protective equipment Evacuate non-essential personnel
<b>Environmental precautions</b>	Dike to collect large liquid spills Try to prevent the material from entering drains or water courses
<b>Recovery and neutralization</b>	Soak up with inert absorbent material A lot of leakage things have the flow first stopped by earth and sand etc., and need to be led to a safe place Keep in suitable and closed containers for disposal.
<b>Secondary disaster prevention measures</b>	Remove all sources of ignition

## SECTION 7. HANDLING AND STORAGE

<b>Handling Technical measures</b>	Ensure adequate ventilation
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- Advice on safe handling** Wash hands before breaks and immediately after handling the product  
Smoking, eating and drinking should be prohibited in the application area
- Hygiene measures** Handle in accordance with good industrial hygiene and safety practice

**Storage**

- Technical measures/Storage conditions** Keep container tightly closed in a dry and well-ventilated place  
Keep away from direct sunlight  
Keep at temperature at 5 to 35C.

**SECTION 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION**

**Exposure Guideline** -

Chemical Name	ISHA - Occupational Exposure Limits ( Korea)	ISHA - Permissible Exposure Limits ( Korea)	ACGIH-TLV
Ethylene glycol monobutyl ether acetate	TWA 20 ppm TWA 131 mg/m <sup>3</sup>	-	TWA 20 ppm
Carbon black	TWA 3.5 mg/m <sup>3</sup>	-	TWA 3 mg/m <sup>3</sup>

- Engineering measures** Ensure adequate ventilation

**Personal protective equipment**

- Respiratory protection** In case of insufficient ventilation wear suitable respiratory equipment
- Eye protection** Goggles
- Hand protection** Rubber/latex/neoprene or other suitable chemical resistant gloves
- Skin and body protection** Long sleeved clothing Chemical resistant apron Antistatic boots

**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

**Appearance**

- Physical State** Liquid
- Color** Black
- Odor** Slight smell
- Odor Threshold** No information available
- pH VALUE** No information available
- Melting point/range** No information available
- Boiling Point/Range** No information available
- Flash point** 83 C (Cleveland Open Cup (COC))
- Evaporation rate** No information available
- Flammability (solid, gas)** No information available
- Flammability Limits in Air** No information available
- Vapor pressure** No information available
- Solubility**
- Water solubility** Practically insoluble
- Solubility in other solvents** No information available
- Vapor density** No information available
- Specific Gravity** No information available
- Partition Coefficient (n-octanol/water)** No information available
- Autoignition temperature** No information available
- Decomposition temperature** No information available
- Viscosity** No information available
- Molecular Weight** No information available
- Density** 0.96 - 1.00 g/cm<sup>3</sup> / 25 C
- Bulk Specific Gravity** No information available

**SECTION 10. STABILITY AND REACTIVITY**

**Stability / Hazardous Reactions**

<b>Stability</b>	Stable at room temperature and atmospheric pressure.
<b>Hazardous Reactions</b>	This product does not have the reactivity with the water.
<b>Conditions to avoid</b>	High temperature
<b>Materials to avoid</b>	Acids and oxidizer
<b>Hazardous decomposition products</b>	No information available

**SECTION 11. TOXICOLOGICAL INFORMATION**

**Information about an exposure path with a high possibility** No information available

**Health hazard information**

**Acute toxicity** No Information available as a product

Chemical Name	Acute Toxicity - Oral	Acute Toxicity - Dermal	Acute Toxicity - Inhalation
Ethylene glycol monobutyl ether acetate	LD50 = 1600 - 7000 mg/kg (Rat)	LD50 = 1500 mg/kg (Rabbit)	-
Carbon black	LD50 > 15400 mg/kg (Rat)	LD50 > 3 g/kg (Rabbit)	-

**Skin corrosion/irritation** No information available

**Serious Eye Damage/Eye Irritation** No information available

**Respiratory Sensitization** No information available

**Skin Sensitization** No information available

**Carcinogenicity** No Information available as a product

Chemical Name	Korean Carc.	ACGIH	IARC
Ethylene glycol monobutyl ether acetate	2	A3	-
Carbon black	2	A3	2B

**Germ cell mutagenicity** No information available

**Reproductive toxicity** No information available

**STOT - Single Exposure** No information available

**STOT - Repeated Exposure** No information available

**Aspiration hazard** No information available

**SECTION 12. ECOLOGICAL INFORMATION**

**Environmental hazards** No Information available as a product

Chemical Name	Fish	Crustacea	Algae
Ethylene glycol monobutyl ether acetate	-	EC50 = 67.5 mg/L 48h	-

**Persistence and degradability** No information available

**Bioaccumulative potential** No information available

**Mobility in soil** No information available

**Other information** No information available

### SECTION 13. DISPOSAL CONSIDERATIONS

**Waste from Residues/Unused Products** This product and the container must be discarded based on a rule of , "Waste administration (Korea)".

**Contaminated packaging** Dispose of in accordance with local regulations

### SECTION 14. TRANSPORT INFORMATION

**UN number** -

**UN Proper shipping name** -

**UN Classification** -

**Packaging group** -

**Marine Pollutant** Not applicable

**Special safety measures** Ground and bond containers when transferring material

### SECTION 15. REGULATORY INFORMATION

Industrial Safety and Health Act(Korea)  
 Toxic Chemicals Control Act(Korea)  
 Safety Control of Dangerous Substances Act(Korea)  
 Wastes Control Act (Korea)  
 A civil law except the above and foreign legal regulation  
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### SECTION 16. OTHER INFORMATION

**Literary reference** Classification and Labelling of Chemical Substances and material safety data sheets(Korea-MOEL Public Notice No.2012-14)  
 ACGIH  
 IARC

**First making date**  
**Issuing date** 2013/06/19

**Version / Revision Date**  
**Version** 2  
**Revision Date** 2013/06/19

**Other information** No information available

**Manufacturer** TOYO INK CO., LTD.  
 1, Sakae, Kawagoe City, Saitama, 350-0803, JAPAN  
 +81-49-233-2240

- The information provided on this SDS is correct to the best of our knowledge, information and belief at the date of its publication
- The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text
- When you export this product or the chemical substances including this product, please certainly obey the law of the export destination countries. If you have any questions, please contact our sales division.

# SAFETY DATA SHEET

Issuing date 2013/06/10  
Revision Date 2013/06/18  
Version 2

## SECTION 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**Identification of the product** X300 CYAN

**Recommended uses and restrictions on use** Inkjet ink

**Supplier** DIGITAL GRAPHICS INCOPORATION  
271-6 GOEUP-DONG, YANGJU-SI, KOREA  
TEL:+82-31-820-8900

**Reference number** GHKOENR0040821 - 2

## SECTION 2. HAZARDS IDENTIFICATION

### GHS Classification

**Physical and chemical hazards**  
Not classified

### **Health Hazards**

Acute dermal toxicity	Category 4
Specific Target Organ Toxicity (Single Exposure)	Category 1
Specific Target Organ Toxicity (Repeated Exposure)	Category 2

### **Environmental hazards**

Chronic aquatic toxicity	Category 3
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### GHS Label elements



**Signal Word** DANGER

### **Hazard Statements**

- H303 - May be harmful if swallowed
- H312 - Harmful in contact with skin
- H370 - Causes damage to organs
- H373 - May cause damage to organs through prolonged or repeated exposure.
- H412 - Harmful to aquatic life with long lasting effects

### **Precautionary Statement**

**Precautionary Statements - Safety Measures**

P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking  
 P260 - Do not breathe dust/fume/gas/mist/vapors/spray  
 P264 - Wash hands thoroughly after handling  
 P270 - Do not eat, drink or smoke when using this product  
 P273 - Avoid release to the environment  
 P280 - Wear protective gloves/ protective clothing/ eye protection/ face protection

**Precautionary Statement - Response**

P312 - Call a POISON CENTER or doctor/ physician if you feel unwell  
 P314 - Get medical advice/ attention if you feel unwell  
 P321 - Specific treatment  
 P322 - Specific measures  
 P363 - Wash contaminated clothing before reuse  
 P302 + P352 - IF ON SKIN: Wash with plenty of soap and water  
 P303 + P361 + P353 - IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower  
 P307 + P311 - IF exposed: Call a POISON CENTER or doctor/ physician  
 P370 + P378 - In case of fire: Use appropriate extinguishant

**Precautionary Statement - Storage**

P403 + P235 - Store in a well-ventilated place. Keep cool  
 P405 - Store locked up

**Precautionary Statement - Disposal**

P501 - Dispose of contents/ container to an approved waste disposal plant

**Other hazards not defined in GHS** No information available

**Other hazards which do not result in classification** No information available

**Country / local information** No information available

**Important dangerous hazardous property and influence** No information available

**SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

**Substance/mixture** Mixture

Chemical Name	Weight (%)	CAS No.
Ethylene glycol monobutyl ether acetate	80-90%	112-07-2
Pigment	1-10%	* 1
Polymer	1-10%	* 1
Lactone compound	1-10%	* 1

\*1: Listed

**SECTION 4. FIRST-AID MEASURES**

**Eye contact** Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes  
 Immediate medical attention is required

**Skin contact** Remove as much as possible by wiping  
 Wash off immediately with soap and plenty of water  
 Get medical attention immediately if symptoms occur



<b>Inhalation</b>	Move to fresh air If symptoms persist, call a physician If breathing is irregular or stopped, provide cardiopulmonary resuscitation Keep at rest
<b>Ingestion</b>	Immediate medical attention is required
<b>Notes to physician</b>	Treat symptomatically
<b>Anticipated acute and delayed effects</b>	No information available
<b>Most Important Symptoms/Effects</b>	No information available
<b>Protection of first-aiders</b>	No information available

**SECTION 5. FIRE-FIGHTING MEASURES**

<b>Suitable/unsuitable extinguishing media</b>	
<b>Extinguishing media</b>	Water spray Carbon dioxide (CO <sub>2</sub> ) Foam Dry powder Dry sand
<b>Extinguishing media which shall not be used for safety reasons</b>	No information available
<b>Specific hazards arising from the chemical</b>	No information available
<b>Special protective equipment for fire-fighters</b>	Wear personal protective equipment Evacuate area and fight fire from a safe distance
<b>Specific methods</b>	May ignite combustibles (wood paper, oil, clothing, etc.) Cool drums with water spray

**SECTION 6. ACCIDENTAL RELEASE MEASURES**

<b>Personal precautions, protective equipment, and emergency procedures</b>	Wear suitable protective equipment Evacuate non-essential personnel
<b>Environmental precautions</b>	Dike to collect large liquid spills Try to prevent the material from entering drains or water courses
<b>Recovery and neutralization</b>	Soak up with inert absorbent material A lot of leakage things have the flow first stopped by earth and sand etc., and need to be led to a safe place Keep in suitable and closed containers for disposal.
<b>Secondary disaster prevention measures</b>	Remove all sources of ignition

**SECTION 7. HANDLING AND STORAGE**

<b>Handling</b>	
<b>Technical measures</b>	Ensure adequate ventilation
<b>Advice on safe handling</b>	Wash hands before breaks and immediately after handling the product Smoking, eating and drinking should be prohibited in the application area
<b>Hygiene measures</b>	Handle in accordance with good industrial hygiene and safety practice

**Storage**

**Technical measures/Storage conditions** Keep container tightly closed in a dry and well-ventilated place  
Keep away from direct sunlight  
Keep at temperature at 5 to 35C.

**SECTION 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION****Exposure Guideline**

-

Chemical Name	ISHA - Occupational Exposure Limits ( Korea)	ISHA - Permissible Exposure Limits ( Korea)	ACGIH-TLV
Ethylene glycol monobutyl ether acetate	TWA 20 ppm TWA 131 mg/m <sup>3</sup>	-	TWA 20 ppm

**Engineering measures** Ensure adequate ventilation

**Personal protective equipment**

**Respiratory protection** In case of insufficient ventilation wear suitable respiratory equipment

**Eye protection** Goggles

**Hand protection** Rubber/latex/neoprene or other suitable chemical resistant gloves

**Skin and body protection** Long sleeved clothing Chemical resistant apron Antistatic boots

**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES****Appearance**

**Physical State** Liquid

**Color** Blue

**Odor** Slight smell

**Odor Threshold** No information available

**pH VALUE** No information available

**Melting point/range** No information available

**Boiling Point/Range** No information available

**Flash point** 83 C (Cleveland Open Cup (COC))

**Evaporation rate** No information available

**Flammability (solid, gas)** No information available

**Flammability Limits in Air** No information available

**Vapor pressure** No information available

**Solubility**

**Water solubility** Practically insoluble

**Solubility in other solvents** No information available

**Vapor density** No information available

**Specific Gravity** No information available

**Partition Coefficient (n-octanol/water)** No information available

**Autoignition temperature** No information available

**Decomposition temperature** No information available

**Viscosity** No information available

**Molecular Weight** No information available

**Density** 0.96 - 1.00 g/cm<sup>3</sup> / 25 C

**Bulk Specific Gravity** No information available

**SECTION 10. STABILITY AND REACTIVITY****Stability / Hazardous Reactions**

**Stability** Stable at room temperature and atmospheric pressure.

**Hazardous Reactions** This product does not have the reactivity with the water.

<b>Conditions to avoid</b>	High temperature
<b>Materials to avoid</b>	Acids and oxidizer
<b>Hazardous decomposition products</b>	No information available

## SECTION 11. TOXICOLOGICAL INFORMATION

**Information about an exposure path with a high possibility** No information available

### Health hazard information

**Acute toxicity** No Information available as a product

Chemical Name	Acute Toxicity - Oral	Acute Toxicity - Dermal	Acute Toxicity - Inhalation
Ethylene glycol monobutyl ether acetate	LD50 = 1600 - 7000 mg/kg (Rat)	LD50 = 1500 mg/kg (Rabbit)	-

**Skin corrosion/irritation** No information available

**Serious Eye Damage/Eye Irritation** No information available

**Respiratory Sensitization** No information available

**Skin Sensitization** No information available

**Carcinogenicity** No Information available as a product

Chemical Name	Korean Carc.	ACGIH	IARC
Ethylene glycol monobutyl ether acetate	2	A3	-

**Germ cell mutagenicity** No information available

**Reproductive toxicity** No information available

**STOT - Single Exposure** No information available

**STOT - Repeated Exposure** No information available

**Aspiration hazard** No information available

## SECTION 12. ECOLOGICAL INFORMATION

**Environmental hazards** No Information available as a product

Chemical Name	Fish	Crustacea	Algae
Ethylene glycol monobutyl ether acetate	-	EC50 = 67.5 mg/L 48h	-

**Persistence and degradability** No information available

**Bioaccumulative potential** No information available

**Mobility in soil** No information available

**Other information** No information available

## SECTION 13. DISPOSAL CONSIDERATIONS

<b>Waste from Residues/Unused Products</b>	This product and the container must be discarded based on a rule of , "Waste administration (Korea)".
<b>Contaminated packaging</b>	Dispose of in accordance with local regulations

## SECTION 14. TRANSPORT INFORMATION

<b>UN number</b>	-
<b>UN Proper shipping name</b>	-
<b>UN Classification</b>	-
<b>Packaging group</b>	-
<b>Marine Pollutant</b>	Not applicable
<b>Special safety measures</b>	Ground and bond containers when transferring material

### NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

DOT (US): Not dangerous goods.

IMDG: Not dangerous goods.

IATA: Not dangerous goods.

## SECTION 15. REGULATORY INFORMATION

Industrial Safety and Health Act(Korea)  
 Toxic Chemicals Control Act(Korea)  
 Safety Control of Dangerous Substances Act(Korea)  
 Wastes Control Act (Korea)  
 A civil law except the above and foreign legal regulation  
 - -

## SECTION 16. OTHER INFORMATION

<b>Literary reference</b>	Classification and Labelling of Chemical Substances and material safety data sheets(Korea-MOEL Public Notice No.2012-14) ACGIH IARC
<b>First making date</b>	
<b>Issuing date</b>	2013/06/10
<b>Version / Revision Date</b>	
<b>Version</b>	2
<b>Revision Date</b>	2013/06/18
<b>Other information</b>	No information available
<b>Manufacturer</b>	TOYO INK CO., LTD. 1, Sakae, Kawagoe City, Saitama, 350-0803, JAPAN +81-49-233-2240

- The information provided on this SDS is correct to the best of our knowledge, information and belief at the date of its publication
- The information given is designed only as a guide for safe handling, use, processing, storage, transportation,

disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text

- When you export this product or the chemical substances including this product, please certainly obey the law of the export destination countries. If you have any questions, please contact our sales division.

# SAFETY DATA SHEET

Issuing date 2013/06/14  
Revision Date 2013/06/14  
Version 2

## SECTION 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**Identification of the product** X300 MAGENTA

**Recommended uses and restrictions on use** Inkjet ink

**Supplier** DIGITAL GRAPHICS INCOPORATION  
271-6 GOEUP-DONG, YANGJU-SI, KOREA  
TEL:+82-31-820-8900

**Reference number** GHKOENR0046370 - 2

## SECTION 2. HAZARDS IDENTIFICATION

### GHS Classification

**Physical and chemical hazards**  
Not classified

### **Health Hazards**

Acute dermal toxicity	Category 4
Specific Target Organ Toxicity (Single Exposure)	Category 1
Specific Target Organ Toxicity (Repeated Exposure)	Category 2

### **Environmental hazards**

Chronic aquatic toxicity	Category 3
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### GHS Label elements



**Signal Word** DANGER

### **Hazard Statements**

- H303 - May be harmful if swallowed
- H312 - Harmful in contact with skin
- H370 - Causes damage to organs
- H373 - May cause damage to organs through prolonged or repeated exposure.
- H412 - Harmful to aquatic life with long lasting effects

### **Precautionary Statement**

**Precautionary Statements - Safety Measures**

- P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking
- P260 - Do not breathe dust/fume/gas/mist/vapors/spray
- P264 - Wash hands thoroughly after handling
- P270 - Do not eat, drink or smoke when using this product
- P273 - Avoid release to the environment
- P280 - Wear protective gloves/ protective clothing/ eye protection/ face protection

**Precautionary Statement - Response**

- P312 - Call a POISON CENTER or doctor/ physician if you feel unwell
- P314 - Get medical advice/ attention if you feel unwell
- P321 - Specific treatment
- P322 - Specific measures
- P363 - Wash contaminated clothing before reuse
- P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
- P303 + P361 + P353 - IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower
- P307 + P311 - IF exposed: Call a POISON CENTER or doctor/ physician
- P370 + P378 - In case of fire: Use appropriate extinguishant

**Precautionary Statement - Storage**

- P403 + P235 - Store in a well-ventilated place. Keep cool
- P405 - Store locked up

**Precautionary Statement - Disposal**

- P501 - Dispose of contents/ container to an approved waste disposal plant

**Other hazards not defined in GHS** No information available

**Other hazards which do not result in classification** No information available

**Country / local information** No information available

**Important dangerous hazardous property and influence** No information available

**SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

**Substance/mixture** Mixture

Chemical Name	Weight (%)	CAS No.
Ethylene glycol monobutyl ether acetate	75-85%	112-07-2
Pigment	1-10%	* 1
Polymer	1-10%	* 1
Lactone compound	1-10%	* 1

\*1: Listed

**SECTION 4. FIRST-AID MEASURES**

**Eye contact** Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes  
Immediate medical attention is required

**Skin contact** Remove as much as possible by wiping  
Wash off immediately with soap and plenty of water  
Get medical attention immediately if symptoms occur

<b>Inhalation</b>	Move to fresh air If symptoms persist, call a physician If breathing is irregular or stopped, provide cardiopulmonary resuscitation Keep at rest
<b>Ingestion</b>	Immediate medical attention is required
<b>Notes to physician</b>	Treat symptomatically
<b>Anticipated acute and delayed effects</b>	No information available
<b>Most Important Symptoms/Effects</b>	No information available
<b>Protection of first-aiders</b>	No information available

## SECTION 5. FIRE-FIGHTING MEASURES

<b>Suitable/unsuitable extinguishing media</b>	
<b>Extinguishing media</b>	Water spray Carbon dioxide (CO <sub>2</sub> ) Foam Dry powder Dry sand
<b>Extinguishing media which shall not be used for safety reasons</b>	No information available
<b>Specific hazards arising from the chemical</b>	No information available
<b>Special protective equipment for fire-fighters</b>	Wear personal protective equipment Evacuate area and fight fire from a safe distance
<b>Specific methods</b>	May ignite combustibles (wood paper, oil, clothing, etc.) Cool drums with water spray

## SECTION 6. ACCIDENTAL RELEASE MEASURES

<b>Personal precautions, protective equipment, and emergency procedures</b>	Wear suitable protective equipment Evacuate non-essential personnel
<b>Environmental precautions</b>	Dike to collect large liquid spills Try to prevent the material from entering drains or water courses
<b>Recovery and neutralization</b>	Soak up with inert absorbent material A lot of leakage things have the flow first stopped by earth and sand etc., and need to be led to a safe place Keep in suitable and closed containers for disposal.
<b>Secondary disaster prevention measures</b>	Remove all sources of ignition

## SECTION 7. HANDLING AND STORAGE

<b>Handling</b>	
<b>Technical measures</b>	Ensure adequate ventilation
<b>Advice on safe handling</b>	Wash hands before breaks and immediately after handling the product Smoking, eating and drinking should be prohibited in the application area
<b>Hygiene measures</b>	Handle in accordance with good industrial hygiene and safety practice



**Storage**

**Technical measures/Storage conditions** Keep container tightly closed in a dry and well-ventilated place  
Keep away from direct sunlight  
Keep at temperature at 5 to 35C.

**SECTION 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION****Exposure Guideline**

-

Chemical Name	ISHA - Occupational Exposure Limits ( Korea)	ISHA - Permissible Exposure Limits ( Korea)	ACGIH-TLV
Ethylene glycol monobutyl ether acetate	TWA 20 ppm TWA 131 mg/m <sup>3</sup>	-	TWA 20 ppm

**Engineering measures** Ensure adequate ventilation

**Personal protective equipment**

**Respiratory protection** In case of insufficient ventilation wear suitable respiratory equipment

**Eye protection** Goggles

**Hand protection** Rubber/latex/neoprene or other suitable chemical resistant gloves

**Skin and body protection** Long sleeved clothing Chemical resistant apron Antistatic boots

**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES****Appearance**

**Physical State** Liquid

**Color** Red

**Odor** Slight smell

**Odor Threshold** No information available

**pH VALUE** No information available

**Melting point/range** No information available

**Boiling Point/Range** No information available

**Flash point** 83 C (Cleveland Open Cup (COC))

**Evaporation rate** No information available

**Flammability (solid, gas)** No information available

**Flammability Limits in Air** No information available

**Vapor pressure** No information available

**Solubility**

**Water solubility** Practically insoluble

**Solubility in other solvents** No information available

**Vapor density** No information available

**Specific Gravity** No information available

**Partition Coefficient (n-octanol/water)** No information available

**Autoignition temperature** No information available

**Decomposition temperature** No information available

**Viscosity** No information available

**Molecular Weight** No information available

**Density** 0.96 - 1.00 g/cm<sup>3</sup> / 25 C

**Bulk Specific Gravity** No information available

**SECTION 10. STABILITY AND REACTIVITY****Stability / Hazardous Reactions**

**Stability** Stable at room temperature and atmospheric pressure.

**Hazardous Reactions** This product does not have the reactivity with the water.

<b>Conditions to avoid</b>	High temperature
<b>Materials to avoid</b>	Acids and oxidizer
<b>Hazardous decomposition products</b>	No information available

## SECTION 11. TOXICOLOGICAL INFORMATION

**Information about an exposure path with a high possibility** No information available

### Health hazard information

**Acute toxicity** No Information available as a product

Chemical Name	Acute Toxicity - Oral	Acute Toxicity - Dermal	Acute Toxicity - Inhalation
Ethylene glycol monobutyl ether acetate	LD50 = 1600 - 7000 mg/kg (Rat)	LD50 = 1500 mg/kg (Rabbit)	-

**Skin corrosion/irritation** No information available

**Serious Eye Damage/Eye Irritation** No information available

**Respiratory Sensitization** No information available

**Skin Sensitization** No information available

**Carcinogenicity** No Information available as a product

Chemical Name	Korean Carc.	ACGIH	IARC
Ethylene glycol monobutyl ether acetate	2	A3	-

**Germ cell mutagenicity** No information available

**Reproductive toxicity** No information available

**STOT - Single Exposure** No information available

**STOT - Repeated Exposure** No information available

**Aspiration hazard** No information available

## SECTION 12. ECOLOGICAL INFORMATION

**Environmental hazards** No Information available as a product

Chemical Name	Fish	Crustacea	Algae
Ethylene glycol monobutyl ether acetate	-	EC50 = 67.5 mg/L 48h	-

**Persistence and degradability** No information available

**Bioaccumulative potential** No information available

**Mobility in soil** No information available

**Other information** No information available

## SECTION 13. DISPOSAL CONSIDERATIONS

<b>Waste from Residues/Unused Products</b>	This product and the container must be discarded based on a rule of , "Waste administration (Korea)".
<b>Contaminated packaging</b>	Dispose of in accordance with local regulations

## SECTION 14. TRANSPORT INFORMATION

<b>UN number</b>	-
<b>UN Proper shipping name</b>	-
<b>UN Classification</b>	-
<b>Packaging group</b>	-
<b>Marine Pollutant</b>	Not applicable
<b>Special safety measures</b>	Ground and bond containers when transferring material

### NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

DOT (US): Not dangerous goods.

IMDG: Not dangerous goods.

IATA: Not dangerous goods.

## SECTION 15. REGULATORY INFORMATION

Industrial Safety and Health Act(Korea)  
 Toxic Chemicals Control Act(Korea)  
 Safety Control of Dangerous Substances Act(Korea)  
 Wastes Control Act (Korea)  
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## SECTION 16. OTHER INFORMATION

<b>Literary reference</b>	Classification and Labelling of Chemical Substances and material safety data sheets(Korea-MOEL Public Notice No.2012-14) ACGIH IARC
<b>First making date</b>	
<b>Issuing date</b>	2013/06/14
<b>Version / Revision Date</b>	
<b>Version</b>	2
<b>Revision Date</b>	2013/06/14
<b>Other information</b>	No information available
<b>Manufacturer</b>	TOYO INK CO., LTD. 1, Sakae, Kawagoe City, Saitama, 350-0803, JAPAN +81-49-233-2240

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- The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates

only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text

- When you export this product or the chemical substances including this product, please certainly obey the law of the export destination countries. If you have any questions, please contact our sales division.

# SAFETY DATA SHEET

Issuing date 2013/06/18  
Version 1

## SECTION 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**Identification of the product** X300 YELLOW

**Recommended uses and restrictions on use** Inkjet ink

**Supplier** DIGITAL GRAPHICS INCOPORATION  
271-6 GOEUP-DONG, YANGJU-SI, KOREA  
TEL:+82-31-820-8900

**Reference number** GHKOENR0040820 - 1

## SECTION 2. HAZARDS IDENTIFICATION

### GHS Classification

**Physical and chemical hazards**  
Not classified

### **Health Hazards**

Acute dermal toxicity	Category 4
Specific Target Organ Toxicity (Single Exposure)	Category 1
Specific Target Organ Toxicity (Repeated Exposure)	Category 2

### **Environmental hazards**

Chronic aquatic toxicity	Category 3
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### GHS Label elements



**Signal Word** DANGER

### **Hazard Statements**

- H303 - May be harmful if swallowed
- H312 - Harmful in contact with skin
- H370 - Causes damage to organs
- H373 - May cause damage to organs through prolonged or repeated exposure.
- H412 - Harmful to aquatic life with long lasting effects

### **Precautionary Statement**

**Precautionary Statements - Safety Measures**

P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking  
 P260 - Do not breathe dust/fume/gas/mist/vapors/spray  
 P264 - Wash hands thoroughly after handling  
 P270 - Do not eat, drink or smoke when using this product  
 P273 - Avoid release to the environment  
 P280 - Wear protective gloves/ protective clothing/ eye protection/ face protection

**Precautionary Statement - Response**

P312 - Call a POISON CENTER or doctor/ physician if you feel unwell  
 P314 - Get medical advice/ attention if you feel unwell  
 P321 - Specific treatment  
 P322 - Specific measures  
 P363 - Wash contaminated clothing before reuse  
 P302 + P352 - IF ON SKIN: Wash with plenty of soap and water  
 P303 + P361 + P353 - IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower  
 P307 + P311 - IF exposed: Call a POISON CENTER or doctor/ physician  
 P370 + P378 - In case of fire: Use appropriate extinguishant

**Precautionary Statement - Storage**

P403 + P235 - Store in a well-ventilated place. Keep cool  
 P405 - Store locked up

**Precautionary Statement - Disposal**

P501 - Dispose of contents/ container to an approved waste disposal plant

**Other hazards not defined in GHS** No information available

**Other hazards which do not result in classification** No information available

**Country / local information** No information available

**Important dangerous hazardous property and influence** No information available

**SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

**Substance/mixture** Mixture

Chemical Name	Weight (%)	CAS No.
Ethylene glycol monobutyl ether acetate	80-90%	112-07-2
Pigment	1-10%	* 1
Polymer	1-10%	* 1
Lactone compound	1-10%	* 1

\*1: Listed

**SECTION 4. FIRST-AID MEASURES**

**Eye contact** Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes  
 Immediate medical attention is required

**Skin contact** Remove as much as possible by wiping  
 Wash off immediately with soap and plenty of water  
 Get medical attention immediately if symptoms occur

<b>Inhalation</b>	Move to fresh air If symptoms persist, call a physician If breathing is irregular or stopped, provide cardiopulmonary resuscitation Keep at rest
<b>Ingestion</b>	Immediate medical attention is required
<b>Notes to physician</b>	Treat symptomatically
<b>Anticipated acute and delayed effects</b>	No information available
<b>Most Important Symptoms/Effects</b>	No information available
<b>Protection of first-aiders</b>	No information available

## SECTION 5. FIRE-FIGHTING MEASURES

<b>Suitable/unsuitable extinguishing media</b>	
<b>Extinguishing media</b>	Water spray Carbon dioxide (CO <sub>2</sub> ) Foam Dry powder Dry sand
<b>Extinguishing media which shall not be used for safety reasons</b>	No information available
<b>Specific hazards arising from the chemical</b>	No information available
<b>Special protective equipment for fire-fighters</b>	Wear personal protective equipment Evacuate area and fight fire from a safe distance
<b>Specific methods</b>	May ignite combustibles (wood paper, oil, clothing, etc.) Cool drums with water spray

## SECTION 6. ACCIDENTAL RELEASE MEASURES

<b>Personal precautions, protective equipment, and emergency procedures</b>	Wear suitable protective equipment Evacuate non-essential personnel
<b>Environmental precautions</b>	Dike to collect large liquid spills Try to prevent the material from entering drains or water courses
<b>Recovery and neutralization</b>	Soak up with inert absorbent material A lot of leakage things have the flow first stopped by earth and sand etc., and need to be led to a safe place Keep in suitable and closed containers for disposal.
<b>Secondary disaster prevention measures</b>	Remove all sources of ignition

## SECTION 7. HANDLING AND STORAGE

<b>Handling</b>	
<b>Technical measures</b>	Ensure adequate ventilation
<b>Advice on safe handling</b>	Wash hands before breaks and immediately after handling the product Smoking, eating and drinking should be prohibited in the application area
<b>Hygiene measures</b>	Handle in accordance with good industrial hygiene and safety practice

**Storage**

**Technical measures/Storage conditions** Keep container tightly closed in a dry and well-ventilated place  
Keep away from direct sunlight  
Keep at temperature at 5 to 35C.

**SECTION 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION****Exposure Guideline**

-

Chemical Name	ISHA - Occupational Exposure Limits ( Korea)	ISHA - Permissible Exposure Limits ( Korea)	ACGIH-TLV
Ethylene glycol monobutyl ether acetate	TWA 20 ppm TWA 131 mg/m <sup>3</sup>	-	TWA 20 ppm

**Engineering measures** Ensure adequate ventilation

**Personal protective equipment**

**Respiratory protection** In case of insufficient ventilation wear suitable respiratory equipment

**Eye protection** Goggles

**Hand protection** Rubber/latex/neoprene or other suitable chemical resistant gloves

**Skin and body protection** Long sleeved clothing Chemical resistant apron Antistatic boots

**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES****Appearance**

**Physical State** Liquid

**Color** Yellow

**Odor** Slight smell

**Odor Threshold** No information available

**pH VALUE** No information available

**Melting point/range** No information available

**Boiling Point/Range** No information available

**Flash point** 83 C (Cleveland Open Cup (COC))

**Evaporation rate** No information available

**Flammability (solid, gas)** No information available

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<b>UN Proper shipping name</b>	-
<b>UN Classification</b>	-
<b>Packaging group</b>	-
<b>Marine Pollutant</b>	Not applicable
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X300 YELLOW , GHKOENR0040820 - 1

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