

Safety Data Sheet

Issue date 18-Apr-2016 (DD-MMM-YYYY)

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

Product Name

Product name ECO SOLVENT INK ES211 YELLOW
H- Product code 013639
E- Product code S6082247-LU120109-LU120109

Recommended use of the product and restriction on use

Recommended Use Ink jet ink (solvent-based)

Supplier information

Company Name

<u>Company Name</u>	<u>Importer / Supplier</u>
DGI 52, CHEONGDAM-RO, YANGJU-SI, KOREA, 11459 TEL : + 82-31-820-8900 FAX: + 82-31-820-8990	-

Emergency Telephone -

SECTION 2: Hazards identification

Hazard/Toxicity classification

Physical Hazards

Health Hazards

Serious eye damage/eye irritation	Category 2
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Environmental toxicity

Pictogram including precautionary statements

Pictogram



Signal Word
WARNING

hazard statements

H319 - Causes serious eye irritation

precautionary statements

Precautionary Statements - Prevention

Wash face, hands and any exposed skin thoroughly after handling
 Wear protective gloves/protective clothing/eye protection/face protection

eye

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

If eye irritation persists: Get medical advice/attention

Hazards not otherwise classified

- Not applicable

SECTION 3: Composition/information on ingredients

Single Substance or Mixture mixture

Ingredients contributing to the classification of the mixture, etc.

Chemical name	CAS No	Identification number of Korea	Existing Substance Number	weight-%
1-Ethoxy-2-(2-methoxyethoxy)ethane	1002-67-1	2004-3-2613	-	60-70
Diethylene glycol diethyl ether	112-36-7	-	KE-03123	20-30
Propylene carbonate	108-32-7	-	KE-23785	5-10
Nickel, 5,5'-azobis-2,4,6(1H,3H,5H)-pyrimidinetrione complexes	68511-62-6	-	KE-25822	1-5

SECTION 4: First aid measures

Eye Contact

Eye Contact

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes
 If symptoms persist, call a physician
 Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes
 Keep eye wide open while rinsing
 If eye irritation persists: Get medical advice/attention

skin

Skin contact

Wash off immediately with plenty of water for at least 15 minutes
 If skin irritation persists, call a physician
 Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes
 Get medical attention if irritation develops and persists

inhalation

inhalation

Remove to fresh air
 If symptoms persist, call a physician
 Move to fresh air in case of accidental inhalation of vapors
 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
 If breathing is irregular or stopped, administer artificial respiration
 Seek immediate medical attention/advice

INGESTION

INGESTION Clean mouth with water
Clean mouth with water and drink afterwards plenty of water
Do NOT induce vomiting
Never give anything by mouth to an unconscious person
Call a physician
Potential for aspiration if swallowed
Get medical attention

Note to physicians

General advice If symptoms persist, call a physician
Do not breathe dust/fume/gas/mist/vapors/spray
Do not get in eyes, on skin, or on clothing

Note to physicians Treat symptomatically

SECTION 5: Fire fighting measures

Suitable (Unsuitable) extinguishing media

Suitable extinguishing media CO2, dry chemical, dry sand, alcohol-resistant foam, mist of alkali salts water
Move containers from fire area if you can do it without risk
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment
Remove combustible materials from their surroundings immediately

Unsuitable extinguishing media Do not use a solid water stream as it may scatter and spread fire

Specific hazards arising from the chemical

Precaution and protective equipment for fire fighters

Special protective equipment for fire-fighters Use personal protective equipment as required
In the event of fire and/or explosion do not breathe fumes
Special protective equipment for fire-fighters

Flammable properties May re-ignite after fire is extinguished
FLAMMABLE
Containers may explode when heated
Will form explosive mixtures with air
Vapors from liquefied gas are initially heavier than air and spread along ground

Special Extinguishing Media Cool container with water spray

SECTION 6: Accidental release measures

Personal precaution and protective equipment

Personal precautions

Use personal protective equipment as required
Avoid contact with skin, eyes and inhalation of vapors
Evacuate personnel to safe areas
Keep people away from and upwind of spill/leak
Stay upwind
ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area)
In the case of vapor formation use a respirator with filter model
In case of fire: Stop leak if safe to do so
Do not touch damaged containers or spilled material unless wearing appropriate protective clothing
Ensure adequate ventilation, especially in confined areas
Wash thoroughly after handling
Take precautionary measures against static discharges

Environmental Precautions

Environmental Precautions

Prevent entry into waterways, sewers, basements or confined areas
Do not flush into surface water or sanitary sewer system
Prevent further leakage or spillage if safe to do so
Prevent product from entering drains
See Section 12 for additional Ecological Information
Dispose of contents/container to an approved waste disposal plant
Avoid release to the environment
Collect spillage

Method for containment and cleaning up

Methods for Containment

Prevent further leakage or spillage if safe to do so

Methods for cleaning up

Soak up with inert absorbent material
Pick up and transfer to properly labeled containers
After cleaning, flush away traces with water
Prevent product from entering drains
Dam up
Use only non-sparking tools

OTHER INFORMATION

Ventilate the area

SECTION 7: Handling and storage

Advice on safe handling

Advice on safe handling

Ensure adequate ventilation, especially in confined areas
Use personal protection recommended in Section 8
Use with local exhaust ventilation
Do not breathe dust/fume/gas/mist/vapors/spray
Take precautionary measures against static discharges
Use only in well-ventilated areas
Avoid contact with skin, eyes or clothing
Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea
Wash contaminated clothing before reuse
Wash hands thoroughly and gargle after handling
Burn or dispose of the wiping cloths used to clean up the product at once

Safety storage(Including condition to avoid)

Storage Conditions

- Keep containers tightly closed in a dry, cool and well-ventilated place
- Keep out of the reach of children
- Keep in properly labeled containers
- Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity)
- Use spark-proof tools and explosion-proof equipment
- Incompatible with oxidizing agents
- Store locked up
- The product shall be stored in the original containers/vessels

SECTION 8: Exposure controls/personal protection

Control parameter

Engineering control

Engineering controls

- Ensure adequate ventilation, especially in confined areas
- Showers
- Eyewash stations
- Ventilation systems

Personal Protective Equipment

Respiratory protection

- Wear suitable respiratory equipment
- Respirator cartridge should be exchanged at regular intervals or at proper time according to breakthrough time

Eye Protection

- Tight sealing safety goggles
- Face protection shield
- Wear safety glasses with side shields (or goggles)

Hand Protection

- Wear protective gloves

Body protection

- Wear suitable protective clothing
- Apron
- Gloves made of plastic or rubber
- Antistatic footwear

SECTION 9: Physical and chemical properties

Physical state(Appearance,color)

Physical state	liquid
color	colored
ODR	slight odor
odor threshold	No information available

Property	Values	Remarks • Flash point measuring method
pH	Not applicable	
Melting point/Freeze point	no data available	
Initial boiling point/Boiling range	no data available	No information available
Flash Point	≥70°C	Seta Closed Cup
Evaporation Rate	no data available	No information available
Flammability(solid/gas)	combustible	
Explosive limits(lower and upper)		
Upper flammability limits	no data available	
Lower Flammability Limit	no data available	
vapor pressure	no data available	No information available
solubility		

Water solubility	Soluble in water	
Organic Solvent Solubility	soluble in organic solvents	
Vapor Density	no data available	No information available
Specific gravity	0.9-1.1	
n-Octanol partition coefficient	no data available	No information available
Autoignition temperature	no data available	No information available
decomposition temperature	no data available	No information available
viscosity	no data available	
molecular weight	no data available	

Chemical name	Boiling point °C	density	Vapor pressure	Vapor density	Flash Point	Autoignition temperature	n-Octanol partition coefficient
Diethylene glycol diethyl ether	188 °C	-	0.5 mmHg at 25 °C	-	82 °C open cup	-	-
Propylene carbonate	241.9 °C	1.204 g/cm ³ at 20 °C	0.03 mmHg at 20 °C	3.52	135 °C open cup	510 °C	0.48 at 25 °C

SECTION 10: Stability and reactivity

Chemical stability and Possibility of hazardous reactions

stability Stable under normal conditions
Heating may cause an explosion

Conditions to avoid(Static discharge, Mechanical impact, fluctuation)

Conditions to Avoid Take precautionary measures against static discharges
Extremes of temperature and direct sunlight

Sensitivity to Static Discharge May be ignited by heat, sparks or flames

Sensitivity to Mechanical Impact May be ignited by heat, sparks or flames

Incompatible material

Hazardous substance which is arisen from decomposition

Hazardous decomposition products May emit toxic fumes under fire conditions

SECTION 11: Toxicological information

Information on likely routes of exposure

inhalation Reference to other sections; 4
INGESTION Reference to other sections; 4
Eye Contact Reference to other sections; 4
Skin contact Reference to other sections; 4

Unknown acute toxicity 33.6% of the mixture consists of ingredient(s) of unknown toxicity

Health hazards information

Acute toxicity(Including information on likely routes of exposure)

Oral LD50
dermal LD50

Inhalation - Dust/Mist LC50

Inhalation - Vapor LC50

Component Information

Chemical name	Oral LD50	dermal LD50	Inhalation LC50	Classification according to Regulation (EC) No. 1272/2008 [CLP] ANNEX VI Table3.1 / Other	Japan GHS Classification
1-Ethoxy-2-(2-methoxyethoxy)ethane	-	-	-	Eye Irrit. 2A (H319)	Eye Irrit. 2A
Diethylene glycol diethyl ether	-	-	-	Eye Irrit. 2A (H319)	Eye Irrit. 2A Flam. Liq. 4
Propylene carbonate	29000 mg/kg (Rat)	> 20 mL/kg (Rabbit)	-	Eye Irrit. 2 (H319)	Eye Irrit. 2A

GHS/CLP Classification Note:

Acute Tox. Der. :Acute toxicity - Dermal, Acute Tox. Inh. (D/M) :Acute toxicity - Inhalation - Dusts and Mists, Acute Tox. Inh. (Gas) :Acute toxicity - Inhalation - Gases, Acute Tox. Inh. (Vap) :Acute toxicity - Inhalation - Vapours, Acute Tox. Oral :Acute toxicity - Oral, Aquatic Acute :Acute Hazardous to the aquatic environment, Aquatic Chronic :Chronic Hazardous to the aquatic environment, Asp. Tox. :Aspiration hazard, Carc. :Carcinogenicity, Expl. :Explosives, Eye Dam. :Serious eye damage, Eye Irrit. :Eye irritation, Flam. Gas :Flammable gases (including chemically unstable gases), Flam. Liq. :Flammable liquids, Flam. Solid :Flammable solids, Lact. :Effects on or via lactation, Met. Corr. :Corrosive to metals, Muta. :Germ cell mutagenicity, Org. Perox. :Organic peroxides, Ox. Gas :Oxidizing gases, Ox. Liq. :Oxidizing liquids, Ox. Sol. :Oxidizing solids, Press. Gas :Gases under pressure, Pyr. Liq. :Pyrophoric liquids, Pyr. Sol. :Pyrophoric solids, Repr. :Reproductive toxicity, Resp. Sens. :Respiratory sensitization, Self-heat. :Self-heating substances and mixtures, Self-react. :Self-reactive substances and mixtures, Skin Corr. :Skin corrosion, Skin Irrit. :Skin irritation, Skin Sens. :Skin sensitization, STOT RE :Specific target organ toxicity – Repeated exposure, STOT SE :Specific target organ toxicity – Single exposure, Water-react. :Substances and mixtures which, in contact with water emit flammable gases

Delayed and immediate effects as well as chronic effects from short and long-term exposure

skin corrosion/irritation No information available

Serious eye damage/eye irritation No information available

Respiratory sensitization Skin sensitization No information available

carcinogenicity

Chemical name	IARC
Nickel, 5,5'-azobis-2,4,6(1H,3H,5H)-pyrimidinetrione complexes	Group 1

IARC Note:

Group 1:Carcinogenic to humans, Group 2A:Probably carcinogenic to humans, Group 2B:Possibly carcinogenic to humans, Group 3:Not classifiable as to carcinogenicity in humans

Germ Cell Mutagenicity No information available

Reproductive Toxicity No information available

Specific target organ toxicity(Single exposure) No information available

Specific target organ toxicity(Repeated exposure) No information available

Aspiration Hazard No information available

SECTION 12: Ecological information

Eco toxicity	None known
100% of the mixture consists of component(s) of unknown hazards to the aquatic environment	
Persistence and degradability	No information available
Bioaccumulation	No information available
Mobility	No information available
Other adverse effect	No information available

SECTION 13: Disposal considerations

Disposal method	Should not be released into the environment Disposal should be in accordance with applicable regional, national and local laws and regulations
Precaution of disposal(Including method of disposing contaminated packaging and container)	Improper disposal or reuse of this container may be dangerous and illegal
OTHER INFORMATION	Store in a tightly sealed drum to prevent the spillage of the content

SECTION 14: Transport information

	Containers/vessels must be leakage-free. Loading must be done to prevent containers from falling, dropping down and being damaged Take necessary steps to prevent collapse
UN number	Not applicable
Packing group	Not applicable
ERG Code	133
Proper shipping name	Not applicable
IMDG	Not regulated
UN number	Not applicable
Packing group	Not applicable
ICAO (air)	Not regulated
UN number	Not applicable
Packing group	Not applicable
ADR	Not regulated
UN number	Not applicable
Packing group	Not applicable
IATA	Not regulated
UN number	Not applicable
Packing group	Not applicable
RID	Not regulated
UN number	Not applicable
Packing group	Not applicable

SECTION 15: Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture

The Industrial Safety and Health Act Not applicable

Chemical Control Act Applicable

Chemical name	Accident Precaution Chemicals	Toxic chemicals	Observational Chemicals	Prohibited from manufacture, import	Restricted from manufacture, import	PRTR Group 1	PRTR Group 2
Nickel, 5,5'-azobis-2,4,6(1H,3H,5H)-pyrimidinetrione complexes	-	-	-	-	-	Present	-

Safety Control Of Dangerous Substances Act Class 4 flammable liquids - Class 3 petroleum chemicals, water soluble, Designation volume, 4,000l

Waste control act Not applicable

Other domestic or international regulations

SECTION 16: Other information

Reference

Reference sources LOLI Database (ChemADVISOR, Inc.)

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OTHER INFORMATION No information available

Disclaimer

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End of Safety Data Sheet