

MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: DUOTEC PROCESS SOY SERIES
 General Use: Printing ink
 Product Description: A mixture of pigments in oleoresinous vehicles.

MANUFACTURER: KOREA SPECIAL INK IND.Co.,LTD
 ADDRESS: 294, Bangchuk-ro, Michuhol-gu, Incheon, 22121, Rep.of Korea
 EMERGENCY TELEPHONE NUMBERS Telephone 82-32-865-3031 8:30-17:30 Kor M-F
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2. HAZARDS IDENTIFICATION

UN Hazard Classification
 HAZARD CLASS : Not Applicable
 UN/NA NUMBER : Not Applicable

GHS Classification* :

Physical Flammable Liquid – Not classified
 Health Acute Toxicity (oral) – Not classified
Acute Toxicity (inhalation) – Category 4
Eye Corrosion (serious damage/irritation) – Category 2B
Skin Corrosion – Category 2
Skin Sensitization – Category 1
 Carcinogenicity – Not classified
 Reproductive Toxicity – Not classified
Target Organ Toxicity (following single exposure) – Category 3
Target Organ Toxicity (following repeated exposure) – Category 3
 Environmental
 Aquatic Toxicity (acute) – Not classified
 Aquatic Toxicity (chronic) – Not classified

GHS Label Elements

Symbols	
Pictogram code	GHS07 GHS08
	 
Signal word	Warning
Hazard Communication	
Hazard Code	
H332	Harmful if inhaled (mist)
H320	Causes eye irritaion
H317	May cause allergic skin reaction.
H335	May cause respiratory irritation
Prevention	
Prevention Code	
P201	Obtain special instructions before use.

P202	Do not handle until all safety precautions have been read and understood.
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P264	Wash thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P272	Contaminated work clothing should not be allowed out of the workplace.
P280	Wear protective gloves/protective clothing/eye protection/face protection
P281	Use personal protective equipment as required.
P302+P352	IF ON SKIN: Wash with plenty of soap and water.
P308+P313	IF exposed or concerned: Get medical advice/attention.
P309+P311	IF exposed or if you feel unwell: Call a POISON CENTER or doctor/physician.
P314	Get medical advice/attention if you feel unwell.
P321	Specific treatment (see Prevention on this label).
P363	Wash contaminated clothing before reuse.
P405	Store locked up.
P501	Dispose of contents/container in accordance with local, state and federal regulation.

Other Precautionary Statements

keep away from heat/sparks/open flame. – No smoking.
 Use only in a well-ventilated area.
 Store container tightly closed in cool/well-ventilated place.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substances presenting a health or environmental hazard within the meaning of Regulation (EC) No 1272/2008 and Directive 67/548/EEC.

COMPOSITION	CONTENT		EU CLP & DSD (Risk)	
	CAS#	wt%	Classification(*)	
Rosin modified phenolic resin	70955-45-2	25 – 35	–	–
Vegetable oil		20 – 25	–	–
[Ingredient]				
Soybean oil	8001-22-7	15 – 25	–	–
Petroleum hydrocarbon	64742-47-8	1 – 10	–	–
Petroleum hydrocarbon	64742-55-8	10 – 20	–	–
Pigment (Black: Carbon black)	1333-86-4	10 – 20	–	–
Pigments (Yellow, Magenta, Cyan)	Various	10 – 20	–	–
Additives	Various	1 – 5	–	–

(*) For full text of Products EU CLP & DSD see section 15

4. FIRST AID MEASURES

EYE CONTACT : In case of eye irritation, flush immediately with clean & large amounts of water for at least 15minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. Get immediate medical attention.

SKIN CONTACT : Itching or burning of the skin. Immediately flush the skin with plenty of water while removing contaminated clothing and shoes. Wash skin thoroughly with mild soap / water. Get immediate medical attention. Wash contaminated clothing before reuse.

Inhalation : Remove person to fresh air. If respiratory irritaiton, dizzines, nausea , or unconsciousness occurs, seek immediate medical assistance. If breathing has stopped, give artificial respiration.

INGESTION : Get immediate medical attention. Do not induce vomiting unless directed by medical personnel.

5. FIRE-FIGHTING MEASURES

Suitable Extinguish Media : Use dry chemical, carbon dioxide, or foam to extinguish fire. Water may be ineffective but should be used spray/fog for cooling and suffocating. Use water to dilute spills and to flush them away from sources of ignition.

Special Fire Fighting Procedures : Exposed firefighters must wear proper protective equipment and positive pressure self-contained breathing apparatus with full face mask. Do not inhale combustion gases.

HAZARDOUS DECOMPOSITION PRODUCTS : Products of combustion are hazardous including carbon monoxide and Carbon dioxide.

6. ACCIDENTAL RELEASE MEASURES

GENERAL : Consult an expert on the disposal of recovered material. Ensure disposal in compliance with government requirements and ensure conformity to local disposal regulations. Notify the appropriate authorities immediately. Take all additional action necessary to prevent and remedy the adverse effects of the spill.

LAND SPILL : Vapor protective clothing should be worn for and leaks. Shut off ignition sources; no flares, smoking or flames in hazard area. Keep public away. Take up with sand or other noncombustible absorbent material and place into containers for later disposal. Prevent additional discharge of product, if possible to do so without hazard.

WATER SPILL : Remove from surface by skimming or with suitable absorbents. Do not flush to sewer or waterways. Prevent release to the environment if possible.

7. HANDLING AND STORAGE

Handling

Avoid contact with eyes. Avoid prolonged repeated skin contact and breathing mists/vapours. Use only with adequate ventilation. Use good hygiene practices. Wash hands before eating, drinking, smoking. Remove contaminated clothing and clean before re-use. Keep away from heat and flame. Keep operating temperatures below ignition temperatures at all times. Use nonsparking tools.

Storage

STORAGE TEMPERATURE (min. / max.) : 59°F (15°C) / 86°F (30°C)

AVERAGE SHELF LIFE : 2 years at 59°F (15°C)

SPECIAL SENSITIVITY : Heat. Air (Oxygen).

Risk of rapid polymerization / possibly rupturing container by fire, high heat sources, raising temperature.

Store in tightly closed containers in cool, dry, well-ventilated area away from heat, sources of ignition and incompatibles. Ground lines and equipment used during transfer to reduce the possibility of static spark-initiated fire or explosion. Store at ambient or lower temperature. Store out of direct sunlight. Protect against physical damage.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Limits

Substance	CAS#	OSHA		ACGIH	
		TWA	STEL	TWA	STEL

Petroleum hydrocarbon	64742-47-8	n/e	n/e	n/e	n/e
Petroleum hydrocarbon	64742-55-8	5mg/m ³	n/e	5mg/m ³	10mg/m ³
Carbon black	1333-86-4	3.5mg/m ³	n/e	3.5mg/m ³	n/e

n/e – none established

OSHA Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200) :
Carbon black is considered hazardous ingredient (List on "Table Z-1") .

ACGIH : Petroleum hydrocarbon (as oil mist) TLV; 5mg/m³ as TWA [ACGIH2004], Carbon black TLV ; 3.5mg/m³ as TWA & A4 (not classifiable as a human carcinogen)[ACGIH2004].

Engineering Controls

VENTILATION : Local exhaust ventilation may be necessary to control air contaminants to their exposure limits. The use of local ventilation is recommended to control emissions near the source. Provide mechanical ventilation for confined spaces. Use explosion-proof ventilation equipment.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Wear chemical safety splash-proof goggles for eye protection and face shield. Avoid skin contact. Wear impervious gloves for skin protection. Use NIOSH approved respirators when necessary.

9. PHYSICAL and CHEMICAL PROPERTIES

APPEARANCE : Viscous Paste	VAPOR PRESSURE : No Data Available
Color : Various Colors	VAPOR DENSITY (AIR=1) : No Data Available
ODOR : Mild	MOLECULAR FORMULA : Mixture
FLASH POINT : > 132°C / 270°F	MOLECULAR WEIGHT : Mixture
BOILING POINT : 270-320°C (Mineral oil)	SPECIFIC GRAVITY : 0.9-1.2 at 25°C / 77°F
MELTING POINT : Not Applicable	SOLUBILITY IN WATER : Insoluble
	pH : No Data Available

10. STABILITY AND REACTIVITY

Condition to avoid : Avoid open flames, welding arcs, or other high temperature sources which include thermal decomposition.

Incompatibles : Oxidizing agents

Hazardous Reactions/Decomposition Products : Reacts with strong oxidizing agents. Thermal decomposition products may include oxides of carbon and nitrogen.

11. TOXICOLOGICAL INFORMATION

Corrosive and Irritant Properties

Petroleum hydrocarbon	Oral LD50 (rat) > 5,000mg/kg
	Dermal LD(rabbit) > 5,000mg/kg
	Inhalation LD50(rat) = 2.18mg/L
Cobalt compound	Oral LD50 (rat) = 3900mg/kg

Petroleum Hydrocarbon
Acute Toxicity (inhalation)- Category 4
Skin Corrosion/irritation- Category 3
Eye Corrosion/irritation- Category 2B
Aspiration hazard - Category 1

Carbon Black -GHS Information
Carcinogenicity - Category 2**

** Classified on the basis of evaluation as Group 2B (Possibly carcinogenic to humans) according to IARC. Printing inks are not classifiable as to their carcinogenicity to humans (Group 3).

Target Organ Toxicity (following repeated exposure) – Category 1
Causes damage to lungs.

Cobalt compound

Skin Sensitization – Category 1

Carcinogenicity – Category 2*

* IARC : Cobalt and compounds are possibly carcinogenic to humans (Group 2B). But The material concerned was not classified so that there was the description of "There is *inadequate evidence* for the carcinogenicity of cobalt-... and cobalt[III] acetate in experimental animals." (4.5 Evaluation of IARC Monographs/mono52-16.11/10/09)

Other evaluation of Carcinogenicity are not applicable by EPA, EU, and NTP.

12. ECOLOGICAL INFORMATION

No information available

GHS Information – Not classified

13. DISPOSAL CONSIDERATIONS

Dispose of in accordance with Federal, State and local regulations.
Empty containers must be handled with care due to product residue.

14. TRANSPORT INFORMATION

U.S. Department of Transportation (DOT)

Proper SHIPPING NAME : Not applicable

HAZARD CLASS : Not applicable

UN/NA NO : Not applicable

Packing Group : Not applicable

Labels Required : Not applicable

The following description is transport in accordance with ADR for road, RID for rail, IMDG for sea and ICAO for air transport.

ADR/RID/IMDG/ICAO/IATA Class : Not applicable

UN Number : Not applicable

Label : Not applicable

Packing group: Not applicable

Proper SHIPPING NAME : Not applicable

15. REGULATORY INFORMATION

(1). U.S. Federal Regulations

Toxic Substances Control Act (TSCA) information

All components of these products are included on the 8 (b) TSCA Inventory list.

Superfund Amendments and Reauthorization Act (SARA) Title III Information

These products contains none of the substances subject to reporting requirements of SARA section 313 (40 CFR 372)

National Fire Protection Association (NFPA) Ratings : This information is intended solely for the use of

Individuals trained in the NFPA system.

Health : 1
Flammability : 1
Reactivity : 0

(2). EU Regulations

European Inventory of Existing Chemicals (EINECS) : All of the components of this product are included on EINECS.

The following information is based on current EU (directives 67/548/EEC – 28th update [2001/59/EC], 1999/45/EC, 2001/58/EC and CLP Hazard classification [Regulation (EC) No 1272/2008]).

EU CLP & DSD Classification :

Designation according to EC guidelines in label :

CLP	CLP Hazardous substance : none CLP Classification : No classification standards applicable
DSD	Contains [Cobalt driers]. May produce allergic skin reaction. S: 7-24/25-26-28-36/37-61

Code letter and hazard designation of product: No symbol

Risk (R) Phrases: none
By the component of under cobalt dryer 1%, not classified Risk phrase R42/43.

Safety (S) Phrases :
S7 Keep container tightly closed
S24/25 Avoid contact with eyes and skin
S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S28 After contact with skin, wash immediately with plenty of water and seek medical advice.
S36/37 Wear suitable protective clothing and gloves.
S61 Avoid release to the environment. Refer to special instructions/Safety data sheet

Components Hazard Information :

Petroleum hydrocarbon
 Cas No.64742-80-9 is classified into **R45** (May cause cancer) for DSD, or into **Carc.1B, GHS08, Dgr** and **H350** for CLP, but this product is refined highly, and this material removes a cancer-causing material. IARC classified Group 3.

Cobalt compound (Co CAS No. 7440-48-4)*
 CLP Resp. Sens. 1 GHS08 H334
 Skin Sens. 1 Dgr H317
 Aquatic H413
 Chronic 4

DSD Xn Harmful
 R42/43 May cause sensitization by inhalation and skin contact.
 R68 Possible risk irreversible effects.

*Cobalt in the material concerned is not classified. in the CLP and DSD Regulations for the content of under 0.1%.

Follow all regulations in your country.

16. OTHER INFORMATION

Revision Indicator : New MSDS

To the best of our knowledge, the information contained herein is accurate. However, neither KOREA

SPECIAL INK IND. Co., LTD. Nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist.