

MATERIAL SAFETY DATA SHEET

Product Name: S-61

Revision: Feb. 01, 2019

1. CHEMICAL PRODUCT AND COMPANY INFORMATION

Product Name Supreme Ink
Product Code S-61

2. COMPOSITION / INFORMATION ON INGREDIENTS

Component	CAS Number	EC & Risk Phrases		Composition % w/w	Exposure Limits			
		EC	R		TWA		STEL	
					ppm	mg/m ³	ppm	mg/m ³
Additive	proprietary	---	-----	5 ~ 15	---	---	---	---
Glycerol	50-81-5	---	-----	77 ~ 93	---	---	---	---
Pigment ^(2,4)	proprietary	---	-----	2 ~ 8	---	---	---	---

NOTES

1. Not classified as hazardous according to the criteria of NOHSC.
2. Not classified as hazardous according to the criteria of Worksafe Taiwan.
3. Classified as hazardous according to the criteria of Worksafe Taiwan.
4. Other ingredients, including pigment, do not present a health hazard within the meaning of the EC/CHIP2 regulations.

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3. HAZARDOUS INFORMATION

CLASSIFICATION (CHIP) Not Available

POISON SCHEDULE NO. S5

HAZCHEM CODE Not Available

DANGEROUS GOODS CLASSIFICATION Not Applicable

GENERAL

No adverse health effects are expected if the product is handled in accordance with this Material Safety Data Sheet (MSDS) and the product label.

Symptoms that may arise if the product is mishandled are listed below:

INHALATION

This product has a very low vapour pressure and is not expected to present a hazard under normal conditions of use.

Where this product is used in poorly ventilated areas, at elevated temperatures or in confined spaces, the vapour may cause irritation to mucous membranes and respiratory tract. Inhalation hazard is increased at higher temperatures and thus may be harmful.

Acute effects from inhalation of high vapor concentrations may cause respiratory, chest and nasal irritations, with coughing, sneezing, headache and even nausea. If exposure to highly concentrated solvent atmosphere is prolonged, this may lead to narcosis, unconsciousness, even coma and possible death.

EYE CONTACT

This product is a potential eye irritant. The product can cause a high level of eye discomfort and is potentially capable of causing pain and severe conjunctivitis. Corneal injury may develop, with possible permanent impairment to vision, if not properly or adequately treated.

SKIN CONTACT

May cause irritation in contact with skin. Prolonged skin contact may result in drying and defatting of the skin and result in irritant contact dermatitis.

May cause skin sensitization (allergic skin reaction) in susceptible individuals under certain exposure conditions usually upon repeated or prolonged skin contact. Individuals sensitized, may also react to this product after skin contact.

Can be absorbed through the skin with resultant toxic effects – see INGESTION

INGESTION

Ingestion may cause nausea, vomiting, and abdominal pains. Swallowing large amounts may result in liver, kidney, blood disorders, and central nervous system effects. No specific data is available for this product.

CHRONIC

No specific product data is available. This health assessment is based on a consideration of the composition of this product. Repeated or prolonged exposure of this product could result in liver and kidney changes, including blood and central nervous system disorders. People with pre-existing liver and kidney disorders should avoid contact with this material.

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4. EMERGENCY AND FIRST AID MEASURES

Poison Information Centers in each State capital city can provide additional assistance for scheduled poisons

INHALATION

Remove from patient from exposure- avoid becoming a victim. If possible, move the victim to fresh air. Allow patient to assume most comfortable position and keep warm and rest. Keep at rest until fully recovered.

Ensure airways are clear and have qualified person give oxygen via a facemask if breathing difficulties exist and/or if patient is cyanotic (blue). If breathing has stopped apply artificial respiration IMMEDIATELY.

In event of cardiac arrest, apply external cardiac massage. Obtain immediate medical attention if ill effects occur.

EYE CONTACT

If contact with eye(s) occurs, immediately irrigate eyes with copious amounts of water for at least 15 minutes holding eyelid(s) open. Keep eyelids apart and away from eye. Move the eyelids by occasionally lifting the upper and lower lids.

NOTE: Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

URGENTLY seek medical attention.

SKIN CONTACT

Remove all contaminated clothing including footwear (after rinsing with water). Wash gently but thoroughly with water and non-abrasive soap for approximately 15 minutes. Ensure contaminated clothing is washed before re-use or discard. If irritation develops and persists, seek medical attention.

Can be absorbed through the skin with resultant toxic effect – see 3. HAZARDOUS INFORMATION: INGESTION.

INGESTION

Rinse mouth with water. Give plenty of water to drink. If vomiting occurs, give further water to drink. NEVER give anything by mouth to an unconscious person. Seek IMMEDIATE medical advice.

FIRST AID FACILITIES

Eyewash and normal washroom facilities.

ADVICE TO PHYSICIAN

Treat symptomatically. Activated charcoal mixture may be of benefit. Suspend 50 g of activated charcoal (food or pharmaceutical grade purity) in 400 mL of water and mix well. Administer 5 mL/Kg or 350 mL for an average adult.

5. EXPLOSION HAZARD DATA AND FIRE FIGHTING MEASURES

EXPLOSIVE LIMITS

% Lower 0.9 approx. % Upper 12 approx.

FLASH POINT

Not available.

AUTO-IGNITION TEMP.

Not available

SPECIFIC HAZARDS

Low hazard. Not classed as flammable.

Product can form flammable mixtures or can burn only upon heating to temperatures at or above the flash point.

May form flammable vapor mixtures with air. Vapor may travel a considerable distance to source of ignition and flash back.

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EXTINGUISHING MEDIA

Use water spray to cool fire exposed surfaces and protect personnel.

Use Water spray, foam or dry agent (carbon dioxide (CO₂) or dry chemical powder) to extinguish fire. Water and foam may cause frothing.

SPECIAL FIRE FIGHTING PROCEDURES

Fire fighters to wear self-contained breathing apparatus and full protective clothing if risk of exposure to vapor or products of combustion.

UNUSUAL FIRE AND EXPLOSION HAZARDS

Closed containers may rupture (due to build up of pressure) when exposed to extreme heat

HAZCHEM CODE

Not Available

HAZARDOUS DECOMPOSITION PRODUCTS

Combustion will evolve toxic and irritating vapors. Thermal decomposition will produce oxides of carbon and nitrogen

6. ACCIDENTAL RELEASE MEASURES

GENERAL

Keep public away. Avoid inhalation of vapors. Evacuate all necessary personnel. Shut off source of contamination if this can be done safely. Ensure suitable personal protection during removal of spillage. Remove potential sources of ignition.

If possible contain the spill. Absorb spillage onto sand, earth or other suitable inert adsorbent material. Transfer to a suitable type and appropriately labeled container for disposal. Wash the spillage area clean with biodegradable surfactants if necessary. Contain run-off and prevent from entering drains & waterways.

If large quantities of this material enter the waterways, contact the Environmental Protection Authority (EPA), or your local Waste Management Authority.

If necessary, consult an expert on the disposal of recovered material. Ensure disposal is in compliance with government requirements and ensure conformity of local disposal regulation. Please notify appropriate authorities immediately. Take all additional action necessary to prevent and remedy the adverse effects of the spill.

SPILL

Dike spill. Absorb with inert material and collect for disposal. Flush area with water. Prevent washings from entering waterways.

7. HANDLING AND STORAGE

EXPOSURE GUIDELINES

None established.

HANDLING

Keep material away from sparks and other ignition sources. Wear appropriate protective equipment to prevent inhalation, skin and eye contact. Ensure a high level of personal hygiene is maintained when using any product i.e., ALWAYS wash hands before eating, drinking, smoking or using the toilet.

STORAGE

Store in a cool, dry place away from direct sunlight or sources of heat. Avoid all sources of ignition. Avoid contact with incompatible materials such as strong oxidizing agents, acids, alkalis. Keep containers tightly closed and sealed until ready for use.

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**STORAGE REGULATIONS &
SPECIAL PRECAUTIONS**

This material is a SCHEDULED S6 POISON and must be stored, handled and maintained according to the appropriate National Regulations.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

EXPOSURE LIMITS

Product: JWD-K Series

Worksafe Taiwan TWA: none assigned
Worksafe Taiwan STEL: none assigned

Component: Additive

Worksafe Taiwan TWA: none assigned
Worksafe Taiwan STEL: none assigned

PEL (OSHA) none assigned
TLV (ACGIH) none assigned
AEL⁽¹⁾ (Dupont) 8 hour TWA: 1.5 ppm, 10 mg/m³,

Reference

(1) AEL is Dupont's 'Acceptable Exposure Limit'. Regulatory imposed, occupational exposure limits, which are lower than the AEL, shall take precedence.

Component: Glycerol

Worksafe Taiwan TWA: none assigned
Worksafe Taiwan STEL: none assigned

**ENGINEERING CONTROLS
(VENTILATION):**

Natural ventilation should be sufficient under normal conditions of use. However, where vapors or mists are generated, the use of a grounded local exhaust ventilation system, drawing vapors or mists away from workers breathing zones, is highly recommended.

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PERSONAL PROTECTION

Respiratory:	Where ventilation is inadequate and vapors or mists are generated the use of an 'Air Purifying Respirator' with an 'Organic Vapor Filter', meeting requirements of AS/NZS 1715 and AS/NZS 1716, is highly recommended.
Protective Gloves	The use of impervious gloves is recommended.
Eye Protection	Wear chemical splash goggles or shielded safety glasses. An eyewash station should be readily available
Protective Clothing	The use of plastic aprons, sleeves, overalls and rubber boots are recommended.
General	For operations where contact can occur, wear clothing to limit skin contact. Always wash hands before smoking, eating drinking or using the toilet. Wash contaminated (non-disposable) clothing and other protective equipment before storing or re-using.

9. PHYSICAL AND CHEMICAL PROPERTIES

<i>APPEARANCE</i>	Liquid (Black)	<i>VAPOUR PRESSURE</i>	< 0.2 Kpa @ 20°C, estimated
<i>ODOR</i>	Odorless	<i>VAPOUR DENSITY</i>	>1 (Air=1.0)
<i>BOILING POINT</i>	> 100 °C	<i>EVAPORATION RATE</i>	< 0.05 (n-Butyl Acetate=100)
<i>FREEZING POINT</i>	Not available	<i>PERCENT VOLATILE</i>	Not available
<i>SPECIFIC GRAVITY</i>	1.00±0.05 g/mL, approx.	<i>VOC:</i>	Not available
<i>PH</i>	6-9	<i>VISCOSITY:</i>	< 30 cps
<i>SOLUBILITY in water</i>	soluble	<i>Octane / water partition</i>	—

10. STABILITY AND REACTIVITY

<i>STABILITY</i>	Stable under normal conditions of use.
<i>HAZARDOUS POLYMERISATION</i>	Will not occur.
<i>CONDITIONS TO AVOID</i>	Excessive heat. Strong oxidizing agents, reducing agents, acids, alkalis and moisture.
<i>INCOMPATIBILITY</i>	Do not expose to strong alkalis (caustics) at elevated temperatures. Avoid acids and strong oxidising agents
<i>HAZARDOUS THERMAL DECOMPOSITION PRODUCTS</i>	Thermal decomposition may produce oxides of carbon and nitrogen

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11. TOXICOLGICAL INFORMATION

ACUTE TOXICITY

Products represented by this MSDS have not been tested for acute toxicological effects. Component toxicity data is presented below:

Additive

Dermal (absorption)	LD50 (rabbit)	> 2'250 mg/Kg
Inhalation (4 hour)	LC50 (rat)	> 11 mg/L
Inhalation (1 hour)	LC50 (rat)	> 10.7 mg/L
Oral	LD50 (rat)	8'191 mg/Kg

The mixture is a mild to severe skin irritant and a moderate eye irritant, but is not a skin sensitiser in animals.

Glycerol

Oral	LD50 (rat)	Mild Irritant ⁽¹⁾
Dermal	LD50 (rabbit)	Mild Irritant ⁽¹⁾
SKIN	LD50 (rabbit)	Mild Irritant ⁽¹⁾
EYES	LD50 (rabbit)	Mild Irritant ⁽¹⁾

Rats and rabbits survived a 4 hour exposure by inhalation to 4000 ppm with no ill effects. ⁽²⁾

Reference

Registry of Toxic Effects of Chemical Substances 1993; Ed. D. Sweet, US Dept. of Health & Human Services, Cincinnati 1993.

Color Component (s)

Oral	LD50 (rat)	5000 mg/Kg
SKIN	LD50 (rabbit)	Non-Irritant ⁽⁵⁾
EYES	LD50 (rabbit)	Non- Irritant ⁽⁶⁾

Reference

(4) OECD 404

(5) OECD 405

INHALATION EFFECTS

Additive

Inhalation (4 hour)	LC50 (rat)	> 11 mg/L
Inhalation (1 hour)	LC50 (rat)	> 10.7 mg/L

Toxic effects described in animals from exposure by inhalation include upper respiratory tract irritation.

Toxicity described in animals from repeated exposure by inhalation includes decreased weight gain, absolute and relative liver weight decrease, and degeneration of olfactory epithelium (nasal tissue).

Glycerol

Remove victim to fresh air. If breathing is difficult administer oxygen. If not breathing, have qualified person give artificial respiration. Obtain medical attention

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EYE EFFECTS

Additive

A single 4-hour exposure to 60 ppm caused transient corneal opacity and transient increases in the distance from the cornea to the anterior surface of the lens of the eye.

A single application of 10 μ L to the eye caused corneal opacity. Administration of 10-100 μ L of a similar mixture caused corneal opacity, transient increases in corneal thickness, and transient corneal anaesthesia.

A single application of approx. 60 mg/Kg to the skin caused transient increases in the distance from the cornea to the anterior surface of the lens of the eye.

Glycerol

EYES LD50 (rabbit) Mild Irritant.

Material may be an eye irritant – see Acute Toxicity.

SKIN EFFECTS

Additive

Dermal (absorption) LD50 (rabbit) > 2'250 mg/Kg

The mixture is a mild to severe skin irritant, but is not a skin sensitiser in animals. A single application of approx. 60 mg/Kg to the skin caused transient increases in the distance from the cornea to the anterior surface of the lens of the eye.

Glycerol

Dermal LD50 (rabbit) >2000 mg/Kg

SKIN LD50 (rabbit) Mild Irritant

May cause allergic reaction

Possible irritant

Repeated or prolonged contact may cause sensitization

ORAL EFFECTS

Additive

Oral LD50 (rat) 8'191 mg/Kg

Toxicity described in animals from repeated exposure by ingestion include weight loss, but there were no pathological abnormalities noted.

Glycerol

Oral LD50 (rat) 6200 mg/Kg

Swallowing can result in nausea, vomiting and abdominal pain. Swallowing large amounts can result in liver, kidney, blood disorders and central nervous system effects – see Acute Toxicity.

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OTHER INFORMATION

Additive

Can cause blurred vision in humans. The mechanism for blurred vision is unknown. Based on observed effects from animal studies, it is believed that some symptoms of pre-existing eye disease could be aggravated by overexposure of this material

Glycerol

Evidence from animal tests indicate that repeated or prolonged exposure of this product could result in liver and kidney changes, including blood and central nervous system disorders. People with pre-existing liver and kidney disorders should avoid contact with this material.

SUBCHRONIC EFFECTS

Products represented by this MSDS have not been tested for subchronic toxicological effects.

CHRONIC EFFECTS/ CARCINOGENICITY

Products represented by this MSDS have not specifically been tested for chronic toxicological effects.

Additive

None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, OSHA, or ACGIH as a carcinogen.

Glycerol

People with pre-existing liver and kidney disorders should avoid contact with this material.

COMPONENTS LISTED AS CARCINOGENS

OSHA: None listed
IARC: None listed
NTP: None listed

MUTAGENICITY

Products represented by this MSDS have not specifically been tested for chronic toxicological effects.

Additive

The mixture does not produce genetic damage in animals, or in bacterial cultures, but it was positive in one study with cultured mammalian cells.

REPRODUCTIVE EFFECTS

Products represented by this MSDS have not specifically been tested for chronic toxicological effects.

Additive

Animal testing indicates that this mixture does not have developmental, or reproductive effects.

12. ECOLOGICAL INFORMATION

GENERAL INFORMATION

The product is a liquid with very low volatility.

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ECOTOXICOLOGICAL INFORMATION

Additive

96 hr LC50 (flathead minnows) 18-24 mg/L moderately toxic
48 hr LC50 (daphnia magna) 112-150 mg/L

Glycerol

Avoid entering waterways.

CHEMICAL FATE INFORMATION None available.

13. DISPOSAL CONSIDERATIONS

Dispose of in accordance with federal, state and local laws and regulations. Do not reuse wasted containers.

14. TRANSPORT INFORMATION

GROUND TRANSPORT Not classified

AIR TRANSPORT Not classified (IATA)

OCEAN TRANSPORT Not classified (IMCO)

IMDG Code: Not Applicable

IMDG Class: Not Applicable

RID/ADR: Not Applicable

**INCOMPATIBLE CHEMICALS FOR
TRANSPORT** Are incompatible in a placard load with any of the following:

- Class 1 Explosives
- Class 2.1 Flammable Gases, if both the Class 3 and Class 2.1 dangerous goods are in bulk
- Class 2.3 Toxic Gases
- Class 4.2 Spontaneously Combustible Gases
- Class 5.1 Oxidising Agents
- Class 5.1 Organic Peroxides
- Class 6 Toxic Substances
- Class 7 Radioactive Substances

15. REGULATORY INFORMATION

TAIWAN

Not classified as Dangerous Goods by the criteria of the Taiwan Dangerous Goods Code (ADG Code) for transport by Road & Rail.

Classified as a C1/C2 (COBUSTIBLE LIQUID) for the purpose of storage and handling, in accordance with the requirements of AS1940. Refer to state regulations for storage and transport requirements

EUROPE

EU Classification: Not dangerous

EIFCS/ELINCS Status: Complies

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16. OTHER INFORMATION

UN No:	None Assigned
Hazchem Code:	None Assigned
EEC Classification	None Assigned
Hazard Labels:	None Assigned
DG Class & Subsidiary Risk:	None Assigned
Packaging Group:	II
EPG Number:	None Assigned
Poison Schedule No:	S6
Risk Phrases:	R20/21 Harmful by inhalation and in contact with skin.
Safety Phrases:	S2 Keep out of reach of children. S24 Avoid contact with 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 soap and water. S36/37/38 Wear suitable protective clothing, gloves and eye/face protection. S38 In case of insufficient ventilation, wear suitable respiratory equipment. S44 If you feel unwell, contact a doctor or Poisons Information Center immediately (show label where possible).

This Material Safety Data Sheet (MSDS) summarises at the date of issue our best knowledge of the health and safety hazard information of the product, and in particular how to handle and use the product in the workplace. Since it cannot anticipate or control the conditions under which the product may be used, each user must, prior to usage, review this MSDS in the context of how the user intends to handle and use the product in the workplace.