

Safety Data Sheets

Section 1 - PRODUCT AND COMPANY IDENTIFICATION

Material Name

AS5 ink Light Black

Product Description

AS5-LK-60 / AS5-LK-2L

Product Use

INK JET ink

Restrictions on Use

None known

Manufacturer Information

Mimaki Engineering Co., Ltd

2182-3 Shigeno-otsu, Tomi-shi, Nagano 389-0512 Japan

Phone: +81-268-64-2413

Importer / Distributor Information

MIMAKI SINGAPORE PTE. LTD.

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+65 3165 2217 (within Singapore only)

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Section 2 - HAZARDS IDENTIFICATION

Classification of the substance or mixture**Classification**

Flammable Liquid	: Category 4
Serious Eye Damage	: Category 1
Carcinogenicity	: Category 2
Reproductive Toxicity	: Category 1B
Specific target organ toxicity - single exposure	: Category 2
Specific target organ toxicity - repeated exposure	: Category 2

GHS Label Elements**Symbol(s)****Signal Word**

Danger

Hazard Statement(s)

H318 Causes serious eye damage.

H351 Suspected of causing cancer.

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H360 May damage fertility or the unborn child.
H371 May cause damage to organs.
H373 May cause damage to organs through prolonged or repeated exposure.
H227 Combustible liquid.

Precautionary Statement(s)

Prevention

P201 Obtain special instructions before use.
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P270 Do not eat, drink or smoke when using this product.

Response

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 Immediately call a POISON CENTER/doctor/physician/first aider.
P370+P378 In case of fire: Use water spray/fog to extinguish.
P308+P311 IF exposed or concerned: Call a POISON CENTER/doctor/physician/first aider.

Storage

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

Disposal

P501 Dispose of contents/container in accordance with local regulations.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

CAS No	Name	%[weight]
Trade secret	Glycol ether solvents	75-85
Trade secret	Lactone solvent series	10-20
Trade secret	Vinyl resin	1-5
Trade secret	Pigment	0.1-1
Trade secret	Pigment B	0.1-1
Trade secret	Corrosion inhibitor	0.1-1

Section 4 - FIRST AID MEASURES

Description of first aid measures

Eye Contact : If this product comes in contact with the eyes:
Immediately hold eyelids apart and flush the eye continuously with running water.
Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.
Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes.
Transport to hospital or doctor without delay.
Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

Skin Contact : If skin or hair contact occurs:
Flush skin and hair with running water (and soap if available).
Seek medical attention in event of irritation.

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Inhalation	: If fumes, aerosols or combustion products are inhaled remove from contaminated area. Other measures are usually unnecessary.
Ingestion	: Immediately give a glass of water. First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.
Indication of any immediate medical attention and special treatment needed	: Treat symptomatically.

Section 5 - FIRE FIGHTING MEASURES

Extinguishing media	: Foam. Dry chemical powder. BCF (where regulations permit). Carbon dioxide. Water spray or fog - Large fires only.
Fire Incompatibility	: None known.
Fire Fighting	: Alert Fire Brigade and tell them location and nature of hazard. Wear full body protective clothing with breathing apparatus. Prevent, by any means available, spillage from entering drains or water course. Use water delivered as a fine spray to control fire and cool adjacent area. Avoid spraying water onto liquid pools. DO NOT approach containers suspected to be hot. Cool fire exposed containers with water spray from a protected location. If safe to do so, remove containers from path of fire.
Fire/Explosion Hazard	: Combustible. Slight fire hazard when exposed to heat or flame. Heating may cause expansion or decomposition leading to violent rupture of containers. On combustion, may emit irritating/ toxic fumes. May emit acrid smoke. Mists containing combustible materials may be explosive. May emit poisonous fumes. May emit corrosive fumes.

Section 6 - ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

See section 8.

Environmental precautions

See section 12.

Methods and material for containment and cleaning up

Minor Spills	: Remove all ignition sources. Clean up all spills immediately. Avoid breathing vapours and contact with skin and eyes. Control personal contact with the substance, by using protective equipment. Contain and absorb spill with sand, earth, inert material or vermiculite. Wipe up. Place in a suitable, labelled container for waste disposal.
Major Spills	: Moderate hazard.

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Clear area of personnel and move upwind.
Alert Fire Brigade and tell them location and nature of hazard.
Wear breathing apparatus plus protective gloves.
Prevent, by any means available, spillage from entering drains or water course.
No smoking, naked lights or ignition sources.
Increase ventilation.
Stop leak if safe to do so.
Contain spill with sand, earth or vermiculite.
Collect recoverable product into labelled containers for recycling.
Absorb remaining product with sand, earth or vermiculite.
Collect solid residues and seal in labelled drums for disposal.
Wash area and prevent runoff into drains.
If contamination of drains or waterways occurs, advise emergency services.

Personal Protective Equipment advice is contained in Section 8 of the SDS.

Section 7 - HANDLING AND STORAGE

Precautions for safe handling : Avoid all personal contact, including inhalation.
Wear protective clothing when risk of exposure occurs.
Use in a well-ventilated area.
Avoid smoking, naked lights or ignition sources.
Avoid contact with incompatible materials.
When handling, DO NOT eat, drink or smoke.
Keep containers securely sealed when not in use.
Avoid physical damage to containers.
Always wash hands with soap and water after handling.
Work clothes should be laundered separately.

Conditions for safe storage : Store in original containers.
Keep containers securely sealed.
No smoking, naked lights or ignition sources.
Store in a cool, dry, well-ventilated area.
Store away from incompatible materials and foodstuff containers.
Protect containers against physical damage and check regularly for leaks.
Observe manufacturer's storage and handling recommendations contained within this SDS.

Storage incompatibility : None known

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

OCCUPATIONAL EXPOSURE LIMITS (OEL)

INGREDIENT DATA

Ingredient	Material name	TWA	STEL	Peak	Notes
Pigment	Carbon black	3.5 mg/m ³	Not Available	Not Available	Not Available

Source: Singapore Permissible Exposure Limits of Toxic Substances

EMERGENCY LIMITS

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Ingredient	Material name	TEEL-1	TEEL-2	TEEL-3
Pigment	Carbon black	9 mg/m ³	99 mg/m ³	590 mg/m ³
Pigment B	Trade secret	12 mg/m ³	130 mg/m ³	790 mg/m ³
Vinyl resin	Trade secret	120 mg/m ³	1,300 mg/m ³	7,900 mg/m ³
Lactone solvent series	Trade secret	3.6 mg/m ³	39 mg/m ³	310 mg/m ³

Ingredient	Original IDLH	Revised IDLH
Pigment	N.E. mg/m ³ / N.E. ppm	1,750 mg/m ³
Pigment B	Not Available	Not Available
Vinyl resin	Not Available	Not Available
Glycol ether solvents	Not Available	Not Available
Lactone solvent series	Not Available	Not Available
Corrosion inhibitor	Not Available	Not Available

Exposure controls

Appropriate Engineering Controls : General exhaust is adequate under normal operating conditions. If risk of overexposure exists, wear SAA approved respirator. Correct fit is essential to obtain adequate protection. Provide adequate ventilation in warehouse or closed storage areas.

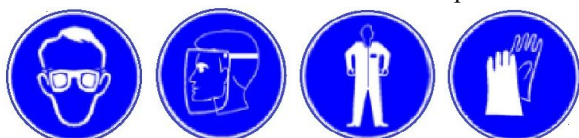
Personal protection

Respiratory Protection : Consult with a health and safety professional for specific respirators appropriate for your use.

Hand Protection : Wear chemical protective gloves, e.g. PVC.

Eye Protection : Safety glasses with side shields. Chemical goggles. Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants.

Skin Protection : Wear safety footwear or safety gumboots, e.g. Rubber. Overalls. P.V.C. apron.



Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance: Black liquid

Physical state	Liquid	Relative density (Water = 1)	0.974
Odour	Slight	Partition coefficient n-octanol / water	Not Available
Odour threshold	Not Available	Auto-ignition temperature (°C)	169
pH (as supplied)	Not Available	Decomposition temperature	Not Available
Melting point / freezing point (°C)	Not Available	Viscosity (cSt)	Not Available
Initial boiling point and boiling range (°C)	176-204	Molecular weight (g/mol)	Not Available
Flash point (°C)	64.7	Taste	Not Available
Evaporation rate	Not Available	Explosive properties	Not Available
Flammability	Combustible	Oxidising properties	Not Available
Upper Explosive Limit (%)	33	Surface Tension (dyn/cm or mN/m)	Not Available
Lower Explosive Limit (%)	2	Volatile Component (%vol)	Not Available



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Vapour pressure (kPa)	2.67	Gas group	Not Available
Solubility in water (g/L)	Immiscible	pH as a solution (1%)	Not Available
Vapour density (Air = 1)	Not Available	VOC g/L	Not Available

Section 10 - STABILITY AND REACTIVITY

Reactivity	: Stable under normal conditions of use.
Chemical Stability	: Unstable in the presence of incompatible materials. Product is considered stable.
Possibility of Hazardous Reactions	: Hazardous polymerisation will not occur.
Conditions to Avoid	: See section 7.
Incompatible Materials	: See section 7.
Hazardous decomposition products	: See section 5.

Section 11 - TOXICOLOGICAL INFORMATION

Information on toxicological effects

Inhaled	: The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting.
Ingestion	: The material has NOT been classified by EC Directives or other classification systems as 'harmful by ingestion'. This is because of the lack of corroborating animal or human evidence.
Skin Contact	: The liquid may be miscible with fats or oils and may degrease the skin, producing a skin reaction described as non-allergic contact dermatitis. The material is unlikely to produce an irritant dermatitis as described in EC Directives . Open cuts, abraded or irritated skin should not be exposed to this material. Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.
Eye	: If applied to the eyes, this material causes severe eye damage.
Chronic	: Ample evidence exists from experimentation that reduced human fertility is directly caused by exposure to the material. Ample evidence exists, from results in experimentation, that developmental disorders are directly caused by human exposure to the material.

	TOXICITY	IRRITATION
As a Product	Not Available	Not Available
Pigment	Not Available	Not Available
Pigment B	Not Available	Not Available
Vinyl resin	Not Available	Not Available
Glycol ether solvents	Not Available	Not Available
Lactone solvent series	Not Available	Not Available
Corrosion inhibitor	Not Available	Not Available

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Acute Toxicity	: Data Not Available to make classification.
Skin Irritation/Corrosion	: Data Not Available to make classification.
Serious Eye Damage/Irritation	: Data available to make classification.
Respiratory or Skin sensitisation	: Data Not Available to make classification.
Mutagenicity	: Data Not Available to make classification.
Carcinogenicity	: Data available to make classification.
Reproductivity	: Data available to make classification.
STOT – Single Exposure	: Data available to make classification.
STOT – Repeated Exposure	: Data available to make classification.
Aspiration Hazard	: Data Not Available to make classification.

Section 12 - ECOLOGICAL INFORMATION

Ecotoxicity

Ingredient	Endpoint	Test Duration (hr)	Species	Value	Source
Pigment	LC50	96	Fish	=1000mg/L	1
	EC50	24	Crustacea	>5600mg/L	1
	EC50	96	Fish	=1000mg/L	1
Glycol ether solvents	LC50	96	Fish	713.772mg/L	3
	EC50	96	Algae or other aquatic plants	4246.290mg/L	3
	EC50	384	Crustacea	163.553mg/L	3
Lactone solvent series	LC50	96	Fish	220mg/L	1
	EC50	48	Crustacea	>500mg/L	1
	EC50	96	Algae or other aquatic plants	16.400mg/L	3
	EC20	72	Algae or other aquatic plants	=14mg/L	1
	NOEC	24	Fish	=5mg/L	1
Corrosion inhibitor	LC50	96	Fish	1514.080mg/L	3
	EC50	48	Crustacea	374mg/L	2
	EC50	96	Algae or other aquatic plants	61.454mg/L	3
	EC50	504	Crustacea	59.8mg/L	2
	NOEC	504	Crustacea	3.99mg/L	2

Legend: Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances – Ecotoxicological Information - Aquatic Toxicity 3. EPIWIN Suite V3.12 (QSAR) - Aquatic Toxicity Data (Estimated)

DO NOT discharge into sewer or waterways.

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
Glycol ether solvents	LOW	LOW
Lactone solvent series	LOW	LOW
Corrosion inhibitor	LOW	LOW

Bioaccumulative potential

Ingredient	Bioaccumulation
Glycol ether solvents	LOW (LogKOW = 0.0093)



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Lactone solvent series	LOW (BCF = 1.8)
Corrosion inhibitor	LOW (LogKOW = -0.6047)

Mobility in soil

Ingredient	Mobility
Glycol ether solvents	LOW (KOC = 10)
Lactone solvent series	LOW (KOC = 7.134)
Corrosion inhibitor	HIGH (KOC = 1)

Section 13 - DISPOSAL CONSIDERATIONS

Disposal Methods : Dispose in accordance with all applicable regulations.
Disposal of Contaminated Packaging : Empty containers may contain product residue. Dispose in accordance with all applicable regulations.

Section 14 - TRANSPORT INFORMATION

Marine Pollutant : NO.
Land transport (UN) : NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS.
Air transport (ICAO-IATA / DGR) : NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS.
Sea transport (IMDG-Code / GGVSee) : NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS.
Transport in bulk according to Annex II of MARPOL and the IBC code : Not Applicable.

Section 15 - REGULATORY INFORMATION

Safety, health and environmental regulations / legislation specific for the substance or mixture FOUND ON THE FOLLOWING REGULATORY LISTS

PIGMENT	Singapore Permissible Exposure Limits of Toxic Substances.
PIGMENT (GREEN)	Not Applicable.
VINYL RESIN	Not Applicable.
GLYCOL ETHER SOLVENTS	Not Applicable.
LACTONE SOLVENT SERIES	Not Applicable.
CORROSION INHIBITOR	Not Applicable.

Inventory

National Inventory	Status
Australia - AICS	Y
Canada - DSL	N
Canada - NDSL	Y
China - IECSC	Y
Europe - EINEC / ELINCS / NLP	Y
Japan - ENCS	Y
Korea - KECI	Y
New Zealand - NZIoC	Y
Philippines - PICCS	N



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USA - TSCA	Y
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Legend: Y = All ingredients are on the inventory.

N = Not determined or one or more ingredients are not on the inventory and are not exempt from listing (see specific ingredients in brackets).

Section 16 - OTHER INFORMATION

Other Information

Disclaimer:

The information set forth in this Safety Data Sheet does not purport to be all-inclusive and should be used only as a guide. While the information and recommendations set forth herein are believed to be accurate, the company makes no warranty regarding such information and recommendations and disclaims all liability from reliance thereon.