

Safety Data Sheets

1. Identification

Product Name : Cleaning solution RS
Order No. : SPC-0336
General Use : Cleaning solution for ink jet printer
Product Description : Solvent liquid
SDS Number : 037-C014621
Manufacture
Company Name : Mimaki Engineering Co., Ltd.
Address : 2182-3 Shigeno-otsu, Tomi-shi, Nagano 389-0512 JAPAN
Telephone No. : +81-268-64-2413
Importer / Distributor Established in USA
Company Name : MIMAKI USA, INC.
Address : 150 Satellite Boulevard NE, suite A, Suwanee, Georgia 30024,
U.S.A.
Telephone No. : +1-678-730-0170
Emergency Telephone No. : +1 866 928 0789 (within United States only, Toll free)
+1 215 207 0061

2. Hazards Identification

[Classification of the substance or mixture]

Physical Hazards

Flammable Liquids : Category 4

Health Hazards

Acute Toxicity – Dermal : Category 4

Eye Damage / Irritation : Category 1

Specific Target Organ Toxicity : Category 1
(Single Exposure)

Specific Target Organ Toxicity : Category 2
(Repeated Exposure)

The above list does not include category being non-classifiable or not-applicable.

[Label Elements]

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Symbol



Signal Word

Danger

Hazard Statements

H227 Combustible liquid.

H312 Harmful in contact with skin.

H318 Causes serious eye damage.

H370 Causes damage to organs.

H373 May cause damage to organs through prolonged or repeated exposure.

Precautionary Statements

[Prevention]

P210 Keep away from heat/sparks/open flames/hot surfaces.-No smoking.

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

P264 Wash hands and eyes thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

[Response]

P302+P352 IF ON SKIN: Wash with plenty of soap and water.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P308+P311 IF exposed or concerned: Call a POISON CENTER/doctor.

(P305+) P310 (IF IN EYES) Immediately call a POISON CENTER or doctor/physician.

P312 Call a POISON CENTER or doctor/physician if you feel unwell.

P362+P364 Take off contaminated clothing and wash it before reuse.

P370+P378 In case of fire: Use water spray/fog for extinction.

[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/regional/national/international regulation (to be specified).

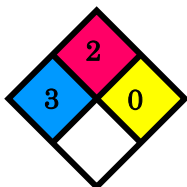
NFPA Rating (scale 0 – 4)

Health = 3

Flammability = 2

Instability = 0

Special =



3. Composition / Information on Ingredients

[Substances]

See section below for composition of Mixtures

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Mixtures

No	Chemical Name	Wt%	CAS No.
1	Ethylene glycol monobutyl ether acetate	90-100	112-07-2
2	Cyclohexanone	1-10	108-94-1

The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

4. First Aid Measures

[Description of first aid measures]

- Eye Contact** : If this product comes in contact with the eyes:
 Wash out immediately with water.
 If irritation continues, seek medical attention.
 Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.
- Skin Contact** If skin or hair contact occurs:
 Immediately flush body and clothes with large amounts of water, using safety shower if available.
 Quickly remove all contaminated clothing, including footwear.
 Wash skin and hair with running water. Continue flushing with water until advised to stop by the Poisons Information Centre.
 Transport to hospital, or doctor.
- Inhalation** : If fumes or combustion products are inhaled remove from contaminated area.
 Lay patient down. Keep warm and rested.
 Prosthesis such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.
 Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.
 Transport to hospital, or doctor, without delay.
- 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 Immediate Medical Attention and Special Treatment Needed** : Treat symptomatically.

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5. Fire Fighting Measures

[Extinguishing Media]

Extinguishing Media : Foam. Dry chemical powder. BCF (where regulations permit).
Carbon dioxide. Water spray or fog - Large fires only.

[Special hazards arising from the substrate or mixture]

Fire Incompatibility : None known.

[Advice for firefighters]

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.

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]

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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	: 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.

7. Handling and Storage

[Precautions for safe handling]

Safe handling	: Avoid all personal contact, including inhalation. Wear protective clothing when risk of exposure occurs. Use in a well-ventilated area. 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.
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Work clothes should be laundered separately. Launder contaminated clothing before re-use.

[Conditions for safe storage, including any incompatibilities]

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 : None known
 incompatibility

8. Exposure Controls / Personal Protection

[Control parameters]

OCCUPATIONAL EXPOSURE LIMITS (OEL)

INGREDIENT DATA

Ingredient	Source	TWA	STEL	Peak	Notes
Ethylene glycol monobutyl ether acetate	US ACGIH Threshold Limit Values (TLV)	20 ppm	Not Available	Not Available	TLV® Basis: Hemolysis
	US NIOSH Recommended Exposure Limits (RELs)	33 mg/m ³ / 5 ppm	Not Available	Not Available	Not Available
Cyclohexanone	US OSHA Permissible Exposure Levels (PELs) – Table Z1	200 mg/m ³ / 50 ppm	Not Available	Not Available	Not Available
	US ACGIH Threshold Limit Values (TLV)	20 ppm	50 ppm	Not Available	TLV® Basis: Eye & URT irr
	US NIOSH Recommended Exposure Limits (RELs)	100 mg/m ³ / 25 ppm	Not Available	Not Available	[skin]

EMERGENCY LIMITS

Ingredient	TEEL-1	TEEL-2	TEEL-3
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Ethylene glycol monobutyl ether acetate	15 ppm	35 ppm	210 ppm
Cyclohexanone	60 ppm	830 ppm	5,000 ppm

Ingredient	Original IDLH	Revised IDLH
Ethylene glycol monobutyl ether acetate	Not Available	Not Available
Cyclohexanone	5,000 ppm	700 ppm

Exposure Controls

Appropriate : General exhaust is adequate under normal operating conditions.

Engineering Controls Provide adequate ventilation in warehouse or closed storage areas.

Personal protection

Eye and face protection : Safety glasses with side shields.
 Chemical goggles.

Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants.

Hands/feet protection : Wear chemical protective gloves, e.g. PVC.

Wear safety footwear or safety gumboots, e.g. Rubber

Body protection : P.V.C. apron.

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

Thermal hazards : Not Available.



9. Physical and Chemical Properties

[Information on basic physical and chemical properties]

Appearance - Physical State : liquid

- Color : Clear liquid

Odor : Solvent odour

Odour threshold : Not Available

pH (as supplied) : Not Available

Melting point / freezing point (°C) : Not Available

Initial boiling point and boiling range (°C) : 191

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Flash point (°C)	: 74.3
Evaporation rate	: Not Available
Flammability	: Combustible
Upper Explosive Limit (%)	: 10.7
Lower Explosive Limit (%)	: 0.8
Vapour pressure (kPa)	: Not Available
Solubility in water (g/L)	: Immiscible
Vapour density (Air = 1)	: Not Available
Relative density (Water = 1)	: 0.938
Partition coefficient n-octanol / water	: Not Available
Auto-ignition temperature (°C)	: 340
Decomposition temperature	: Not Available
Viscosity (cSt)	: Not Available
Molecular weight (g/mol)	: Not Available
Taste	: Not Available
Explosive properties	: Not Available
Oxidising properties	: Not Available
Surface Tension (dyn/cm or mN/m)	: Not Available
Volatile Component (%vol)	: Not Available
Gas group	: Not Available
pH as a solution (1%)	: Not Available
VOC g/L	: Not Available

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	: See section 5
Decomposition	

11. Toxicological Information

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Acute Toxicity : Category 4, as a product- Dermal

	TOXICITY	IRRITATION
As a product	Not Available	Not Available
Ethylene glycol monobutyl ether acetate	Not Available	Not Available
Cyclohexanone	Not Available	Not Available

[Information on toxicological effects]

Inhaled : There is strong evidence to suggest that this material can cause, if inhaled once, very serious, irreversible damage of organs.
 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 : There is strong evidence to suggest that this material can cause, if swallowed once, very serious, irreversible damage of organs.
 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 : There is strong evidence to suggest that this material, on a single contact with skin, can cause very serious, irreversible damage of organs.
 The liquid may be able to be mixed 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 : Although the liquid is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may produce transient discomfort characterised by tearing or conjunctival redness (as with

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	windburn).
Chronic	: Substance accumulation, in the human body, is likely and may cause some concern following repeated or long-term occupational exposure.
Skin	: Data Not Available to make classification
Irritation/Corrosion	
Serious Eye	: Category 1, as a product
Damage/Irritation	
Respiratory or Skin sensitisation	: Data Not Available to make classification
Mutagenicity	: Data Not Available to make classification
Carcinogenicity	: Data Not Available to make classification
Reproductivity	: Data Not Available to make classification
STOT – Single	: Category 1, as a product
Exposure	
STOT – Repeated	: Category 2, as a product
Exposure	
Aspiration Hazard	: Data Not Available to make classification

12. Ecological Information

Handling is noted because it might influence the environment when leaking and abandoning it. Especially, note that the product doesn't flow directly to ground, the river, and the drain ditch.

Toxicity

Ingredient	Endpoint	Test Duration (hr)	Species	Value	SOURCE
As a product	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Ethylene glycol monobutyl ether acetate	LC50	96	Fish	41.186mg/L	3
	EC50	48	Crustacea	=37mg/L	1
	EC50	96	Algae or other aquatic plants	3.228mg/L	3
	EC0	48	Crustacea	=10mg/L	1
Cyclohexanone	LC50	96	Fish	71.940mg/L	3
	EC50	72	Algae or other aquatic plants	32.9mg/L	5
	EC10	72	Algae or other	3.56mg/L	4

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			aquatic plants		
	NOEC	24	Fish	ca.5mg/L	1

Legend: 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances – Ecotoxicological Information - Aquatic Toxicity 3. EPIWIN Suite V3.12 (QSAR) - Aquatic Toxicity Data (Estimated) 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data

Mobility : No information available for the product.
 Persistence and : No information available for the product.
 Degradability
 Bioaccumulative : No information available for the product.
 Potential
 Other Adverse Effects : No information available for the product.

13. Disposal Considerations

Disposal Methods : Comply with all USA, national and local regulations.
 Do not dump this product into sewers, on the ground or into any body of water.
 Disposal of : Empty containers may contain product residue. Dispose in
 Contaminated accordance with all applicable regulations.
 Packaging

14. Transport Information

Check a thing without a leak in a container.
 Perform prevention of collapse of cargo surely.
 Marine Pollutant : No
 Land transport (DOT) : NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS
 Air transport : NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS
 (ICAO-IATA / DGR)
 Sea transport : NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS
 (IMDG-Code / GGVSee)
 Transport in bulk : Not Applicable
 according to Annex II of
 MARPOL and the IBC
 code

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15. Regulatory Information

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

Chemical Name	Regulatory
ETHYLENE GLYCOL MONOBUTYL ETHER ACETATE(112-07-2)	US - California OEHHA/ARB - Acute Reference Exposure Levels and Target Organs (RELs) US - California OEHHA/ARB - Chronic Reference Exposure Levels and Target Organs (CRELs) US - Pennsylvania - Hazardous Substance List US ACGIH Threshold Limit Values (TLV) US ACGIH Threshold Limit Values (TLV) – arcinogens US Clean Air Act - Hazardous Air Pollutants US EPCRA Section 313 Chemical List US NIOSH Recommended Exposure Limits (RELs) US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory
CYCLOHEXANONE(108-94-1)	International Agency for Research on Cancer (IARC) – Agents Classified by the IARC Monographs US - Alaska Limits for Air Contaminants US - California Permissible Exposure Limits for Chemical Contaminants US - Hawaii Air Contaminant Limits US - Idaho - Limits for Air Contaminants US - Massachusetts - Right To Know Listed Chemicals US - Michigan Exposure Limits for Air Contaminants US - Minnesota Permissible Exposure Limits (PELs) US - Oregon Permissible Exposure Limits (Z-1) US - Pennsylvania - Hazardous Substance List US - Rhode Island Hazardous Substance List US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants US - Washington Permissible exposure limits of air contaminants

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	US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants US ACGIH Threshold Limit Values (TLV) US ACGIH Threshold Limit Values (TLV) - arcinogens US NIOSH Recommended Exposure Limits (RELs) US OSHA Permissible Exposure Levels (PELs) - Table Z1 US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory
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[Federal Regulations]

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SECTION 311/312 HAZARD CATEGORIES

- Immediate (acute) health hazard : Yes
- Delayed (chronic) health hazard : Yes
- Fire hazard : Yes
- Pressure hazard : No
- Reactivity hazard : No

US. EPA CERCLA HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES (40 CFR 302.4)

Name	Reportable Quantity in Pounds (lb)	Reportable Quantity in kg
Cyclohexanone	5000	2270

[State Regulations]

US. CALIFORNIA PROPOSITION 65

None Reported

[National Inventory]

- Australia - AICS : Y
- Canada - DSL : Y
- Canada - NDSL : Y
- China - IECSC : Y
- Europe - EINEC / ELINCS / NLP : Y
- Japan - ENCS : Y
- Korea - KECI : Y
- New Zealand - NZIoC : Y
- Philippines - PICCS : Y
- USA - TSCA : Y

Y = All ingredients are on the inventory

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16. Other Information

This information is furnished without warranty, express or implied, except that it is accurate to the best knowledge of Mimaki Engineering Corporation.

It relates only to the specific material designated herein, and does not relate to use in combination with any other material or process.

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