



# MURAKAMI CO.,LTD.

## SAFETY DATA SHEET

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Product Name : MS-Hardner

MSDS No. SDSE-105-5U

Revised : 25/February/2013

Printed : 20/November/2013

### 1. Identification of the substance/preparation and of the company/undertaking

Identification of the substance or preparation :

Trade Name ; MS-Hardner

SDS No. ; SDSE-105-5U

Including name : Murakami Screen U.S.A., Inc,

Address ; 745 Monterey Pass Road, Monterey Park, California U.S.A.

Phone number ; +1(323)980-0662

FAX number ; +1(323)980-0659

Recommended use of chemical and restrictions on use : Hardner of screen printing

### 2. Hazard identification

GHS classification :

Physical hazards ;

Explosives	Not applicable
Flammable gases	Not applicable
Flammable aerosols	Not applicable
Oxidizing gases	Not applicable
Gases under pressure	Not applicable
Flammable liquids	Not classified
Flammable solids	Not applicable
Self-reactive substances and mixtures	Not applicable
Pyrophoric liquids	Not classified
Pyrophoric solids	Not applicable
Self-heating substances and mixtures	Not classified
Substances and mixtures, which in contact with water, emit flammable gases	Not applicable
Oxidizing liquids	Not applicable
Oxidizing solids	Not applicable
Organic peroxides	Not applicable
Corrosive metals	Classification not possible

Health hazards ;

Acute toxicity (Oral)	Not classified
Acute toxicity (Dermal)	Not classified
Acute toxicity (Inhalation Gases)	Category 2
Acute toxicity (Inhalation Vapours)	Category 2
Acute toxicity (Inhalation Dusts and Mists)	Category 5
Skin corrosion/irritation	Category 2
Eye damage/eye irritation	Category 1
Respiratory sensitization	Category 1
Skin sensitization	Not classified
Germ cell mutagenicity	Classification not possible
Carcinogenicity	Not classified
Reproductive toxicity	Classification not possible

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Specific target organ toxicity (Single exposure)	Category 1 (Respiratory system)
Specific target organ toxicity (Repeated exposure)	Category 1 (Respiratory system, Teeth)
Aspiration hazard	Not applicable
<b>Environmental hazards ;</b>	
Hazardous to the aquatic environment (Acute toxicity)	Category 2
Hazardous to the aquatic environment (Chronic toxicity)	Not classified
Hazardous to the aquatic environment (Chronic toxicity)	Classification not possible

### Pictogram and Symbol :



Corrosion



Skull and crossbones



Health Hazard

**Signal Word :** Danger

### Hazard statement :

- H315 Causes skin irritation
- H318 Causes serious eye damage
- H330 Fatal if inhaled
- H333 May be harmful if inhaled
- H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled
- H370 Causes damage to organs (Respiratory system)
- H372 Causes damage to organs (Respiratory system, Teeth) through prolonged or repeated exposure
- H401 Toxic to aquatic life

### Precautionary statements :

- P260 Do not breathe dust/fume/gas/mist/vapours/spray.
- P264 Wash hands thoroughly after handling.
- P270 Do not eat, drink or smoke when using this product.
- P271 Use only outdoors or in a well-ventilated area.
- P273 Avoid release to the environment.
- P280 Wear protective gloves/protective clothing/eye protection/face protection.
- P284 [In case of inadequate ventilation] wear respiratory protection.

### Response ;

- P302+P352 IF ON SKIN: Wash with plenty of water/soap.
- P304+P312 IF INHALED: Call a POISON CENTER/doctor. if you feel unwell.
- P304+P340 IF INHALED: Remove person fresh air and keep comfortable for breathing.
- 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.
- P310 Immediately call a POISON CENTER/doctor .
- P314 Get medical advice/attention if you feel unwell.
- P332+P313 If skin irritation occurs: Get medical advice/attention.
- P342+P311 If experiencing respiratory symptoms: Call a POISON CENTER/doctor.
- P362+P364 Take off contaminated clothing and wash it before reuse.

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### Storage ;

P403+P233 Store in a well-ventilated place. Keep container tightly closed.

P405 Store locked up.

### Disposal ;

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

### 3. Composition/ information on ingredients

Substance or Mixture : Mixture

Ingredients and cocenttation ranges :

Chemical name		Water	Hydrochloric acid
wt%		> 97	< 3
CAS No.		7732-18-5	7647-01-0
Global Inventories	TSCA(USA)	inventory	inventory
	ENCS(Japan)	Not applicable	(1)-215
	EC No.(EU)	231-791-2	231-595-7
	IECSC(China)	Listed	Listed

### 4. First aid measures

#### After inhalation :

Remove to fresh air. Give artificial respiration if not breathing. If breathing is difficult, oxygen may be given by qualified personnel. Obtain medical attention.

#### After skin contact :

Immediately remove contaminated clothing and shoes. Wash skin with soap and water. Obtain medical attention. Remove contaminated clothing under a safety shower.

#### After eye contact :

Immediately flush eyes with water and continue flushing for at least 15 minutes. DO NOT remove contact lenses, if worn. Obtain medical attention without delay, preferably from an ophthalmologist.

#### After swallowing :

DO NOT INDUCE VOMITING. Give 2 to 3 glasses of water, then milk of magnesia or lime water to drink. Spontaneous laryngeal spasms can occur. Never give anything by mouth to someone who is unconscious or convulsing. Obtain medical attention without delay for all exposure.

### 4. First aid measures

#### Notes to physician :

Treatment for respiratory effects following inhalation of hydrogen chloride gas includes using a 5% sodium bicarbonate solution as an aerosol; maintaining a proper fluid balance (diuretics may be useful); and decreasing the inflammatory response of the lungs by administering steroids on a short-term basis (2 to 4 days).

Sever inhalation exposure requires hospitalization and observation (72 hours minimum) for the delayed onset of pulmonary edema, serial chest X-rays and respiratory support including incubation may be required as an early intervention.

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**5. Fire- fighting measures**

**Suitable extinguishing agents :**

Non-flammable. Use extinguishing agents that will put out the surrounding fire.

**Protective equipment :**

Wear a Self-contained Breathing Apparatus (SCBA) with a full face piece operated in the pressure-demand or positive-pressure mode.

**6. Accidental release measures**

**Personal- related safety precautions :**

Ventilate area after material pick up is complete.  
 Avoid contact with skin and eyes.  
 Avoid inhaling the fumes.

**Measures for environmental protection :**

Spills should be taken up with suitable adsorbent and place in containers or wash with water.  
 Wash water should be disposed off in accordance with applicable regulations (see heading 13).

**7. Handling and storage**

The regulation relating to storage premises apply to workshop where the product is handled.

**Handling :**

Do not get in eyes, on skin, on clothing.  
 Avoid breathing vapour.  
 Do not swallow.  
 Wear goggles, protective clothing and gloves.  
 Wash thoroughly with soap and water after handling.  
 Remove contaminated clothing and wash before reuse.

**Storage :**

Store in tightly closed, well ventilated and away from high temperature, sunlight.

**8. Exposure controls/ personal protection**

Ensure adequate ventilation, if possible with extractor fans at work posts and appropriate general extraction.

If this ventilation is insufficient to maintain the concentration of organic volatile fumes below the exposure limit, wear breathing apparatus.

**Exposure limit values :**

7647- 01- 0	Hydrogen chloride
ACGIH (2009) TLV- STEL	2 ppm (Ceiling)
OSHA REL	C 5ppm, 7mg/m <sup>3</sup>
NIOSH REL	C 5ppm, 7mg/m <sup>3</sup>
Japanese Society of Occupational Health (2009)	5 ppm 7.5 mg/m <sup>3</sup>

**Personal protective equipment :**

**Respiratory protection ;** Industrial canister gas masks.  
**Protection of hands ;** Rubber glove.  
**Eye protection ;** Avoid contact with eyes. Wear safety goggles.  
**Skin protection ;** Wear protective clothing to minimize the potential for skin contact.



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### 9. Physical and chemical properties

Appearance :	Clear liquid
Colour :	colorless
Odour :	odorless
pH :	Not available
Boiling Point :	about 110°C (azeotrope)
Freezing/ Melting Point :	about 0°C / water
Flash point :	Not available
Explosion properties :	Not available
Viscosity (25°C) :	Not available
Solubility in water :	soluble
Density :	about 1.0 g/cm <sup>3</sup>
Vapor density :	1.3 / hydrogen chlorid (Air = 1)
Partition coefficient n- octanol/ water :	log Pow = 0.25 (hydrogen chlorid)

### 10. Stability and reactivity

This product is considered a stable material under normal and anticipated storage and handling condition. Avoid high temperature and evaporation of water.

#### Incompatible Materials :

Acetic anhydride, 2-aminoethanol, ammonium hydroxide, calcium phosphide, chlorosulfonic acid, ethylene diamine, ethylenimine, oleum, perchlorate acid, B-propiolactone, propylene oxide, silver perchlorate and carbon tetrachloride, sodium hydroxide, sulphuric acid, uranium phosphide, vinyl acetate, sodium and many carbide compounds.

### 11. Toxicological information

#### Effects of Single Acute Overexposure :

##### Inhalation ;

Vapor is irritating to the respiratory tract, causing stinging sensations in the nose and throat, discharge from the nose, possibly bleeding from the nose, coughing, chest discomfort and tightness, difficulty with breathing and headache. Heating the solution may result in more severe irritant effects.

##### Eye Contact ;

Liquid will cause a severe and persistent conjunctivitis, seen as excess redness and marked swelling of the conjunctiva with profuse discharge. Severe corneal injury may develop, which could permanently impair vision if prompt first aid and medical treatment are not obtained. Vapor will cause stinging sensations in the eye with excess tear production, blinking, and possibly a slight excess redness of the conjunctiva.

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### Skin Contact ;

Brief contact will cause itching with mild to moderate local redness and possible swelling. Prolong contact may result in pain, sever redness and swelling, with ulceration, tissue destruction, and possibly bleeding into the inflamed area. Contact with solutions of aldehydes may cause a harmless yellow or brownish discoloration of the skin.

### Skin Absorption ;

Prolonged or widespread contact may result in the absorption of potentially harmful amounts of

### Ingestion ;

Moderately toxic. May cause moderate to marked irritation and possibly chemical burn of the mouth, throat, esophagus and stomach. There will be discomfort or pain in the chest and abdomen, nausea, vomiting, diarrhea, dizziness, faintness, drowsiness, thirst, weakness, circulatory shock, collapse and coma. Aspiration into the lungs may occur during ingestion or vomiting, resulting in lung injury

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### 12. Ecological information

No ecological data on the product itself is available.

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### 13. Disposal consideration

Waste disposal should be in accordance with existing federal, state and local environmental regulations.

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### 14. Transport information

#### Land transport ADR / RID :

Shipping Name ;	Not Applicable
Hazard Class ;	Not Applicable
UN Number ;	Not Applicable
Packing Group ;	Not Applicable

#### Maritime transport IMDG :

Shipping Name ;	Not Applicable
Hazard Class ;	Not Applicable
UN Number ;	Not Applicable
Packing Group ;	Not Applicable
Marine pollutant ;	Not Applicable

#### Air transport ICAO and IATA :

Shipping Name ;	Not Applicable
Hazard Class ;	Not Applicable
UN Number ;	Not Applicable
Packing Group ;	Not Applicable

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### 15. Regulatory information

The product must be used, stored, and transported in accordance with local / regional / national / international regulations.

#### Law of U.S.A. :

California Proposition 65 List (February 8, 2013) ; No listed.

State of Pennsylvania Right- to- Know (December 8, 2012) ; Listed.

Massachusetts Toxic and Hazardous Substance List (2011) ; Listed.

State of New Jersey Right- to- Know (August 2, 2010) ; Listed.

#### Law of Japan :

##### Industrial Safety and Health Law ;

Law Article 57-2 (Law Enforcement Ordinance Article 18-2)

Hazardous materials requiring notification No.98

##### Ordinance on Prevention of Hazards due to Specified Chemical Substances

Group-3 substances

##### Ship Safety Law ;

Regulations for the carriage and storage of dangerous goods in ship Corrosive substance

##### Seawater protection law ;

Law Enforcement Ordinance Appended Table 1 Harmful substances Group-Z substances

Civil Aeronautics Act ; Corrosive substance

#### None regulated Law of Japan :

Law concerning the Examination and Regulation of Manufacture, etc.

Fire Service Law

Poisonous and Deleterious Substances Control Law

Pollutant Release and Transfer Register Law

### 16. Other information

#### Handling of described contents :

Since the user's working conditions are not known by us, the information supplied on this safety data sheet is based on our current level of knowledge and on national and community regulations.

The product must not be used for any purposes other than those specified under heading 1 without first obtaining written handling instructions.

It is at all times the responsibility of the user to take all necessary measures to comply with legal requirements and local regulations.

The information given on this safety data sheet must be regarded as a description of the safety requirements relating to our product and not a guarantee of its properties.

Moreover, it is likely to be revised based on a revision of the law and a new finding.

This product developed for general industry. Please use it after confirming safety in your company when apply it for special usage.

#### Reference quotation document :

Raw material company submitting SDS

The Chemical Daily Co.,Ltd. "2011 version 15911 chemical products" (2011)

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