



# Safety Data Sheet

## 1. Product Identification

Trade name : AQUASOL HS-2  
 SDS Number ; S-101J-E1E  
 Manufacturer's name : MURAKAMI CO.,LTD.  
 Address ; 5-3-10 Yokokawa, Sumida-ku, Tokyo 130-0003, Japan  
 Phone number ; (+81)33624-8521  
 FAX number ; (+81)33624-8522

### Recommended use of chemical and restrictions on use :

Material for screen printing. Not intended for other applications

## 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	Classification not possible
Flammable solids	Not applicable
Self-reactive substances and mixtures	Classification not possible
Pyrophoric liquids	Classification not possible
Pyrophoric solids	Not applicable
Self-heating substances and mixtures	Classification not possible
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)	Classification not possible
Acute toxicity (Dermal)	Classification not possible
Acute toxicity (Inhalation : Gases)	Classification not possible
Acute toxicity (Inhalation : Vapours)	Classification not possible
Acute toxicity (Inhalation : Dusts and Mists)	Classification not possible
Skin corrosion/irritation	Classification not possible
Eye damage/eye irritation	Classification not possible
Respiratory sensitization	Classification not possible
Skin sensitization	Classification not possible
Germ cell mutagenicity	Classification not possible
Carcinogenicity	Classification not possible
Reproductive toxicity	Classification not possible
Specific target organ toxicity (Single exposure)	Not classified
Specific target organ toxicity (Repeated exposure)	Classification not possible

Classification not possible

#### Aspiration hazard

Classification not possible



# Safety Data Sheet

**Environmental hazards;**

**Hazardous to the aquatic environment (Acute toxicity)** Classification not possible

**Hazardous to the aquatic environment (Chronic toxicity)** Classification not possible

**Hazardous to the ozone layer** Classification not possible

**Pictogram and Symbol:**

No symbol

**3. Composition/information on ingredients**

**Substance or Mixture:** Mixture

**Ingredients and concentration ranges:**

Chemical name		Water	Water based emulsion	PVA-SBQ*
wt%		45≤ <55wt%	35≤ <45wt%	1≤ <10wt%
CAS No.		7732-18-5	Listed	Listed
Global Inventories	TSCA (USA)	Listed	Listed	Listed
	ENCS (Japan)	-	Listed	Listed
	EC No. (EU)	Listed	Listed	Listed
	IECSC (China)	Listed	Listed	Listed

※) PVA-SBQ = Poly vinyl alcohol with pendent styryl pyridinium group

**4. First aid measures**

**Inhalation:** Remove victim to fresh air and keep at rest in a position comfortable for breathing.  
Get medical advice / attention if you feel unwell.  
Get medical advice / attention if experiencing respiratory symptoms.  
Cover body with blanket to warm and keep at rest.  
Perform CPR if not breathing.

**Skin Contact:** Remove / Take off all contaminated clothing immediately.  
Wash with plenty of soap and water.  
Get immediate medical advice / attention, if skin irritation or rash occurs.

**Eye Contact:** Rinse cautiously with water for several minutes.  
Remove contact lenses, if present and easy to do. Continue rinsing.  
Rinse with clean water for at least 15 minutes and then seek medical attention if necessary.  
When rinsing, open your eyelids with fingers to insure saturation of water.

**Ingestion:** Seek medical attention if the problem persists.  
Rinse mouth. Do not induce vomiting.  
Get immediate medical advice / attention.  
Do not give an unconscious person anything to drink.  
If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.  
Do not induce vomiting.

**Protection for personnel administering first aid:**

Wear appropriate protective equipment if necessary.

**5. Firefighting measures**

**Extinguishing media:**

**Suitable extinguishing media;** Fire-extinguishing powder, fire-fighting foam, carbon dioxide, sand, water spray

**Unsuitable extinguishing media;** Straight stream water

**Specific hazards arising from the product:**

When exposed to high temperatures, this product may generate dangerous decompositions such as nitrogen oxides carbon monoxide, carbon dioxide, and sulfur dioxide.



## Safety Data Sheet

**Specific extinguishing measures :** Cut off the combustion source to the origin of fire and extinguish by using the appropriate fire extinguishing media.  
Firefighting measures should be done from windward as much as possible.  
Take appropriate measures to disallow substances that may affect the environment from being dispersed by the drainage.  
Remove all containers possible to a safe place promptly.  
If not possible to remove, cool down the area. Work from windward and use respiratory equipment if necessary.

**Special protective equipment and precautions :**

Cut off the combustion source to the origin of fire and extinguish by using extinguishing media.  
Combustion / Flue gases generate carbon monoxide and etc.  
To avoid the fire from spreading, cool surrounding area with water spray.  
Extinguish from windward and avoid inhaling any harmful gases. Use respiratory equipment if necessary.  
Extinguish from the windward where the gases do not accumulate and prevent the leakage from spreading .  
Wear appropriate protective wear (heat-proof) including air respirators.  
Wear respiratory equipment for harmful gases are produced from combustion or high temperature.

**6. Accidental release measures**

**Personal precautions, protective equipment and emergency procedures :**

Avoid breathing dust / fume / gas / mist / vapors /spray.  
Wear protective equipment (boots, gloves, and glasses) to prevent contact with skin.  
Remove ignition sources in the area and work from windward.  
Clean up immediately when it spills on the floor or any surface. (The floor surface becomes slippery).  
Prohibit entry other than related personnel.  
Ventilate released area.  
Do not touch and/or walk in the spills.  
The worker wears an appropriate protective equipment, and avoids eyes, the skin contacts, and inhalations. (refer to Item 8)  
Provide adequate ventilation if indoors.  
Cordon off the area and prevent entry of non-related personnel.  
Work from windward and remove personnel downwind of the area.  
Wear appropriate protective equipment to prevent contact with skin and inhaling fumes.  
Remove ignition sources in the area promptly.  
Prepare fire extinguishing equipment in case of ignition.

**Environmental precautions :**

Avoid releasing to the environment.  
Collect spillage.  
Do not empty into drain.  
If it is mixed with wastewater, drain it after the activated sludge process.  
Be careful not to influence living organisms and water quality in the environment by products released into rivers and any type of body of water.  
Contact local authorities if it is flowing into rivers or any type of body of water as necessary.  
Be careful not to influence the environment by products released into rivers or any type of body of water.  
If the pollution of water pipes or waterways occur, contact relevant organizations.  
Clean the area and avoid entry into plumbing system.  
Be careful not drain or release untreated waste water into the environment.



# Safety Data Sheet

## Methods and materials for recovery and neutralization:

- Contain the flow path with blankets or sand bags and collect into an appropriate container for large spills.
- Gather and collect into a container for small spills.
- Prevent the inflow into drains, sewer, basement, or enclosed areas.
- Clean spills frequently as there is danger of slipping on remnants.
- Remove all ignition sources.
- Smoking, open flame or ignition sources are not allowed in the area.
- Contain with consideration to safety.
- Collect into open container by absorbing with cloths, rags, sand or etc. and then rinse with plenty of water.
- Clean the spilled area with a cloth or a rag.
- Wear appropriate protective equipment throughout the process.

## 7. Handling and storage

### Handling :

- Relevant regulations shall be subject to where this product will be handled and stored.
- Work in accordance with the Occupational Safety and Health Act and related laws and regulations.
- Keep the concentration below the allowed limit.
- Avoid inhalation and contact.
- Wear protection if risk of exposure occurs.
- Use only in a well-ventilated area.
- Avoid smoking, open flames, heat and sources of ignition.
- Always cleanse with soap and water after handling.
- Determine proper procedures for compliance.
- Seal container after use.
- Avoid leakage, overflow, dispersal and generating steam without any good reason.
- Avoid improper handling like tipping over, dropping, strong impact to or dragging the container.
- Wash hands thoroughly and rinse mouth after handling.
- Do not eat, drink or smoke when using this product.
- Do not carry contaminated gloves and protective equipment into rest / break areas.
- Prohibit entry to work areas other than related personnel.
- Collect used containers in a defined / fixed area.
- Use containers that are not damaged, corroded or cracked.
- Use local exhaust ventilation systems indoors work areas.
- Wear proper protective equipment to avoid inhalation and contact with eyes and skin.

### Storage :

- Store in a well-ventilated area.
- Keep container tightly closed.
- Keep cool.
- Store in a dark light-safe area.
- Do not freeze.



# Safety Data Sheet

## 8. Exposure controls/personal protection

- Management density :** Not specified.
- Exposure limit values :** Not specified.
- Engineering measures:** In the case of indoor use, contain at the source or install a local exhaust system.  
Provide safety shower and eye / hand wash stations and identify the area clearly.  
Contain at the source and install a local exhaust system if dust is generated.
- Personal protective equipment :** Wear following protective equipment as necessary and accordingly.  
Inspect equipment on a regular basis by using a protective equipment maintenance chart.
- Respiratory protection ;** Supplied air respirator, air / oxygen breathing apparatus, organic vapor gas mask
- Eye protection ;** Wearing protective glasses is preferred.
- Hand protection ;** Wearing gloves that organic solvents or chemicals do not penetrate is preferred.
- Skin protection ;** Wearing protective clothing (long sleeve uniform) that organic solvent or the chemical do not infiltrate easily is preferred.

## 9. Physical and chemical properties

- Appearance (physical state, color, etc.):**
- Physical state ;** Aqueous solution
- Color ;** Red
- Odour :** Mild
- pH :** 4.0 - 6.0
- Melting point/freezing point :** Approx 0°C
- Initial boiling point and boilinr range :** Approx 100°C
- Relative density :** Approx 1mg/cm3
- Solubility :** dispersible, soluble

## 10. Stability and reactivity

- Reactivity :** Decomposes upon heating and produces carbon dioxide and carbon monoxide.
- Chemical stability :** Stable under normal conditions.
- Conditions to avoid :** Sunlight, heat, open flame, high temperature, sparks, static electricity, other sources of ignition.
- Incompatible materials :** Incompatible with acid, alkali, amines and is prohibited to mix with.
- Hazardous decomposition products :** Carbon monoxide (CO), carbon dioxide (CO2) gas might be generated by combustion.  
Vapor from organic solvents.



# Safety Data Sheet

## 11. Toxicological information

### Acute toxicity(Oral):

**Information on product;** No information available, Classification not possible based on the calculation.

**Information on ingredients;**

**Poly vinyl alcohol** Not classified. Oral, rat LD50>2,000mg/kg

### Acute toxicity (Transdermal):

**Information on product;** No information available, Classification not possible based on the calculation.

**Information on ingredients;**

**Poly vinyl alcohol** Not classified. Dermal, rat LD<sub>50</sub>>2,000mg/kg

### Acute toxicity(Inhalation):

**Information on product;** No information available, Classification not possible based on the calculation.

**Information on ingredients;** No information available.

### Skin corrosion/irritation:

**Information on product;** No information available, Classification not possible based on the calculation.

**Information on ingredients;**

**Poly vinyl alcohol** Corrosivity/stimulation to the skin is hardly recognized.

### Serious eye damage/irritation:

**Information on product;** No information available, Classification not possible based on the calculation.

**Information on ingredients;** No information available.

### Respiratory sensitization:

**Information on product;** No information available, Classification not possible based on the calculation.

**Information on ingredients;** No information available.

### Skin sensitization:

**Information on product;** No information available, Classification not possible based on the calculation.

**Information on ingredients;** No information available.

### Germ cell mutagenicity:

**Information on product;** No information available, Classification not possible based on the calculation.

**Information on ingredients;**

**Poly vinyl alcohol** Negative mutagenicity test using bacteria.

<To be continued>



# Safety Data Sheet

**Carcinogenicity :**

**Information on product ;** No information available, Classification not possible based on the calculation.

**Information on ingredients ;**

**Poly vinyl alcohol** Rat tests in the past show no carcinogenicity.

**Reproductive toxicity :**

**Information on product ;** No information available, Classification not possible based on the calculation.

**Information on ingredients ;** No information available.

**STOT-single exposure :**

**Information on product ;** No information available, Not classified based on the calculation.

**Information on ingredients ;** No information available.

**STOT-repeated exposure :**

**Information on product ;** No information available, Classification not possible based on the calculation.

**Information on ingredients ;** No information available.

**Aspiration hazard :**

**Information on product ;** No information available, Classification not possible based on the calculation.

**Information on ingredients ;** No information available.

**12. Ecological information**

**Ecotoxicity :**

**Information on product ;** No information available, Classification not possible based on the calculation.

**Information on ingredients ;** No information available.

**Persistence and degradability :**

**Information on product ;** No information available.

**Information on ingredients ;**

**Poly vinyl alcohol** Biodegradation is carried out by sludge containing pseudomonas.  
Classified as a "Substance determined to have very little or no bioaccumulation."

**Bioaccumulative potential :**

**Information on product ;** No information available.

**Information on ingredients ;** No information available.

**Mobility in soil :**

**Information on product ;** No information available.

**Information on ingredients ;** No information available.

**Other adverse effects :**

**13. Disposal considerations**

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



# Safety Data Sheet

## 14. Transport information

Avoid direct sunlight during transportation. Confirm the container has no damage, corrosion, leakage before transportation. Take measures to prevent the load from tipping, falling and damages.

Verify the container has no leaks when transporting and take preventative measure when loading so that the cargo does not tip, fall or get damaged during transit.

### UN classification:

UN number;	Not applicable.
UN proper shipping name;	Not applicable.
Transport hazard class(es);	Not applicable.
Packing group;	Not applicable.
Environmental hazards (Marine pollutant):	Not applicable.
Land transport ADR / RID:	Not applicable.
Maritime transport IMDG:	Not applicable.
Air transport ICAO and IATA:	Not applicable.

## 15. Regulatory information

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

## 16. Other information

### Handling of described contents:

The information contained herein is given in good faith and accurate to the best of our knowledge. No warranty is given, expressed, or implied.

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 is developed for general industry. Please use it after confirming safety in your company for special applications.

### Reference citations:

Raw material company submitting SDS

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