



**MURAKAMI**

# Safety Data Sheet

Trade name : AQUASOL TS

SDS Number : A-039C-E2U

Edited : JANUARY 3, 2017

Revised : FEBRUARY 28, 2017

Printed : FEBRUARY 28, 2017

## 1. Product Identification

Trade name : **AQUASOL TS**  
 SDS Number : A-039C-E2U  
 Manufacturer's name : Murakami Screen U.S.A., Inc,  
 Address : 745 Monterey Pass Road, Monterey Park, California, U.S.A.  
 Phone number : (323) 980-0662  
 Fax number : (323) 980-0659  
 Emergency phone num : Infotrac (800) 535-5053

**Recommended use of chemical and restrictions on use :** Material for screen printing. Not intended for other applications

## 2. Hazard identification

**GHS classification :**

**Physical hazards ;**

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

**Health hazards ;**

<b>Acute toxicity (Oral)</b>	Classification not possible
<b>Acute toxicity (Dermal)</b>	Classification not possible
<b>Acute toxicity (Inhalation : Gases)</b>	Classification not possible
<b>Acute toxicity (Inhalation : Vapours)</b>	Classification not possible
<b>Acute toxicity (Inhalation : Dusts and Mists)</b>	Classification not possible
<b>Skin corrosion/irritation</b>	Classification not possible
<b>Eye damage/eye irritation</b>	Classification not possible
<b>Respiratory sensitization</b>	Classification not possible
<b>Skin sensitization</b>	Classification not possible
<b>Germ cell mutagenicity</b>	Classification not possible
<b>Carcinogenicity</b>	Classification not possible
<b>Reproductive toxicity</b>	Classification not possible
<b>Specific target organ toxicity (Single exposure)</b>	Classification not possible

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<b>Specific target organ toxicity (Repeated exposure)</b>	Classification not possible
<b>Aspiration hazard</b>	Classification not possible
<b>Environmental hazards ;</b>	
<b>Hazardous to the aquatic environment (Acute toxicity)</b>	Classification not possible
<b>Hazardous to the aquatic environment (Chronic toxicity)</b>	Classification not possible
<b>Hazardous to the ozone layer</b>	Classification not possible
<b>Pictogram and Symbol :</b>	

No symbol

**3. Composition/information on ingredients**

Substance or Mixture : Mixture

Ingredients and concentration ranges :

<b>Chemical name</b>		Water	Acetic acid ethenyl ester, homopolymer (PVAc)	Acetic acid ethenyl ester, homopolymer, hydrolyzed, cyclic acetal with 4-[2-(4-formylphenyl)ethenyl]-1-methylpyridinium, Me sulfate (PVA-SBQ)	Vinyl acetate
<b>wt%</b>		50 ≤ <60wt%	35 ≤ <45wt%	1 ≤ <10wt%	<0.3 wt%
<b>CAS No.</b>		7732-18-5	9003-20-7	125229-74-5	108-05-4
<b>Global Inventories</b>	<b>TSCA (USA)</b>	Listed	Listed	Listed	Listed
	<b>ENCS (Japan)</b>	Listed	Listed	Listed	Listed

**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.  
Seek medical attention if the problem persists.

**Ingestion :** 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.

**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.

**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.

**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**

Relevant regulations shall be subject to where this product will be handled and stored.

**Handling :** 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.



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**Storage :** Store in a well-ventilated area.  
Protect from sunlight (Ultra Violet-light).  
Keep container tightly closed.  
Keep cool.  
Store in a dark light-safe area.  
Do not freeze.

### 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 ;** Blue

**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

**Volatile Organic Compounds:** less than 0.3%

### 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.

### 11. Toxicological information

**Acute toxicity(Oral) :**

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

**Information on ingredients ;**



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Poly vinyl alcohol	Not classified. Oral, rat LD <sub>50</sub> >5,000mg/kg
Vinyl acetate	Category 5. Oral, rat LD <sub>50</sub> =2,900 mg/kg
<b>Acute toxicity (Transdermal) :</b>	
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
Vinyl acetate	Category 5. Dermal, rbt LD <sub>50</sub> =2,335 mg/kg
<b>Acute toxicity(Inhalation) :</b>	
Information on product ;	No information available, Classification not possible based on the calculation.
Information on ingredients ;	No information available.
<b>Skin corrosion/irritation :</b>	
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.
Vinyl acetate	Category 3. May cause irritation or inflammation if left on skin.
<b>Serious eye damage/irritation :</b>	
Information on product ;	No information available, Classification not possible based on the calculation.
Information on ingredients ;	
Vinyl acetate	Category 2A. Causes serious damage.
<b>Respiratory sensitization :</b>	
Information on product ;	No information available, Classification not possible based on the calculation.
Information on ingredients ;	No information available.
<b>Skin sensitization :</b>	
Information on product ;	No information available, Classification not possible based on the calculation.
Information on ingredients ;	
Vinyl acetate	Category 1.
<b>Germ cell mutagenicity :</b>	
Information on product ;	No information available, Classification not possible based on the calculation.
Information on ingredients ;	
Poly vinyl alcohol	Negative mutagenicity test using bacteria.
Vinyl acetate	Category 2.
<b>Carcinogenicity :</b>	
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.
Vinyl acetate	Category 2. A3/ACGIH (2001), Group 2B/IARC (1995).
<b>Reproductive toxicity :</b>	
Information on product ;	No information available, Classification not possible based on the calculation.
Information on ingredients ;	No information available.
<b>STOT-single exposure :</b>	
Information on product ;	No information available, Classification not possible based on the calculation.
Information on ingredients ;	
Vinyl acetate	Category 3 (respiratory tract irritation).
<b>STOT-repeated exposure :</b>	



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<b>Information on product ;</b>	No information available, Classification not possible based on the calculation.
<b>Information on ingredients ;</b>	
<b>Vinyl acetate</b>	Category 2 (respiratory organs).
<b>Aspiration hazard :</b>	
<b>Information on product ;</b>	No information available, Classification not possible based on the calculation.
<b>Information on ingredients ;</b>	No information available.
<b>12. Ecological information</b>	
<b>Ecotoxicity :</b>	
<b>Information on product ;</b>	No information available, Classification not possible based on the calculation.
<b>Information on ingredients ;</b>	
<b>Vinyl acetate</b>	Category 2 .
<b>Persistence and degradability :</b>	
<b>Information on product ;</b>	No information available.
<b>Information on ingredients ;</b>	
<b>Poly vinyl alcohol</b>	Biodegradation is carried out by sludge containing pseudomonas. Classified as a "Substance determined to have very little or no bioaccumulation."
<b>Bioaccumulative potential :</b>	
<b>Information on product ;</b>	No information available.
<b>Information on ingredients ;</b>	No information available.
<b>Mobility in soil :</b>	
<b>Information on product ;</b>	No information available.
<b>Information on ingredients ;</b>	No information available.
<b>Other adverse effects :</b>	
<b>Information on product ;</b>	The product is not allowed to run into drain or waterways.
<b>Information on ingredients ;</b>	No information available.
<b>13. Disposal considerations</b>	
Dispose of contents / container in accordance with local / regional / national / international regulations.	
<b>14. Transport information</b>	
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.	
<b>UN classification :</b>	
<b>UN number ;</b>	Not applicable.
<b>UN proper shipping name ;</b>	Not applicable.
<b>Transport hazard class(es) ;</b>	Not applicable.
<b>Packing group ;</b>	Not applicable.
<b>Environmental hazards (Marine pollutant) :</b>	Not applicable.
<b>Land transport ADR / RID :</b>	Not applicable.
<b>Maritime transport IMDG :</b>	Not applicable.
<b>Air transport ICAO and IATA :</b>	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.

### 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.

#### Confidential information:

The manufacturer reserves the right to holding any confidential or proprietary information as non-disclosure items.

#### Reference citations:

Raw material company submitting SDS

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

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<End>