



Safety Data Sheet

1. Product Identification

Trade name : AQUASOL TS
 SDS Number ; A-038E-E2S
 Manufacturer's name : Murakami Screen (Singapore) Pte. Ltd.
 Address ; 35 Loyang Drive, Singapore
 Phone number ; (+65)6546-0355
 FAX number ; (+65)6546-0365

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	Not classified
Flammable solids	Not applicable
Self-reactive substances and mixtures	Not classified
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)	Classification not possible
Acute toxicity (Dermal)	Classification not possible
Acute toxicity (Inhalation : Gases)	Not applicable
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)	Classification not possible
Specific target organ toxicity (Repeated exposure)	Classification not possible

Classification not possible

Aspiration hazard

Classification not possible



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Environmental hazards;

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

Hazardous to the aquatic environment (Chronic toxicity) Category 3

Hazardous to the ozone layer Classification not possible

Pictogram and Symbol: No symbol

Signal Word: No word

Hazard statement : H412 Harmful to aquatic life with long lasting effects

Precautionary statements:

Prevention ; P273 Avoid release to the environment.

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 concentration ranges:

Chemical name		Water	Water based emulsion	PVA-SBQ	Vinyl acetate
wt%		50≤<60wt%	35≤<45wt%	1≤<10wt%	<0.3 wt%
CAS No.		7732-18-5	Listed	Listed	108-05-4
Global Inventories	TSCA (USA)	Listed	Listed	Listed	Listed
	ENCS (Japan)	-	Listed	Listed	Listed
	EC No. (EU)	Listed	Listed	Listed	Listed
	IECSC (China)	Listed	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.

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 : 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.
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.



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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 oxides.

Specific extinguishing measures : Cut off the combustion source to the origin of fire and extinguish by using the appropriate fire extinguishing media.

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 :

Wear appropriate protective wear (heat-proof) including air respirators.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures :

Avoid breathing mist / vapors.

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)

Prepare fire extinguishing equipment in case of ignition.

Environmental precautions :

Avoid releasing to the environment.

Collect spillage.

If the pollution of water pipes or waterways occur, contact relevant organizations.

Clean the area and avoid entry into plumbing system.

Methods and materials for recovery and neutralization:

Collect into open container by absorbing with cloths, rags, sand or etc. and then rinse with plenty of water.

Contain the flow path with blankets or sand bags and collect into an appropriate container for large spills.

Prevent the inflow into drains, sewer, basement, or enclosed areas.

Wear appropriate protective equipment throughout the process.

7. Handling and storage

Handling :

Seal container after use.

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.

Wear proper protective equipment to avoid inhalation and contact with eyes and skin.

Storage :

Keep container tightly closed.

Store in a dark light-safe area.

Do not freeze.



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8. Exposure controls/personal protection

- Management density:** Not specified.
- Exposure limit values :**
ACGIH(2010); TWA 10ppm STEL 15ppm / Vinyl acetate
- Engineering measures:** It is desirable to install a local exhaust system as necessary.
- 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;** Wearing organic vapor gas mask is preferred.
- 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
- Water 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.

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 LD₅₀>2,000mg/kg
- Acute toxicity(Inhalation):**
- Information on product;** No information available, Not applicable based on the calculation.
- Information on ingredients;**
Vinyl acetate Category 4. Inhalation, rat LC50=11.4 mg/L/4hr



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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 ;

Poly vinyl alcohol Irritation to the skin is hardly recognized.

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.

Carcinogenicity :

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

Information on ingredients ;

Vinyl acetate Category 2. A3/ACGIH (2001), Group 2B/IARC (1995).

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, Classification not possible based on the calculation.

Information on ingredients ;

Vinyl acetate Category 3(respiratory tract irritation).



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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

Acute aquatic toxicity:

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

Chronic aquatic toxicity:

Information on product; No information available, Category 3 based on the calculation.
Information on ingredients; Category 2 .
PVA-SBQ

Persistence and degradability:

Information on product; No information available.
Information on ingredients; Biodegradation is carried out by sludge containing pseudomonas.
Poly vinyl alcohol 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:

Information on product; The product is not allowed to run into drain or waterways.
Information on ingredients; No information available.

13. Disposal considerations

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

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.



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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:

Regulation (EC) No. 1272/2008

Raw material company submitting SDS

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