



基達科技股份有限公司  
GTA MATERIAL CO., LTD  
基達貿易有限公司  
GTA MARKETING CO., LTD

## Safety Data Sheet

### 1. Identification of the chemicals and of the business entity

<b>Chemicals Name:</b> LS-168P-2
<b>Other Names:</b> Laser grooving solution
<b>Recommended use and restrictions on use:</b> Use to semiconductor 、LED laser process protection, etc.
<b>Names, addresses, and phone numbers of manufacturer, importer or supplier:</b> GTA MATERIAL CO., LTD-GTA MARKETING CO., LTD 9F., NO.788, Zhongzheng Rd., Zhonghe Dist., New Taipei City 235, Taiwan
<b>Emergency contact phone numbers/fax numbers:</b> 02-3232-0086/02-3234-0017

### 2. Hazard(s) identification

**Chemicals hazard classification:** Acute toxicity, oral Category 5, Skin corrosion/irritation Category 3, Serious eye damage/eye irritation Category 2A, Reproductive toxicity Category 2

**Label content:**

**Hazard Pictogram:** 

**Signal words:** Warning

**Hazard statements:**

1. May be harmful if swallowed.
2. Causes mild skin irritation.
3. Causes serious eye irritation.
4. Suspected of damaging fertility or the unborn child.

**Precautionary statements:**

1. Call a poison center or doctor/physician if you feel unwell.
2. If skin irritation occurs: Get immediate medical advice.
3. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
4. Wash hands thoroughly after handling.
5. Wear protective eye protection/face protection.

**Other hazards:** -

### 3. Composition/information on ingredients

**Mixtures:**

Chemical properties:		
Chinese and English names of the hazardous ingredients	Chemical Abstract Service No. (CAS No.)	Concentration or concentration ranges (ingredient percentage)
Polyvinyl alcohol	9002-89-5	1~10
Polyvinylpyrrolidone	9003-39-8	1~5
Propylene glycol monomethyl ether	107-98-2	1~10
Methyl alcohol	67-56-1	0.1~1



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Purified water	7732-18-5	$\geq 80$
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#### 4. First-aid measures

**First aid measures for different exposure routes:**

- **inhalation:** Remove victim to fresh air and keep at rest in a position comfortable for breathing. If breathing unstable or stop: take CPR or first-aid measures.
- **skin contact:** Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention.
- **eye contact:** If in eyes: Rinse cautiously with water for 10~15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
- **ingestion:** Call a poison center or doctor/physician if you feel unwell. Do NOT induce vomiting. Keep stable. Get medical advice.

**Most important symptoms and hazardous effects:** Will inhibit the nervous system, headache, nausea, and even loss of consciousness.

**Protection for first-aid providers:** Should wear C-class protective equipment in the safe area to implement first aid.

**Notes to physicians:** There is no specific antidote. The treatment of exposure, should directly control the patient's symptoms and clinical status. When patients are swallowed, consider gastric lavage and laxative.

#### 5. Firefighting measures

**Suitable fire extinguishing media:** Foam, CO<sub>2</sub>, dry chemical powder extinguisher, water.

**Specific hazards regarding firefighting measures:**

This product contains propylene glycol methyl ether

1. When sprayed, water should be effective for cooling and protection of the fire fighters.
2. Fire and/or tempering may occur.
3. During a fire, the smoke contains, in addition to the original substance, combustion products of various ingredients that may be toxic and irritating.
4. Combustion products may include but are not limited to: carbon monoxide, carbon dioxide. Prolonged exposure to air may form peroxides.

**Specific methods regarding firefighting measure: -**

**Special protective equipment and precautions for firefighters:** Fire fighters should wear self-contained breathing apparatus.

#### 6. Accidental release measures

**Personal precautions:**

1. Wear respiratory protection.
2. Wear protective clothing shoes.
3. Wear chemical protective clothing.

**Environmental precautions:**

1. Air extractor and partial ventilator. Be careful that the product is not present at a concentration level above TLV and LEL.
2. Avoid release to the environment.

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### Methods for cleaning up:

1. Spill: Wash with clean water. When spill may cause slip. Please use with care.
2. Waste treated device: Dumping to the government-approved waste handling equipment, such as sewage treatment sewer.

### 7. Handling and storage

#### Handling:

1. Wear proper protective tools, such as mask, gloves and eye protection.
2. Store in a well-ventilated place.
3. Read and understand all safety precautions before disposal.

#### Storage:

1. Keep container tightly close, and voice overflow (spill).
2. Store in a well-ventilated place, keep dry.
3. Storage temperature:  $25 \pm 10^{\circ}\text{C}$ .
4. Transportation temperature:  $10 \sim 50^{\circ}\text{C}$ .

### 8. Exposure controls/personal protection

**Engineering control:** 1. The overall ventilation device. 2. Local exhaust device.

#### Control parameters:

- **8-hour time weighted average exposure limits/Short-term exposure limits/Maximum exposure limits:**

Propylene Glycol Methyl Ether: TWA: 100 ppm, STEL: 125 ppm, CEILING: -

- **Biological standards:** -

#### Personal protective equipment:

- **Respiratory protection:**

1. Respiratory protective devices should be worn when it is possible to exceed the exposure limit requirements or specifications.
2. If there are no applicable exposure limits or values, wear respiratory protection when there are adverse reactions such as respiratory irritation or discomfort, or if risk assessment proves to be hazardous.
3. Respiratory protection is not required in most cases; however, when the substance is heated or sprayed, wear certified air-filter respirators.
4. The following list should be valid types of air-purifying respirator: organic vapor purifiers.

- **Hand protection:** Impervious gloves, preferably butyl rubber.

- **Eye protection:** Use chemical safety goggles.

- **Skin and body protection:** Protective clothing and protective shoes.

**Hygiene measures:** After use, clean hands thoroughly.

### 9. Physical and chemical properties

Appearance (physical state, color, etc.): Clear to Pale yellow liquid	Odor: Special solvent odor
Odor threshold: -	Melting point: -
pH value: $7.5 \pm 1$	Boiling point/boiling point range: This product forms a film on the air contact

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	surface at temperatures >90°C, so the boiling point cannot be measured.
Flammability (solid, gas): -	Flash point: >84°C
Decomposition temperature: ca. 200°C	The igniter was extinguished at 84°C and no flash fire below 84°C. Test method: closed cup (ASTM D92)
Auto-ignition temperature: -	Explosion limits: -
Vapor pressure: -	Vapor density: -
Density: 1.015±0.010	Solubility: Water soluble
Partition coefficient (n-octanol/water, logKow): -	Evaporation rate: -

### 10. Stability and reactivity

**Stability:** It is stable under normal conditions.

**Possible hazardous reactions under specific conditions:** Oxidizers. It is easy to increase the risk of fire and explosion.

**Conditions to avoid:** Keep away from fire and avoid overheating.

**Materials to avoid:** Oxidizers, reducing agents, strong acids, strong bases.

**Hazardous decomposition products:**

1. During a fire, the smoke contains, in addition to the original substance, combustion products of various ingredients that may be toxic and irritating.
2. Combustion products may include but are not limited to: carbon monoxide, carbon dioxide.

### 11. Toxicological information

**There is no corresponding toxicity information.**

**Only data for Propylene glycol monomethyl ether:**

**Routes of exposure:** Skin, inhalation, ingestion, eyes.

**Symptoms:** Irritation, headache, nausea, dizziness.

**Acute toxicity:**

- **Skin contact:** 1. Do not irritation. 2. Immediately absorb by skin.
- **Inhalation:** >100 ppm, Irritation eyes, nose. throat.  
>1000 ppm, Inhibition of the nervous system, symptoms of headache, nausea, dizziness, sleepiness, physical coordination, loss of function, and even loss of consciousness.
- **Ingestion:** 1. Low toxicity. 2. Symptom is similar to inhalation.
- **Eye Contact:** Irritation >100 ppm, Lachrymosity > 250 ppm.
- **Oral LD50 (mouse):** 6600 mg/kg
- **Inhalation LC50 (mouse):** 15000 ppm/4 hours
- **Skin(concentration of 5000 ppm)/ open test (rabbit):** slight irritation

**Chronic toxicity or long-term toxicity:** 3000 ppm/6H

### 12. Ecological information

**There is no corresponding toxicity information.**

**Only data for Propylene glycol monomethyl ether:**

**Ecotoxicity:**

LC50 (Fish): >2000 mg/L/ 96H,  
EC50 (Aquatic Invertebrates):- ,  
Department of Health (BCF): -

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### Persistence and degradability:

1. One experiment showed that 88% to 92% of propylene glycol methyl ether was decomposed within 4 weeks using sludge inoculation.
2. When released into water, biodegradation may be expected.
3. When released into the air, it may react with hydrogen radicals generated by photosynthesis.

Half-life (air): -

Half-life (water surface): -

Half-life (groundwater): -

Half-life (soil):-

### Bioaccumulative potential:

It is unlikely to accumulate and is expected to be expelled by exhalation. A small amount is excreted by urine.

**Mobility in soil:** When released into the soil, biodegradation may be expected.

**Other adverse effects:** -

*Only data for Methyl alcohol (component ratio 0.1 to 1%):*

### Ecotoxicity:

LC50 (Fish): 11~15 mg/L/ 96H,

EC50 (Aquatic Invertebrates):- ,

Department of Health (BCF): 0.2~10

### Persistence and degradability:

1. When released into water, it may biodegrade and volatilize.
2. When released into the atmosphere, it may interact with hydroxyl radicals produced by photochemical reactions and have a half-life of about 17.8 days.

Half-life (air): 427 h

Half-life (water surface): 5.3~64 h

Half-life (groundwater): -

Half-life (soil):-

**Bioaccumulative potential:** -

**Mobility in soil:** When released into the soil, it may biodegrade, penetrate into the ground, and volatilize.

**Other adverse effects:** -

*Only data for 2-Methyl-4-isothiazolin-3-one (component ratio <0.5%)*

### Ecotoxicity:

1. Acute toxicity of fish

Substances are extremely toxic to aquatic organisms (for most experimentally sensitive species, 50% lethal concentration (LC50)/resulting in a 50% maximal response, the effective concentration of the substance (EC50) is < 0.1 mg/L).

2. Acute toxicity of aquatic invertebrates

LC50 Daphnia magna (large scale cockroach) 48 h 0.93-1.9 mg/L

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3. Acute toxicity to algae  
EC50 Selenastrum capricornutum 72 h growth rate 0.158 mg/L OECD Test Guideline 201
4. Chronic toxicity of aquatic invertebrates:  
There is no appreciable effective concentration of large fleas 21 d 0.04 mg/L

### Persistence and degradability:

1. Biodegradability  
Biodegradation (water metabolism): CAS # 2682-20-4 t 1/2 aerobic = 9.1 h is not easily biodegradable. 10-day test: failed
2. Biodegradation: 0.32%
3. Exposure time: 28 days
4. Method: OECD Test Guideline 301B or equivalent
5. Physical-chemical removability  
Activated sludge respiratory depression EC50: 41 mg/L active ingredient

### Bioaccumulative potential: -

**Mobility in soil:** No relevant data found.

### Other adverse effects:

1. Evaluation of PBT and vPvB results: The substance was not assessed as persistent, bioaccumulative, and toxic (PBT).
2. Harmful to the ozone layer: The substance is not in the list of Annex I ODS substances in EU Regulation 2037/2000.

## 13. Disposal considerations

### Methods of waste disposal:

1. poured into government approved waste disposal facilities, such as sewage treatment sewer.
2. The Government licensed incineration site incineration.
3. The Government licensed health and safety landfill.
4. The process in accordance with current regulations.

## 14. Transport information

United Nations number (UN No): -

UN Proper shipping name: -

Transport hazard class(es): -

Packing group: -

Marine pollutant (Yes/No): -

Specific transport measures and precautionary conditions: -

## 15. Regulatory information

### Applicable regulations:

1. Occupational Safety and sanitation rules
2. Labour permissible workplace exposure standard
3. Toxic chemicals labeling and safety data sheet management approach
4. Toxic Chemical Substances Control Act
5. The labeling of hazardous chemicals and Liberal rule
6. Occupational Safety and Health Act
7. Clear the cause of waste storage and treatment equipment standards

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### 16. Other information

Literature references	Occupational Safety and Health Act, Global Harmonized System, Raw material SDS provided by supplier	
Organization that prepared the SDS	Name: GTA MATERIAL Co., LTD	
	Address/telephone number: Address/telephone number : 9F., No.788, Zhongzheng Rd., Zhonghe Dist., New Taipei City 235, Taiwan/02-32340086	
Person who prepared the SDS	Title: RD Engineer	Name : Amanda Tseng
Date that the SDS was prepared	2018/09/27	

The information provided by the government regulations and the manufacturer or the supplier, or translated from the original, We has made the right information on the above, but the error is still inevitable, The data and information for reference only, the user please according to the application needs, to be responsible for judging its availability, We not bear any responsibility.