



深圳市容大感光科技股份有限公司


SHENZHEN RONGDA PHOTOSENSITIVE SCIENCE & TECHNOLOGY CO., LTD

地址：深圳市宝安区福永街道福永立新湖第一科技园研发楼第1-3楼 传真：0755-27313853

SHENZHEN RONGDA PHOTOSENSITIVE SCIENCE & TECHNOLOGY CO., LTD

Material Safety Data Sheet

Section 1 - Chemicals and corporate identity

Items Chinese name: 液态感光阻焊油墨	
Item Name: Liquid photosensitive solder resist ink	
Item Number: H-8100 black Part A: basis Part B: Curing agents	
Name of the manufacturer or supplier: SHENZHEN RONGDA PHOTOSENSITIVE SCIENCE & TECHNOLOGY CO., LTD	
	
Address of the manufacturer or supplier: FLOOR 1-3 R&D BUILDING, FIRST SCIENCE PARK, FUYONG LAKE LIXIN, FUYONG STREET, BAO'AN DISTRICT, SHENZHEN CITY	
Zip Code: 518000	The manufacturer or supplier of e-mail: rdyw@szrd.com
Phone manufacturers or suppliers: 0755-27312035	Emergency telephone: 0755-27312035
FAX: 0755-27313853	Effective Date: January 24, 2018

Section 2 - Hazards Identification

Major hazard	Health Effects: Acute: Inhalation: Irritate the nose and throat, bring headache and nausea. Skin: Eye: Stimulate eyes, cause eyes flare. Ingestion: Little stimulate to stomach.
	Environment effects: Avoid throw at will.
	Physical and chemical hazards: Avoid contact with fire.
	Endanger: Don't close to kindling.
	Special endanger: None
Presenting symptom: headache, nausea.	
Hazard grade: 3	

Section 3 - Composition, Information on Ingredients

Chemical Name: Liquid photosensitive solder resist ink			
Synonyms:			
CAS.NO : NA			
Hazards ingredient (Percent):			
Admixture:			
Chemical substances:			
Name of hazardous ingredient	Concentration or concentration range (percent)	CAS NO	EINECS NO
Part A : ortho-phenolic aldehyde epoxy acrylic resin	20~60	—	—
DBE (solvent)	10~30	106-65-0	203-419-9
Irgacure 907	0.5~10	71868-10-5	400-600-6



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Quantacure ITX	0.2~5	5495-84-1	226-827-9
sym-Tetramethylbenzene	2~10	95-93-2	202-465-7
BaSO ₄	8~35	7727-43-7	231-784-4
Silica dioxide	0.5~2	7631-86-9	231-545-4
Carbon Black	0.1-2	1333-86-4	215-609-9
Part B DPHA	5~40	60506-81-2	262-270-8
Epoxy resin	10~40	61788-97-4	—
DBE(solvent)	5~20	106-65-0	203-419-9
BaSO ₄	8~25	7727-43-7	231-784-4

Section 4 - First Aid Measures

Distinct way to first aid

Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

Skin: In case of contact, immediately flush skin with plenty of water while removing contaminated clothing and shoes. Get medical aid immediately.

Eyes: In case of contact, immediately flush eyes with plenty of water. Get medical aid immediately.

Ingestion: If swallowed, do not induce vomiting. Get medical aid immediately. If victim is fully conscious, give a cupful of water. Never give anything by mouth to an unconscious person.

Main symptom and hazard: stimulability

Protection for first-aiders: Gird gloves, avoid contact contamination.

Skin: Washing with soap.

Notes for Physician:

Section 5 - Fire Fighting Measures

Extinguishing Media: Use carbon dioxide, dry chemical, or sand.

Special harm when putting out the fire:

Special way for putting out the fire: Use water fog to cool the container in fire.

Special protection equipment for firemen: Wearing appropriate protective clothing.

Section 6 - Spill contingency processing

Attention: Before deal with the spill or leak, remove all sources of ignition.

Environment: Provide ventilation.

Clean-up method: Absorb spill with paper towel, or place in suitable container then burning in safe room.

Section 7 - Handling and Storage

Disposition:

Tread lightly with the container of Liquid photosensitive solder resist ink. Avoid to impact violent, or it will lead to the container cracking ;please operate in condition include :dust free room ,10-25℃ and 50-75%RH; yellow light; don't operate under white light or sunlight. Keep away from kindling.

Storage:

Keep in dust free room ,10-25℃,50-75%RH,avoid direct sunlight, keep away from workshop and sources of ignition, and make sure it covered when not in use.



Section 8 - Exposure controls and personal protection

Engineering control: Keep ventilation, and best to use closed-system to coating.

Controls parameter

TWA: 100ppm/STEL: 125ppm (皮) /CEILING: ——

Personal Protective Equipment:

Respirator: Wear respirator.

Hands: Wear anti-penetrate gloves.

Eyes: Wear chemical splash goggles and face shield.

Skin and body protection: Wear appropriate protective clothing to prevent skin and body exposure.

Sanitation measure: 1.Non-smoking or drinking
2.Washing hands after contact it.
3.Maintain good management to routine daily tasks.

Section 9 - Physicochemical characteristics

Character: Liquid	Appearance: Black viscous liquid
Color: Black	Odor : Weak odor.
PH:--	Boiling point/boiling point range DBE(solvent): 200 °C Naphtha--
Decomposition Temperature:--	Flash point:-- Test method: ○Open cup test ⊙Closed-cup test
Self-ignite temperature	Explore limit:--
Vapor Pressure: DBE(solvent): 0.3 mmHg (20 °C)	Vapor Density: --
Density(water=1) 1.35	Solubility: water-fast.

Section 10 - Stability and reactivity Page

Stability: Stable in normal condition.

Harmful reaction under special instance: None

Conditions to avoid: Keep away from workshop, heating, flame and spark.

Avoidance: Long-playing heating.

Hazardous Decomposition Products: Carbon monoxide, carbon dioxide.

Section 11 - Toxicological Information

Acute toxicity:--

Local effects: pruritus

Sensitive:

Chronic toxicity: None

Special effect: None



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Section 12 - Ecological Information

Possible environmental impact/spread: None

Section 13 - Disposal Considerations

Disposal Considerations: Burn in suitable incinerator.

Section 14 - Transport Information

International transport regulation:

UN NO:

Domestic shipment regulation:

Special transport method and attention:

Section 15 - Regulatory Information

Applicable laws and regulations: ©By the holders of its own waste that, dispose it in accordance with the "Waste Disposal Act" on the cause of hazardous waste regulations.

Section 16 - Additional Information

Reference	The information above"--"means have no relative reference.	
Tabulation unit	Company Name: SHENZHEN RONGDA PHOTSENSITIVE SCIENCE & TECHNOLOGY CO., LTD	
	Address of the manufacturer or supplier: FLOOR 1-3 R&D BUILDING ,FIRST SCIENCE PARK,FUYONG LAKE LIXIN,FUYONGSTREET,BAO'AN DISTRICT,SHENZHEN CITY	
Tel	0755-27312035	
Lister	Position: Manager	Name: Yang Yu Chun
Table date	January 24, 2014	

The information above from section 2 to section 9 were provided by SHENZHEN RONGDA PHOTSENSITIVE SCIENCE & TECHNOLOGY CO., LTD. We do the best to get accurate information, but the information above is limited and just for reference, the user must take charge to think over whether the product is suitable to use, the provider (SHENZHEN RONGDA PHOTSENSITIVE SCIENCE & TECHNOLOGY CO., LTD) won't take any obligation.

Amended in January. 24, 2018.



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Item Name: Liquid photosensitive solder resist ink	
Item Number: H-8100 white Part A: basis Part B: Curing agents Part C: Additive	
Name of the manufacturer or supplier: SHENZHEN RONGDA PHOTOSENSITIVE SCIENCE & TECHNOLOGY CO., LTD	
	
Address of the manufacturer or supplier: FLOOR 1-3 R&D BUILDING ,FIRST SCIENCE PARK,FUYONG LAKE LIXIN,FUYONG STREET,BAO'AN DISTRICT,SHENZHEN CITY	
Zip Code: 518000	The manufacturer or supplier of e-mail: rdyw@szrd.com
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FAX: 0755-27313853	Effective Date: January 4, 2019

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	Environment effects: Avoid to throw at will.
	Physical and chemical hazards: Avoid to contact with fire.
	Endanger: Don't close to kindling.
	Special endanger :None
Presenting symptom: headache, nausea.	
Hazard grade: 3	

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Synonyms:			
CAS.NO :NA			
Hazards ingredient(Percent):			
Admixture:			
Chemical substances:			
Name of hazardous ingredient	Concentration or concentration range(percent)	CAS NO	EINECS NO
Part A :ortho-phenolic aldehyde epoxy acrylic resin	20~60	24969-06-0	500-033-5
DBE(solvent)	10~30	106-65-0	203-419-9
Irgacure 907	0.5~10	71868-10-5	400-600-6
Quantacure ITX	0.2~5	5495-84-1	226-827-9



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sym-Tetramethylbenzene	2~10	95-93-2	202-465-7
BaSO ₄	8~35	7727-43-7	231-784-4
Silica dioxide	0.5~2	7631-86-9	231-545-4
TiO ₂	20-40	13463-67-7	236-675-5
Part B DPHA	5~40	60506-81-2	262-270-8
Epoxy resin	20~40	38891-59-7	—
DBE(solvent)	5~20	106-65-0	203-419-9
BaSO ₄	8~25	7727-43-7	231-784-4
Part C Carbitol Acetate	0.5~5	112-15-2	203-940-1

Section 4 - First Aid Measures

Distinct way to first aid

Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

Skin: In case of contact, immediately flush skin with plenty of water while removing contaminated clothing and shoes. Get medical aid immediately.

Eyes: In case of contact, immediately flush eyes with plenty of water. Get medical aid immediately.

Ingestion: If swallowed, do not induce vomiting. Get medical aid immediately. If victim is fully conscious, give a cupful of water. Never give anything by mouth to an unconscious person.

Main symptom and hazard: stimulability

Protect for first-aider: Gird gloves, avoid contacting contamination.

Skin: Washing with soap.

Notes for Physician:

Section 5 - Fire Fighting Measures

Extinguishing Media: Use carbon dioxide, dry chemical, or sand.

Special harm when putting out the fire:

Special way for putting out the fire: Use water fog to cool the container in fire.

Special protection equipment for firemen: Wearing appropriate protective clothing.

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Attention: Before deal with the spill or leak, remove all sources of ignition.

Environment: Provide ventilation.

Clean-up method: Absorb spill with paper towel, or place in suitable container then burning in safe room.

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Disposition:

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Storage:

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Engineering control: Keep ventilation, and best to use closed-system to coating.

Controls parameter

TWA: 100ppm/STEL: 125ppm (皮) /CEILING: ——

Personal Protective Equipment:

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Hands: Wear anti-penetrate gloves.

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Sanitation measure: 1.Non-smoking or drinking
2.Washing hands after contact it.
3.Maintain good management to routine daily tasks.

Section 9 - Physicochemical characteristics

Character: Liquid	Appearance: white viscous liquid
Color: white	Odor: Weak odor.
PH:--	Boiling point/boiling point range DBE(solvent): 200 °C Naphtha--
Decomposition Temperature:--	Flash point:-- Test method: ○Open cup test ⊙Closed-cup test
Self-ignite temperature	Explore limit:--
Vapor Pressure: DBE(solvent): 0.3 mmHg (20 °C)	Vapor Density: --
Density(water=1) 1.35	Solubility: water-fast.

Section 10 - Stability and reactivity Page

Stability: Stable in normal condition.

Harmful reaction under special instance: None

Conditions to avoid: Keep away from workshop, heating, flame and spark.

Avoidance: Long-playing heating.

Hazardous Decomposition Products: Carbon monoxide, carbon dioxide.

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Acute toxicity:--

Local effects: pruritus

Sensitive:

Chronic toxicity: None

Special effect: None



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Lister	Position: Manager	Name: Yang Yu Chun
Table date	January 4, 2019	

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Amended in January 24, 2019.



TDS for Liquid photosensitive solder resist ink

H-8100

1. FEATURES

H-8100 is three components dilute aqueous alkali developing liquid photosensitive solder resist ink. Mainly features as below:

- 1) Provided with fairly perfect printing behavior; capable of compactly covering the surface of the printed object;
- 2) Provided with excellent hardness, wear resistance, compactness, machine ability, chemical resistance, and heat resistance etc.;
- 3) Provided with excellent electrical performance;
- 4) It is known as a type of environmental-friendly product, was passed the related Tests.

2. SPECIFICATION

Color*	White
Mixing ratio	Main agent : Hardener :C additive= 750 : 250 :20 (By weight)
Viscosity	160 ±20dPa·s (VT-04 Mode Viscometer, 5min ⁻¹ / 25℃)
Tack free window*	75±2℃\50 min (Maximum)
Exposure energy*	600 ~ 800 mJ/cm ² (sensitive feet is 10) (on the solder mask)
Pot life*	24 hours (stored in dark place at less than 25℃)
Shelf life*	6 months (stored in dark place at than 25℃)

* : After mixing

3. PROCESS CONDITION

PROCESS		RANGE
PWB	FR – 4 , 1.6 mm	—
Pre-treatment	Acid treatment → brushing	—
Printing	43T mesh-count	—
Hold time	10 min	10 ~ 20 min

Tack free	➤ One side each exposure 1 st printing : 75°C / 20 min (Hot air circulation oven) 2nd printing : 75°C / 30 min (Hot air circulation oven) ➤ Both sides simultaneous exposure 75°C / 35 min (Hot air circulation oven)	75°C / 15~25 min 75°C / 20~30 min 75°C / 30~45 min
Exposure	700 mJ/cm ² (on the solder mask)	600~800 mJ/cm ²
Hold time	10 min	10~20 min
Development	Aqueous alkaline solution : 1 wt% Na ₂ CO ₃ Temperature of developer : 30°C Spray pressure : 0.196 MPa Developing time : 60 sec	0.2~0.25 MPa 50~70 sec
Post cure	No hole plugging 150°C / 60 min (Hot air convection oven)	—

4. CHARACTERISTIC

Item	Test method	Test result
Adhesion	IPC-SM-840C 3.5.2.1/IPC-TM-650 2.4.28.1 Cross-cut tape stripping test	100 / 100
Pencil hardness	IPC-SM-840C 3.5.1/ IPC-TM-650 2.4.27.2 On copper foil, no Cu exposure	6H
Solder heat resistance	Solder float test : Rosin flux, 280°C/10 sec×3 cycle	Pass
Solvent resistance	PMA dipping, room temp./ 30 min Scotch tape stripping	Pass
Acid resistance	10 vol % H ₂ SO ₄ , room temp./ 30 min Scotch tape stripping	Pass
Alkaline resistance	10 wt% NaOH, room temp./ 30 min Scotch tape stripping	Pass

Note : The above-mentioned test data is just for reference, not to guarantee the result.

5. PRECAUTIONS

- 1) The product should be stored or handled at a place with temperature of 10-25°C and relative humidity of 50-75%RH; in addition, only yellow light is allowed; do not handle the product in White electric light or sunlight (whether directly or indirectly).
- 2) The product should be applied in its original state; when it is necessary to adjust the viscosity, it is



required to adopt diluent, and the proportion must be controlled within 3%. Please do the experiment of matching first while adopting other diluent.

- 3) Once the product is mixed, it should be used up within 24 hours. When opening the can, hand mix it for 1-2 min at first before machine stirring.
- 4) Surface treatment of bared board has a critical impact on full play of solder resist behaviors.

Before printing operation, in order to ensure that the PCB surfaces are thoroughly cleaned, dried, and the oxide layer is removed, it is advisable to treat the PCB with chemical microetch and mechanical polish-brush separately or simultaneously so as to absolutely remove the oxide, oil, fat or other pollutant on surfaces of bared boards; wash the boards with water and the dry them adequately; avoid finger touch and carry out solder-resist printing operation as soon as possible for fear of poor adhesive power of printing ink, or degradation of solder-resist performance. Pretreatment for golden board may be soft polish-brush (polish-brush #1000 at least), citric-acid immersion or spraying. Pay special attention to the attendance of pretreatment equipment after water washing phase so that the secondary pollution of board surface can be avoided.

- 5) Exposure energy may vary as per different bared boards and thickness of printing ink. Please carry out test to determine the lateral erosion grade, surface gloss and reverse-side light-sensation grade. Photometer should be set to level 9-12.
- 6) Adequately manage the developing solution concentration, temperature, nozzle pressure and time etc. Inadequate management may lead to poor developing performance of printing ink, lateral erosion or blister. In addition, Spray nozzle of developing machine should be regularly smoothed so as to ensure proper developing /rinsing effect in operation.
- 7) Developing should be within 48 hours after coating. If workshop to be warm and humid and relatively heavy, take to finish the operation within 12hours.
- 8) In case skin or eyes are exposed to the product, it is required to clean with soap and rinse with plenty of fresh water; do not clean with any solvent.
- 9) The product is inflammable, and it must not be placed or applied in a site with smoke and fire.