



brewer science

2401 Brewer Drive
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CERTIFICATE OF ANALYSIS

Product: WaferBOND® Remover
Lot Number: B1038.508
Date of QC: 7-Feb-11
PO Number: 2007492
SO Number: 14002179

Customer: AERIUS PHOTONICS, LLC
Part Number: B81670
Revision Number:

Status: PASSED

PARAMETER	METHOD	SPECIFICATION	OBSERVATION
Aluminum	ICP-MS	≤50ppb	<5ppb
Calcium	ICP-MS	≤50ppb	<5ppb
Copper	ICP-MS	≤50ppb	<5ppb
Iron	ICP-MS	≤50ppb	<5ppb
Potassium	ICP-MS	≤50ppb	<5ppb
Sodium	ICP-MS	≤50ppb	<5ppb
Particles@.3µm	Laser Liquid Particle Counter	≤50/ml ≥0.3µm	0.2/ml
Filtration (µm)	Membrane Size	0.2µm	0.2µm
Manufacturing Date			7-Feb-11
Shelf Life at 21±5°C		365 Days	6-Feb-12

Signature: 
Darin Collins
QC Supervisor

**BREWER SCIENCE INC.
SAFETY DATA SHEET**

This Safety Data Sheet has been prepared to comply with the EC Directive, Canadian WHMIS and the OSHA Hazard Communication Standard.

**SECTION 1: IDENTIFICATION OF THE SUBSTANCE/PREPARATION
AND THE COMPANY/UNDERTAKING**

Product Identifier

Trade Name WaferBOND® Remover

Relevant Identified Uses of the Substance or Mixture and Uses Advised Against

Product Use: Demount Dissolution Fluid

Details of the Supplier of the Safety Data Sheet

Manufacturer: Brewer Science, Inc.
2401 Brewer Drive
Rolla, MO 65401

Information Phone Number: (573) 364-0300

Fax Number (573) 368-3318

E-mail msds@brewerscience.com

Emergency Telephone Number

Emergency Spill Information Chemtrec Domestic North America: (800) 424-9300
Chemtrec International: (703) 527-3887

SDS Date of Preparation: 1/31/06

SECTION 2: HAZARDS IDENTIFICATION

Classification of the Substance or Mixture

GHS Classification:

Aspiration Toxicity Category 1

Skin Irritation Category 2

Flammable Liquid Category 4

EU Classification:

Xn R38, R65, R66, R67

Label Elements

Danger!



Contains: 1-Dodecene

Hazard Phrases

H227	Combustible liquid.
H315	Causes skin irritation.
H304	May be fatal if swallowed and enters airways.

Precautionary Phrases

P210	Keep away from heat/sparks/open flames/hot surfaces. – No smoking.
P264	Wash thoroughly after handling.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P301 +	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.

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P310	
P331	Do NOT induce vomiting.
P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P362	Take off contaminated clothing and wash before reuse.
P332 + P313	If skin irritation occurs: Get medical advice/ attention.
P370 + P378	In case of fire: Use water fog, foam, carbon dioxide or dry chemical for extinction.
P403 + P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.
P501	Dispose of contents/container in accordance with local and national regulations.

Other Hazards: EUH066 Repeated exposure may cause skin dryness or cracking.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Mixtures

Chemical Name	CAS# /	EINECS#	EU Classification (67/548/EEC)	GHS Classification	%
1-Dodecene	112-41-4	203-968-4	Xn R38, R65, R66	Asp. Tox 1 (H304), Skin Irrit. 2,(H315), , Flam Liq. 4 (H227), EH066	>95%

See Section 16 for further information on GHS and EU Classifications.

SECTION 4: FIRST AID MEASURES

Description of First Aid Measures

Eye: Rinse thoroughly with water for at least 15 minutes, holding the eye lids open to be sure the material is washed out. Get immediate medical attention.

Skin: Remove contaminated clothing. Wash contact area thoroughly with soap and water. Get medical attention if irritation or symptoms of exposure develop. Launder clothing before re-use.

Inhalation: Remove victim to fresh air. Give artificial respiration if needed. If breathing is difficult, oxygen should be administered by qualified personnel. Get immediate medical attention.

Ingestion: Aspiration hazard: do not induce vomiting. Keep the victim calm and warm. Get immediate medical attention

Most Important symptoms and effects, both acute and delayed: Causes skin irritation. Vapors may cause dizziness, drowsiness and other central nervous systems effects. May cause aspiration during swallowing or vomiting.

Indication of any immediate medical attention and special treatment needed: None known

SECTION 5: FIRE FIGHTING MEASURES

Extinguishing Media: Use water fog, foam, carbon dioxide or dry chemical.

Special Hazards Arising from the Substance or Mixture

Unusual Fire and Explosion Hazards: Vapors are heavier than air and may travel along surfaces to remote ignition sources and flash back. Vapors may form explosive mixtures with air in confined areas.

Hazardous Decomposition Products: Oxides of carbon.

Special Protective Actions for Fire-Fighters:

Special Fire Fighting Procedures: Wear an approved, positive pressure, self-contained breathing apparatus and full protective

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clothing. Cool fire exposed containers with water.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures:

Remove all ignition sources such as open flames, spark producing equipment, pilot lights, etc. Wear appropriate protective clothing to prevent eye and skin contact including impervious gloves, safety goggles and respirator if needed. Ventilate area.

Environmental Precautions:

Report spills and releases as required to appropriate authorities.

Methods and Material for Containment and Cleaning Up:

Cover with an inert absorbent material and collect into an appropriate container for disposal

Reference to Other Sections: None

SECTION 7: HANDLING AND STORAGE

Precautions for Safe Handling: Avoid breathing vapors, aerosols and mists. Use with adequate ventilation. Avoid contact with the eyes, skin and clothing. Always wear impervious gloves, chemical safety goggles and protective clothing when handling this material. Wash thoroughly after handling. Do not eat, drink or smoke in the work area. Keep product away from heat, sparks, flames and all other sources of ignition. No smoking in storage or use areas. Keep containers closed when not in use.

Conditions for Safe Storage, Including any Incompatibilities: Store in a cool, dry, well-ventilated location away from incompatible materials. Keep containers closed when not in use.

Specific end use(s): Industrial use only

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters:

Chemical Name	Exposure Limits
1-Dodecene	None Established

Exposure Controls:

Ventilation: Use with adequate general or local exhaust ventilation to maintain exposure levels below the occupational exposure limits. Use explosion proof electrical equipment and wiring where required.

Respiratory Protection: If needed, an approved respirator with organic vapor cartridges may be used. For higher exposures, a supplied air respirator may be required. Respirator selection and use should be based on contaminant type, form and concentration. Follow applicable regulations and good Industrial Hygiene practice.

Skin Protection: Impervious gloves are recommended. Suggested materials for protective gloves include: Nitrile Rubber, or Viton.

Eye Protection: Chemical safety goggles recommended.

Other Protective Equipment: Impervious clothing as needed to prevent skin contact and contamination of personal clothing. An eye wash facility and safety shower should be available in the work area.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on basic Physical and Chemical Properties

Appearance Clear, colorless liquid	Vapor Density: 5.81
Odor: Mild, pleasant odor.	Specific Gravity: 0.76 @ 15.6°C (60°F)
Odor Threshold: No data available	Water Solubility: Insoluble
pH: Not available	Octanol/Water Partition Coefficient: Not available
Melting Point/Freezing Point: -35°C (-31°F)	Autoignition Temperature: 225°C (437°F)
Boiling Point: 213°C	Decomposition Temperature
Flash Point: 77.2°C (171°F)	Viscosity: 0.67 cST @ 100°C
Evaporation Rate: Not available	Explosion Properties: Not available
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Flammable Limits: LEL: 0.6 vol % UEL: 5.4 vol %	Oxidizing Properties Not available
Vapor Pressure: 1 mm Hg @ 50°C	

SECTION 10: STABILITY AND REACTIVITY

Reactivity: Not reactive

Chemical Stability: Stable

Possibility of Hazardous Reactions: Will not occur.

Conditions to Avoid: Keep away from heat, sparks, flames and other sources of ignition.

Incompatible Materials: Strong oxidizing agents.

Hazardous Decomposition Products: Combustion will produce oxides of carbon.

SECTION 11: TOXICOLOGICAL INFORMATION

Information on Toxicological Effects:

Potential Health Effects:

Eye: May cause slight to moderate irritation with redness and blurred vision. Corneal injury is unlikely.

Skin: Cause skin irritation with redness, irritation and dryness. Prolonged or repeated exposure may cause defatting and dermatitis.

Inhalation: Inhalation of vapors, mists or aerosols may cause central nervous system depression with symptoms of headache, dizziness, nausea, drowsiness and unconsciousness may also occur.

Ingestion: Swallowing may cause central nervous system depression with headache, nausea, dizziness and unconsciousness; gastrointestinal irritation with nausea, vomiting and diarrhea and injury to the lungs and brain.

Chronic Hazards: No chronic effects are anticipated.

Medical Conditions Aggravated by Exposure: Pre-existing skin diseases.

Acute Toxicity Values:

1-Dodecene: Oral rat LD50 >10,000 mg/kg; Dermal rabbit LD50 >10,000 mg/kg; Inhalation rat LC50 >4,400 mg/m³/6 hours

Irritation: No test data is available. This product is not expected to cause eye irritation. This product is irritating to skin.

Corrosivity: This product is not a corrosive material.

Sensitization: This product was found to be negative in a skin sensitization test with guinea pigs.

Repeat Dose Toxicity: No test data is available.

Carcinogen Status: None of the components of this product are listed as carcinogens by OSHA, IARC, NTP, ACGIH, or the EU Dangerous Substances Directive.

Mutagenicity: In vitro chromosome aberration in rats liver cells were negative. Mitotic gene conversion assay was negative.

Toxicity for Reproduction: No test data is available. This product is not expected to cause reproductive toxicity.

SECTION 12: ECOLOGICAL INFORMATION

Toxicity

No ecotoxicity data is available. This product is not expected to be harmful to aquatic organisms based a data from a similar material.

Persistence and Degradability: This product is expected to readily biodegradable.

Bioaccumulative Potential: No data available

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Mobility in Soil: No data available

Results of PBT and vPvB Assessment: No data available

Other Adverse Effects: Not applicable

SECTION 13: DISPOSAL INFORMATION

Waste Treatment Methods

Dispose in accordance with all local, state and federal regulations.

SECTION 14: TRANSPORT INFORMATION

	UN Number	UN Proper Shipping Name	Hazard Class(s)	Packing Group	Environmental Hazards
US DOT	NA1993	Combustible Liquid, n.o.s. (1-Dodecene) *	Combustible Liquid	Not applicable	Not applicable
IATA/ICAO		Not Regulated			Not applicable

*Excepted from HazMat in Non-Bulk Packaging

Special Precautions for User: Not applicable

Transport in Bulk According to Annex II of MARPOL 73/78 and the IBC Code: Not Regulated

SECTION 15: REGULATORY INFORMATION

Safety, Health and Environment Regulations/Legislation Specific for the Substance or Mixture:

U.S. FEDERAL REGULATIONS:

CERCLA 103 Reportable Quantity: This product is not subject to reporting under CERCLA. Some states have more stringent reporting requirements. Report all spills in accordance with local, state, and federal regulations.

SARA TITLE III:

Hazard Category for Section 311/312: Acute Health, Fire Hazard

Section 313 Toxic Chemicals: This product contains the following chemicals subject to SARA Title III Section 313 Reporting requirements: None

Section 302 Extremely Hazardous Substances (TPQ): None

EPA Toxic Substances Control Act (TSCA) Status: All of the components of this product are listed in the TSCA inventory.

STATE REGULATIONS:

California Proposition 65: These products contain the following substances known to the State of California to cause cancer and/or reproductive toxicity: None known

INTERNATIONAL REGULATIONS:

Canadian Environmental Protection Act: All of the components of this product are listed on the Canadian Domestic Substances List (DSL).

European Inventory of Commercial Chemical Substances: All of the components of this product are listed on the EINECS inventory.

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Chemical Safety Assessment: No data available

SECTION 16: OTHER INFORMATION

HMIS Ratings: Health - 1 Flammability - 2 Reactivity - 0
NFPA Ratings: Health - 1 Flammability - 2 Reactivity - 0

SDS Revision History:

1/31/06: New SDS
12/18/08: Updated format for REACH. Removing references to NIOSH. Changed wording for respiratory protection, carcinogen status, CERCLA, and California Proposition 65. Changed MSDS to SDS.
3/25/09: Updated Skin Protection statement in Section 8.
5/28/10 Revised Proper Shipping Name
9/14/10: Complete review of SDS. Converted SDS to a Universal GHS SDS.

GHS Phrases for Reference (See Section 2 and 3):

Asp. Tox 1 Aspiration Hazard Category 1
Skin Irrit. 2 Skin Irritation Category 2
Flam Liq 4 Flammable Liquid Category 4
H227 Combustible liquid.
H304 May be fatal if swallowed and enters airways.
H315 Causes skin irritation.
EUH066 Repeated exposure may cause skin dryness or cracking.

EU Classes and Risk Phrases for Reference (See Sections 2 and 3):

Xn Harmful
R38 Irritating to skin
R65 Harmful: may cause lung damage if swallowed
R66 Repeated exposure may cause skin dryness or cracking

This above information is believed to be correct but does not propose to be all inclusive and shall be used only as a guide. Brewer Science, Inc. shall not be held liable for any damage resulting from handling or from contact with the above product.

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