

**BREWER SCIENCE INC.
SAFETY DATA SHEET**

This Safety Data Sheet has been prepared to conform to the Regulations for the Labeling and Hazard Communication of Hazardous Chemicals in Taiwan, EU Regulation, Canadian WHMIS and the OSHA Hazard Communication Standard.

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

1.1 Product Identifier:

Trade Name: WaferBOND® Remover

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

Product Use: Demount Dissolution Fluid
Uses Advised Against: None

1.3 Details of the Supplier of the Safety Data Sheet:

Manufacturer: Brewer Science, Inc. 2401 Brewer Drive Rolla, MO 65401	Sales Office: Brewer Science, Limited North Mill, 2nd Floor Darley Abbey Mills Derby, England DE22 1DZ +44 1332 545888 +44 1332.545878 sds@brewerscience.com	Sales Office: Brewer Science GmbH Thomas-Wimmer-Ring 17 Munich, Germany 80539 +44 1332 545888 +44 1332 545878 sds@brewerscience.com
Information Phone Number: (573) 364-0300		
Fax Number: (573) 368-3318		
E-mail: sds@brewerscience.com		

1.4 Emergency Telephone Number:

Emergency Spill Information: Chemtrec Domestic North America: (800) 424-9300
Chemtrec International: (703) 527-3887
Chemtrec Taiwan: 00801-14-8954
China Chemical Accident Emergency Rescue Hotline 0532-83889090
CHEMTREC UK (London): +(44)-870-8200418

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the Substance or Mixture:

OSHA/WHMIS Classification:

Flammable Liquid Category 4 (H227)
Aspiration Toxicity Category 1 (H304)
Skin Irritation Category 2 (H315)

CLP Classification:

Aspiration Toxicity Category 1 (H304)
EUH066

GHS Classification:

Flammable Liquid Category 4 (H227)
Aspiration Toxicity Category 1 (H304)
Skin Irritation Category 2 (H315)

2.2 Label Elements:

Danger!



Contains: 1-Dodecene

Prepared By:	Safety & Environmental Units
Approved By:	Safety & Environmental Units
Issue/Revision Date:	F.7.6.2576.L / 8/25/20
Date of latest review:	8/25/20

Hazard Phrases

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

Precautionary Phrases

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P264	Wash thoroughly after handling.
P280	Wear protective gloves, protective clothing, and eye protection.
P302 + P352	IF ON SKIN: Wash with plenty of water.
P332 + P313	If skin irritation occurs: Get medical attention.
P362 + P364	Take off contaminated clothing and wash it before reuse.
P301 + P310	IF SWALLOWED: Immediately call a POISON CENTER or physician.
P331	Do NOT induce vomiting.
P370 + P378	In case of fire: Use water fog or spray, foam, carbon dioxide or dry chemical to extinguish.
P403	Store in a well-ventilated place.
P405	Store locked up.
P501	Dispose of contents and container in accordance with local and national regulations.

2.3 Other Hazards: None known

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substance:

Chemical Name	CAS#	EINECS# / EU REACH Registration Number	ENCS/ ISHL	Classification	%
1-Dodecene	112-41-4	203-968-4/ 01- 2119475509-26-0014	(2)-27 / (2)-27	Flam Liq. Cat 4 (H227), Asp. Tox. Cat 1 (H304), Skin Irrit. Cat 2 (H315), EUH066	95-100

See Section 16 for further information on GHS Classification.

SECTION 4: FIRST AID MEASURES

4.1 Description of First Aid Measures:

Eye: Rinse thoroughly with water, while holding the eye lids open to be sure the material is washed out. Get medical attention if irritation or symptoms of exposure develop.

Skin: Remove contaminated clothing. Wash contact area thoroughly with soap and water for several minutes. Get medical attention if irritation occurs. 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 medical attention if symptoms of exposure persist.

Ingestion: Aspiration hazard: do NOT induce vomiting. Keep the victim calm and warm. If conscious, rinse mouth with water. Never give anything by mouth to an unconscious or convulsing person. If vomiting occurs spontaneously, keep head below hips to prevent aspiration into the lungs. Get immediate medical attention.

4.2 Most Important symptoms and effects, both acute and delayed: May cause moderate skin irritation. Inhalation of mists or vapors may cause headache, dizziness, nausea and other symptoms of central nervous system depression. Aspiration hazard: material may enter the lungs if swallowed and cause lung injury. Repeated skin exposure may cause defatting or drying of skin.

4.3 Indication of any immediate medical attention and special treatment needed: Immediate medical attention is required if

Prepared By:	Safety & Environmental Units
Approved By:	Safety & Environmental Units
Issue/Revision Date:	F.7.6.2576.L / 8/25/20
Date of latest review:	8/25/20

swallowed.

SECTION 5: FIRE-FIGHTING MEASURES

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

5.2 Special Hazards Arising from the Substance or Mixture:

Unusual Fire and Explosion Hazards: Combustible liquid. 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.

Combustion Products: Oxides of carbon.

5.3 Advice for Fire-Fighters:

Wear an approved, positive pressure, self-contained breathing apparatus and full protective clothing. Cool fire exposed containers with water.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 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.

6.2 Environmental Precautions:

Report spills and releases as required to appropriate authorities.

6.3 Methods and Material for Containment and Cleaning Up:

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

6.4 Reference to Other Sections:

Refer to Section 8 for Personal Protective Equipment and Section 13 for Disposal information.

SECTION 7: HANDLING AND STORAGE

7.1 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.

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

7.3 Specific end use(s): Industrial use only

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control Parameters:

Chemical Name	Exposure Limits
1-Dodecene	None Established

Chemical Name	Worker DNEL	PNEC
Not Applicable	None Established	None Established

8.2 Exposure Controls:

Ventilation: Use with adequate general or local exhaust ventilation to minimize exposures levels. Use explosion proof electrical equipment and wiring where required.

Environmental Exposure Controls:

Technical Onsite Conditions and Measures to Reduce or Limit Discharges, Air Emissions and Releases to Soil: None Established

Prepared By:	Safety & Environmental Units
Approved By:	Safety & Environmental Units
Issue/Revision Date:	F.7.6.2576.L / 8/25/20
Date of latest review:	8/25/20

Organization Measures to Prevent/Limit Release from Site: None Established
Conditions and Measures Related to Sewage Treatment Plant: None Established

Personal Protective Equipment:

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 to prevent skin contact. Contact your glove supplier for selection assistance. In Europe follow EN 374.

Eye Protection: Chemical safety glasses or goggles recommended where splashing is possible. In Europe follow EN 166.

Other Protective Equipment: Impervious clothing is required to prevent skin contact and contamination of personal clothing. In Europe follow EN 13034. An eye wash facility and safety shower should be available in the work area.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic Physical and Chemical Properties:

Appearance: Clear, colorless liquid	Vapor Density: 5.81 (1-Dodecene)
Odor: Mild, pleasant odor	Specific Gravity: 0.76 @ 15.6°C (60°F) (1-Dodecene)
Odor Threshold: No data available	Solubility: Insoluble
pH: No data available	Octanol/Water Partition Coefficient: No data available
Melting Point/Freezing Point: -35°C (-31°F) (1-Dodecene)	Autoignition Temperature: 225°C (437°F) (1-Dodecene)
Initial Boiling Point/Range: 213°C (415°F) (1-Dodecene)	Decomposition Temperature: No data available
Flash Point: 77.2°C (171°F) (1-Dodecene)	Viscosity: 0.68 cST @ 100°C (212°F) (1-Dodecene)
Evaporation Rate: No data available	Explosive Properties: Not explosive
Flammable Limits: LEL: 0.6 vol % (1-Dodecene) UEL: 5.4 vol % (1-Dodecene)	Oxidizing Properties: Not an oxidizer
Vapor Pressure: 0.159 mmHg @ 25°C (77°F) (1-Dodecene)	Relative Density: No data available
Molecular Formula: Mixture	Flammability (solid, gas): Not applicable
Molecular Weight: Mixture	

9.2 Other Information: None available

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity: Not reactive

10.2 Chemical Stability: Stable under normal storage and handling conditions.

10.3 Possibility of Hazardous Reactions: Hazardous polymerization will not occur.

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

10.5 Incompatible Materials: Strong oxidizing agents, acids, and reducing agents.

10.6 Hazardous Decomposition Products: Thermal decomposition will produce oxides of carbon.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on Toxicological Effects:

Potential Health Effects:

Prepared By:	Safety & Environmental Units
Approved By:	Safety & Environmental Units
Issue/Revision Date:	F.7.6.2576.L / 8/25/20
Date of latest review:	8/25/20

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

Skin: May cause moderate skin irritation, redness, 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: Aspiration hazard. May cause lung damage during swallowing or vomiting. 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.

Acute Toxicity Values:

1-Dodecene: Oral rat LD50- >10,000 mg/kg, Skin rabbit LD50- >2,000 mg/kg, Inhalation rat LC50 ->4,400 mg/m3/6 hours

Skin corrosion/irritation: 1-Dodecene: Irritating to the skin.

Eye damage/irritation: 1-Dodecene: Not expected to cause eye irritation.

Respiratory Irritation: No data available.

Respiratory Sensitization: No data available.

Skin Sensitization: 1-Dodecene: Non-sensitizing in Buehler guinea pig test.

Germ Cell Mutagenicity: 1-Dodecene: Negative in Ames test, in vitro chromosome aberrations in rat liver cells, and mitotic gene conversion assay.

Carcinogenicity: None of the components of this product are listed as carcinogens by OSHA, IARC, NTP, ACGIH and the EU CLP.

Reproductive Toxicity: No data is available.

Specific Target Organ Toxicity:

Single Exposure: No data available

Repeat Exposure: No data is available.

Aspiration Hazard: This product is classified as an aspiration hazard based on 1-Dodecene.

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity: No ecotoxicity data is available. This product is not expected to be harmful to aquatic organisms.

12.2 Persistence and Degradability: 1-Dodecene: This product is expected to readily biodegradable- 74.1-80% in 28 days.

12.3 Bioaccumulative Potential: No data available

12.4 Mobility in Soil: No data available

12.5 Results of PBT and vPvB Assessment: No data available

12.6 Other Adverse Effects: Not applicable

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste Treatment Methods: Dispose in accordance with all local, state and federal regulations.

Conditions and Measures Related to Sewage Treatment Plant: None Established

SECTION 14: TRANSPORTATION INFORMATION

Prepared By:	Safety & Environmental Units
Approved By:	Safety & Environmental Units
Issue/Revision Date:	F.7.6.2576.L / 8/25/20
Date of latest review:	8/25/20

	14.1 UN Number	14.2 UN Proper Shipping Name	14.3 Hazard Class(s)	14.4 Packing Group	14.5 Environmental Hazards
US DOT	NA1993	Combustible Liquid, n.o.s. (1-Dodecene) *	Combustible Liquid	PG III	Not applicable
Canadian TDG	None	Not Regulated	None	Not applicable	Not applicable
EU ADR/RID	None	Not Regulated	None	Not applicable	Not applicable
IMDG	None	Not Regulated	None	Not applicable	Not applicable
IATA/ICAO	None	Not Regulated	None	Not applicable	Not applicable

*Excepted from HazMat in Non-Bulk Packaging

14.6 Special Precautions for User: Not applicable

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

SECTION 15: REGULATORY INFORMATION

15.1 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: See OSHA Hazard Classification in Section 2.

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 on the TSCA inventory.

STATE REGULATIONS:

California Proposition 65: This product does not contain any substances known in the State of California to cause cancer and/or reproductive harm.

INTERNATIONAL REGULATIONS:

EUROPEAN REGULATIONS

REACH: Brewer products comply with REACH regulation as applicable. For more information, contact the Brewer REACH coordinator.

SVHC: This product contains the following Substances of Very High Concern (SVHCs): None.

KOREAN REGULATIONS

Korea - ISHA - Harmful Agents Subject to Work Environment Monitoring: None

Korea - ISHA - Harmful Agents Subject to Workers Requiring Health Examination: None

Korea National Chemical Information System (NCIS):

Toxic Chemicals	Observation Chemicals	Restricted or Banned Chemicals
Prepared By:	Safety & Environmental Units	
Approved By:	Safety & Environmental Units	
Issue/Revision Date:	F.7.6.2576.L / 8/25/20	
Date of latest review:	8/25/20	

None	None	None
------	------	------

TAIWAN REGULATIONS

Labor Safety and Health Act: Brewer Science, Inc. complies with this regulation as applicable.

Standards of Permissible Exposure Limits of Airborne Hazardous Substances in Workplace: This SDS complies with this regulation by listing applicable components with Occupational Exposure Limits in Section 8: Exposure Controls/Personal Protection.

Regulations Governing Road Traffic Safety: Brewer Science, Inc. complies with this regulation as applicable.

Methods and Facilities Standard for the Storage, Clearance and Disposal of Industrial Waste: Brewer Science, Inc. complies with this regulation as applicable. Refer to Section 6: Accidental Release Measures, Section 7: Handling and Storage, and Section 13: Disposal information.

Public Hazardous Substances & Flammable Pressurized Gases Establishment Standards & Safety Control Regulations: This product is not classified according to Attachment 1: Class, Type and Control Quantity of Public Hazardous Materials.

JAPANESE REGULATIONS

Industrial Safety and Health Law:

Manufacture Prohibited	Manufacture Allowed	Notification Obligation	Labeling Obligation	MSDS Obligation	Dangerous Substance
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable

Poisonous and Deleterious Substances Control Law (PDSCL): None of the chemicals are listed.

Pollutant Release and Transfer Register (PRTR): None of the chemicals are listed.

ISHL Prevention of Organic Solvent Poisoning: None of the chemicals are listed.

Law Concerning the Protection of the Ozone Layer: None of the chemicals are listed.

Fire Service Law: Group 4 – Flammable liquids (3rd Class petroleum-insoluble)

Ship Safety Act: Not regulated

Aviation Law: Not regulated

Air Pollution Control Law: None of the chemicals are listed.

Water Pollution Control Act: None of the chemicals are listed.

Soil Contamination Countermeasures Law: None of the chemicals are listed.

Offensive Odor Control Law: None of the chemicals are listed.

Act on Prevention of Marine Pollution and Maritime Disaster: Noxious Liquid Substances- Category X: 1-Dodecene

15.2 Chemical Safety Assessment: No data available

SECTION 16: OTHER INFORMATION

HMIS Ratings: Health – 2 Flammability – 2 Physical Hazard – 0
NFPA Ratings: Health – 2 Flammability – 2 Instability – 0

SDS Revision History:

1/31/06: New SDS

Prepared By:	Safety & Environmental Units
Approved By:	Safety & Environmental Units
Issue/Revision Date:	F.7.6.2576.L / 8/25/20
Date of latest review:	8/25/20

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.
 12/20/12: Updated format.
 6/25/14: Updated Section 1, 3, 4, 8, 9, and 11.
 2/3/17: Updated header, Section 1: added emergency numbers, Section 2 & 3: Removed old EU classification system, Section 8: updated PPE and added CEN references, Section 14: Transport information, and Section 15: added Taiwan and Korean Regulations.
 7/5/17: Updated Section 11: Aspiration statement and Section 15: Section 311/312 statement.
 5/16/18: Updated Section 1: company e-mail address and removed china number, Section 3: updated format, and Section 8 & 13: added subcategories.
 6/8/20: Updated to current format.
 8/25/20: Updated Section 15.

GHS Classification for Reference (See Sections 2 and 3):

Asp. Tox. Cat 1 Aspiration Hazard Category 1
 Flam. Liq. Cat 4 Flammable Liquid Category 4
 Skin Irrit. Cat 2 Skin Irritation Category 2
 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.

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.

Prepared By:	Safety & Environmental Units
Approved By:	Safety & Environmental Units
Issue/Revision Date:	F.7.6.2576.L / 8/25/20
Date of latest review:	8/25/20