

## SPI Supplies Division

Structure Probe, Inc.

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Manufacturer's CAGE: 1P573

## Safety Data Sheet

Date Effective: March 6, 2019

SPI Catalog #'s 02831-AA, 02831-NA  
SPI-Chem™ Dibutyl Phthalate DBP Plasticizer for  
Epoxy Resins

Component of:  
02808-AB Durcupan® ACM Epoxy Resin Kit  
02650-AA, 02650-AB SPI-Chem™ Araldite® 6005  
Embedding Resin Kit

### Section 1.1: Identification

Chemical Name/Synonyms ..... Dibutyl phthalate

Product or Trade Name ..... SPI-Chem™ Dibutyl Phthalate DBP Plasticizer for Epoxy Resins

CAS #'s ..... 84-74-2

Chemical Formula..... C<sub>16</sub>H<sub>22</sub>O<sub>2</sub>

### Section 1.2: Relevant Uses/Restrictions

Laboratory chemical used as plasticizer in epoxy resin systems for embedding.

### Section 1.3: Supplier of the Safety Data Sheet

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### Section 1.4: Emergency telephone number

Emergencies

Contacting CHEMTREC:

24 Hour Emergency Use Only #'s...

Worldwide phone: 1-(703)-741-5970

Toll-free phone: 1-(800)-424-9300 USA + Canada only

### Section 2: Hazard Identification

#### 2.1 Classification of the substance

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Reproductive toxicity (category 1B)

## 2.2 Label elements

### Pictogram



**Signal Word:** Danger

### Hazard statements:

- H360 May damage fertility or the unborn child.
- H400 Very toxic to aquatic life.

### Precautionary statements:

- P201 Obtain special instructions before use.
- P202 Do not handle until all safety precautions have been read and understood.
- P273 Avoid release to the environment.
- P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
- P308 + P313 If exposed or concerned: Get medical advice / attention.
- P405 Store locked up.
- P501 Dispose of contents / container to an approved disposal plant.

## 2.3 Other Hazards:

### Results of PBT and vPvB assessment:

- PBT: not applicable
- vPvB: not applicable

### Hazardous Material Information System USA

- Health ..... \*0 (chronic health hazard)
- Fire Hazard ..... 1
- Reactivity ..... 0
- Personal Protection .....

### NFPA Rating (estimated)

- Health ..... 0
- Flammability..... 1
- Reactivity ..... 0

## **Section 3: Composition**

### 3.1 Substances:

Dibutyl phthalate      CAS # 84-74-2      EC # 201-557-4      Index Number: 607-318-00-4

## **Section 4: First Aid Measures**

### **4.1 Description of first aid measures:**

#### **Inhalation:**

Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention.

#### **Skin Contact:**

Wash off immediately with soap and plenty of water, removing all contaminated clothing and shoes. Get medical attention if irritation develops.

#### **Eye Contact:**

Flush eyes with water for 15 minutes. Get medical attention if irritation occurs.

#### **Ingestion:**

Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Consult a physician if necessary.

### **4.2 Most important symptoms and effects, both acute and delayed:**

May cause nausea, headache, vomiting.  
May affect the liver.  
It may affect the kidneys.  
Central nervous system effects.  
Dizziness.  
Somnolence.  
Ataxia.  
Convulsions.  
May affect the blood (normocytic anemia).  
It may affect the thyroid.  
May cause slight skin irritation.  
May cause slight eye irritation.

### **4.3 Indication of any immediate medical attention and special treatment needed:**

**Notes to Physician:** Treat symptomatically.

## **Section 5: Fire Fighting Measures**

### **5.1 Extinguishing media:**

**Suitable extinguishing media:** Carbon dioxide (CO<sub>2</sub>), Dry chemical, Water spray mist, or foam.

**Unsuitable extinguishing media:** Do not use a solid (straight) water stream as it may scatter and spread fire.

### **5.2 Special hazards arising from the substance or mixture:**

May be combustible at high temperatures.  
May be ignited by heat, sparks or flames.

### **5.3 Hazardous combustion products:**

Carbon monoxide, Carbon dioxide.

### **5.4 Advice for firefighters:**

For larger fires, use water spray or fog.  
Cool containers with flooding quantities of water until well after fire is out.

### **5.5 Special protective equipment and precautions for firefighters:**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or

equivalent) and full protective gear.

## **Section 6: Accidental Release Measures**

### **6.1 Personal precautions:**

- Ensure adequate ventilation.
- Keep people away from and upwind of spill / leak.
- Use personal protective equipment.
- Avoid contact with skin, eyes and clothing.
- Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.
- Remove all sources of ignition.

### **6.2 Environmental precautions:**

- Prevent further leakage or spillage if safe to do so.
- Do not let product enter the drains.
- Prevent entry into waterways, sewers, basements or confined areas.
- Inform respective authorities in case of seepage into water course or sewage system.

### **6.3 Methods and material for containment and cleaning up:**

#### **Methods for containment:**

- Stop leak if you can do it without risk.
- Absorb spill with inert material (e.g. vermiculite, dry sand, or earth).

#### **Methods for cleaning up:**

- Use appropriate tools to put the spilled material in a suitable chemical waste disposal container.
- Clean contaminated surface thoroughly.

### **6.4 Reference to other sections:**

See Section 13 for disposal information.

## **Section 7: Handling and Storage**

### **7.1 Precautions for safe handling:**

#### **Protective measures:**

- Provide sufficient air exchange and/or exhaust in work rooms.
- Remove all sources of ignition.
- Keep away from incompatible materials.

#### **Advice on general hygiene conditions:**

- Wear personal protective equipment.
- Use only in well-ventilated areas.
- Avoid contact with skin, eyes and clothing.
- Do not ingest.
- Do not breathe vapors or spray mist.
- Keep away from heat and sources of ignition.
- Handle in accordance with good industrial hygiene and safety practice.

### **7.2 Conditions for safe storage, including any incompatibilities:**

- Keep container tightly closed.
- Store at room temperature in original container.
- Store away from incompatible materials.
- Store in a segregated and approved area.

#### **Incompatible materials:**

- Strong oxidizing agents, Chlorine, Nitrates, Bases.

### 7.3 Specific end uses:

Laboratory chemical used as plasticizer in epoxy resin systems for embedding.

This material is not being offered for clinical or diagnostic applications, agricultural uses or for human or animal consumption.

## Section 8: Exposure Controls and Personal Protection

### 8.1 Control parameter and Personal Protection:

#### Workplace exposure limits:

#### United States

Components	CAS No.	OSHA	NIOSH	ACGIH	AIHA WEEL
Dibutyl phthalate	84-74-2	5 mg/m <sup>3</sup> TWA	5 mg/m <sup>3</sup> TWA	5 mg/m <sup>3</sup> TWA	None

#### Canada

Components	CAS No.	Alberta	British Columbia	Ontario	Quebec
Dibutyl phthalate	84-74-2	5 mg/m <sup>3</sup> TWA	5mg/m <sup>3</sup> TWA	None	None

**Australia:** CAS # 84-74-2 5 mg/m<sup>3</sup> TWA

**Mexico:** CAS # 84-74-2 5 mg/m<sup>3</sup> TWA 10 mg/m<sup>3</sup> STEL

**Biological limit values:** No further information available.

### 8.2 Exposure controls:

#### 8.2.1 Appropriate engineering controls:

Ensure adequate ventilation.

Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors and mist below their respective threshold limit value.

#### 8.2.2 Individual protection measures:

##### General protective and hygienic measures:

Keep away from foodstuffs, beverages, and feed.

Immediately remove all soiled and contaminated clothing.

Wash hands before breaks and at the end of work.

Store protective clothing separately.

##### Personal protective equipment:

**Eye protection:** Chemical safety goggles.

**Skin and body protection:** Gloves; Chemical resistant apron; Long sleeved clothing.

**Respiratory protection:** Where Threshold Limit Values may be exceeded, follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

#### 8.2.3 Environmental exposure controls:

Prevent entry into waterways, sewers, basements or confined areas.

Inform respective authorities in case of seepage into water course or sewage system.

## Section 9: Physical and Chemical Properties

### 9.1 Information on basic physical and chemical properties:

**Appearance:**

Form: Viscous

Color: Light yellow

**Odor:** Ester-like**Odor threshold:** Not determined**pH:** Neutral**Melting point/Freezing point:** -35.8 °C (-35 °F)**Boiling point/Boiling point range:** 340 °C (644 °F)**Flash Point:** 188 °C (370 °F)**Evaporation rate:** Not determined**Flammability (solid, gas):** Not flammable**Upper/lower flammability or explosive limits:**

Lower: &lt;0.1 Vol %

Upper: 1.97 Vol %

**Vapor Pressure at 162 °C (324 °F):** 0.00002 hPa**Density:** 1.0465 g/cm<sup>3</sup> (8.733 lbs/gal) @ 20 °C (68 °F)**Vapor density:** Not determined**Relative density:** Not determined**Solubility in / Miscibility with Water at 20 °C (68 °F):** 0.1 g/l**Partition coefficient (n-octanol/water):** Not determined**Ignition temperature:** 390 °C (734 °F)**Auto-igniting:** Not determined**Decomposition temperature:** Not determined**Viscosity:**

Dynamic: 12-14 mPas @ 20 °C (68 °F)

Kinematic: Not determined

**Organic solvents:** 0.0 %**Explosive properties:** Product does not present an explosion hazard.**9.2 Other information:** No further relevant information available.**Section 10: Stability and Reactivity****10.1 Reactivity:** No data available.**10.2 Chemical Stability:** Stable under recommended storage conditions.**10.3 Possibility of Hazardous Reactions:** Hazardous polymerization will not occur.  
Liquid chlorine reacts explosively with Dibutyl phthalate.

**10.4 Conditions to avoid:** Heat, Ignition sources, Incompatible materials.

**10.5 Incompatible materials:** Strong oxidizing agents, Chlorine, Nitrates, Bases.

**10.6 Hazardous decomposition products:** No dangerous decomposition products known.

## Section 11: Toxicological Information

**Information on the likely routes of exposure:**

**11.1 Information on toxicological effects: Dibutyl phthalate CAS # 84-74-2**

**A. Acute toxicity:**

Test type	Exposure route/Species	Dose/Duration	Effects
TDLo	Oral / Human	140 mg/kg	Behavioral/Gastrointestinal/Other
LD50	Oral / Rat	8 gm/kg	Lethal dose value reported
LC50	Inhalation / Rat	4250 mg/m <sup>3</sup>	Lethal dose value reported
LD50	Intraperitoneal / Rat	3050 µL/kg	Lethal dose value reported
LD50	Oral / Mouse	5289 mg/kg	Lethal dose value reported
LC50	Inhalation / Mouse	25 gm/m <sup>3</sup> /2H	Lethal dose value reported
LD50	Intraperitoneal / Mouse	3570 mg/kg	Lethal dose value reported
LD50	Dermal / Rabbit	>20 mL/kg	Lethal dose value reported

**B. Skin corrosion/irritation:** No irritant effect.

**C. Serious eye damage/irritation:** No irritating effect.

**D. Respiratory or skin sensitization:** No sensitizing effects known.

**E. Germ cell mutagenicity:**

Test Type	Species	Dose	Effects
Mutation in Microorganisms	Bacteria – Salmonella typhimurium	100 µ/plate	mildly positive in TA100 & TA1538 culture

**F. Carcinogenicity:**

**IARC (International Agency for Research on Cancer):** The substance is not listed.

**NTP (National Toxicology Program):** The substance is not listed.

**OSHA-Ca (Occupational Safety Health Administration):** The substance is not listed.

**ACGIH (American Conference of Governmental Industrial Hygienists):** The substance is not listed.

**G. Reproductive toxicity:**

Test Type	Exposure Rte/Species	Dose/Duration	Effects
TDLo	Oral / Rat (female)	2250 mg/kg/7-9 days after conception	fetotoxicity

TLLo	Oral / Rat (female)	2520 mg/kg/1-21 days after conception	extra embryonic structures
TDL0	Oral / Rat (female)	8820 mg/kg/7-15 days after conception	post-implantation mortality

H. STOT-single exposure: No data available.

I.. STOT-repeated exposure: No data available.

J. Aspiration hazard: No data available.

## Section 12: Ecological Information

### 12.1 Toxicity:

#### Aquatic toxicity:

Very toxic for fish.

#### Freshwater Algae:

<b>Desmodesmus subspicatus</b>	EC50	1.2 mg/L / 72 h
<b>Pseudokirchneriella subcapitata</b>	EC50	0.4 mg/L / 96 h

#### Water Flea Data:

<b>Daphnia magna</b>	EC50	2.99 mg/L / 48 h
<b>Daphnia Magna</b>	EC50	3.4 mg/L / 48 h

#### Fresh water Fish Data:

Pimephales promelas	LC50	0.71–1.2 mg/L / 96 h flow-through	1
Pimephales promelas	LC50	0.31-5.45 mg/L / 96 h static	1
Oncorhynchus mykiss	LC50	1.24 mg/L / 96 h flow-through	1
Oncorhynchus mykiss	LC50	1.24-5.3 mg/L / 96 h static	1
Lepomis macrochirus	LC50	1.38-1.74 mg/L / 96 h flow through	1
Lepomis macrochirus	LC50	0.42-1.28 mg/L / 96 h static	1

12.2 Persistence and degradability: No further relevant information available.

12.3 Bio-accumulative potential: No further relevant information available.

12.4 Mobility in soil: No further relevant information available.

### 12.5 Results of PBT and vPvB assessment:

PBT: not applicable  
vPvB: not applicable

### 12.6 Other adverse effects:

Water hazard class 2 (Assessment by list): hazardous for water.  
Do not allow product to reach ground water, water course, or sewage system.  
Danger to drinking water if even small quantities leak into the ground.  
Poisonous for fish and plankton in water bodies.  
Very toxic for aquatic organisms.  
No further relevant information available.



## **Section 13: Disposal Considerations**

### **13.1 Waste treatment methods:**

RCRA – U Series Wastes: U069

Must not be disposed of together with household garbage.

Waste must be disposed of in accordance with Federal, State, and Local regulations.

Uncleaned packagings: Disposal must be made according to Federal, State, and Local regulations.

## **Section 14: Transport Information**

### **DOT:**

UN Number: UN3082  
Proper shipping name: Environmentally hazardous substance, liquid, n.o.s. (Dibutyl phthalate)  
Class: 9  
Packing group: III  
Reportable quantity: 10 lbs.  
Marine pollutant: yes  
Poison Inhalation Hazard: No

### **IATA:**

UN Number: UN3082  
Proper shipping name: Environmentally hazardous substance, liquid, n.o.s. (Dibutyl phthalate)  
Class: 9  
Packing group: III

### **IMDG:**

UN Number: UN3082  
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.  
(Dibutyl phthalate)  
Class: 9  
Packing group: III  
EMS-No: F-A, S-F  
Marine pollutant: yes

## **Section 15: Regulatory Information**

### **15.1 Safety, health and environmental regulations/ legislation specific for the substance or mixture:**

#### **U.S. Government Regulations:**

#### **SARA 302 Components:**

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

#### **SARA 311/312 Hazards:**

Chronic Health Hazard

#### **SARA 313 Components:**

The following components are subject to reporting levels established by SARA Title III, Section 313:  
Dibutyl phthalate      CAS No. 84-74-2      Revision Date: 2007-07-01

#### **CERCLA Reportable Quantities:**

Dibutyl phthalate      CAS No. 84-74-2      RQ = 10 lbs.

**TSCA (Toxic Substances Control Act):**

Dibutyl phthalate, CAS No. 84-74-2, is on the TSCA Active Inventory List.

**STATE RIGHT-TO-KNOW LISTS:**

Massachusetts Right to Know Components: Dibutyl phthalate, CAS No. 84-74-2 is on the list.

Pennsylvania Right to Know Components: Dibutyl phthalate, CAS No. 84-74-2 is on the list.

New Jersey Right to Know Components: Dibutyl phthalate, CAS No. 84-74-2 is on the list.

**California Prop. 65:**

Chemicals known to cause cancer: Dibutyl phthalate is not listed.

Chemicals known to cause reproductive toxicity for females: Dibutyl phthalate is listed.

Chemicals known to cause reproductive toxicity for males: Dibutyl phthalate is listed.

**RCRA Code: U069.**

**15.2 Chemical Safety Assessment:** Has not been carried out.

Date of Preparation: 06 March 2019.

**Abbreviations and acronyms**

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

CMRG: Chemical Manufacturer's Recommended Guidelines

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

AIHA: American Industrial Hygiene Association

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bio-accumulative and Toxicological

vPvB: very Persistent and very Bio-accumulative

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety Health

ATE: Acute Toxicity Estimates

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

STEL: Short Term Exposure Limit

CEIL: Ceiling

TSCA: Toxic Substances Control Act (USA)

DSL: Domestic Substances List (Canada)

PICCS: Philippine Inventory of Chemicals and Chemical Substances

ENCS: Existing and New Chemical Substances (Japan)

AICS: Australian Inventory of Chemical Substances

IECSC: Inventory of Existing Chemical Substances in China

KECL: Korea Existing Chemicals List

**Section 16: Other Information****Disclaimer of Liability:**

Caution! Do not use SPI Supplies products or materials in applications involving implantation within the body;

direct or indirect contact with the blood pathway; contact with bone, tissue, tissue fluid, or blood; or prolonged contact with mucous membranes. Products offered by SPI Supplies are not designed or manufactured for use in implantation in the human body or in contact with internal body fluids or tissues. SPI Supplies will not provide to customers making devices for such applications any notice, certification, or information necessary for such medical device use required by US FDA (Food and Drug Administration) regulation or any other statute. SPI Supplies and Structure Probe, Inc. make no representation, promise, express warranty or implied warranty concerning the suitability of these materials for use in implantation in the human body or in contact with internal body tissues or fluids.

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