

## Material Safety Data Sheet

Revision Date: October 21, 2014

### 1. PRODUCT AND COMPANY IDENTIFICACION

**Product Name:** Carboxyl BMB 128-Plex,  
**Product Number:** 44-B0102-XXXX  
 Bar Code number = XXXX  
**Company:** Applied BioCode Inc.  
 10020 Pioneer Blvd. Ste.102  
 Santa Fe Springs CA 90670 USA  
**Telephone:** 562-801-0050  
**Fax:** 562-801-0060

### 2. COMPOSITION/INFORMATION ON INGREDIENTS

**Formula (44-B0102):** Typical 50,000 micro-polymer beads suspended in 1.5 mL of the following storage buffer. The amount of beads per tube may be specified as per custom order.

**Common buffer name:** 1 x Phosphate Buffered Saline with Tween 20 (PBST).

CAS No.	Chemical Name	EC-No. EINECS	Concentration
7647-14-5	Sodium chloride	231-598-3	0.8 %
7447-40-7	Potassium chloride	231-211-8	0.02 %
7558-79-4	Disodium hydrogen phosphate	231-448-7	0.144 %
7778-77-0	Potassium dihydrogen phosphate	231-449-2	0.024 %
9005-64-5	Tween-20	EC-607	0.05 %
2682-20-4	ProClin-950* Active ingredient	220-239-6	0.1 %
7732-18-5	Deionized water	231-791-2	>98 %

### 3. HAZARDS IDENTIFICATION

#### HMIS Classification

CAS #	Chemical Name	Health Hazard	Flammability	Physical Hazard
7647-14-5	Sodium chloride	1	0	0
7447-40-7	Potassium chloride	1	0	0
7558-79-4	Disodium hydrogen phosphate	0	0	0
7778-77-0	Potassium Dihydrogen phosphate	0	0	0
9005-64-5	Tween-20	0	0	0
2682-20-4	ProClin-950* Active ingredient	3	0	0
7732-18-5	Deionized water	0	0	0
N/A	Carboxyl BMB	N/A	N/A	N/A

**NFPA Rating**

CAS #	Chemical Name	Health Hazard	Fire	Reactivity Hazard
7647-14-5	Sodium chloride	1	0	0
7447-40-7	Potassium chloride	0	0	0
7558-79-4	Disodium hydrogen phosphate	0	0	0
7778-77-0	Potassium Dihydrogen phosphate	0	0	0
9005-64-5	Tween-20	0	0	0
2682-20-4	ProClin-950* Active ingredient	3	0	0
7732-18-5	Deionized water	0	0	0
N/A	Carboxyl BMB	N/A	N/A	N/A

**Potential Health**

<b>Inhalation</b>	May be harmful if inhaled.
<b>Skin</b>	May be harmful if adsorbed through skin.
<b>Eyes</b>	May causes eye irritation.
<b>Ingestion</b>	May be harmful if swallowed.

**4. FIRST AID MEASURES****General Advice**

Consult a physician. Show this safety data sheet to the doctor in attendance. Remove person/s from exposure or dangerous area.

**If inhaled**

If breathed in, move person into fresh air. If not breathing give artificial respiration Consult a physician.

**In case of eye contact**

Flush eyes with water as precaution.

**If swallowed**

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

**5. FIRE-FIGHTING MEASURES****Suitable extinguishing media**

For small (incipient) fires, use media such as "alcohol" foam, dry chemical, or carbon dioxide. For large fires apply water from as far as possible.

**Special protective equipment for fire-fighters**

Wear self contained breathing apparatus for firefighting if necessary.

**6. ACCIDENTAL RELEASE MEASURES****Personal precautions**

Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation.

**Environmental precautions**

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

**Methods and materials for containment and cleaning up.**

Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

**7. HANDLING AND STORAGE****Precautions for safe handling**

Avoid contact with skin and eyes. Avoid inhalation of vapor or mist.

Use explosion-proof equipment. Keep away from sources of ignition - No smoking. Take measures to prevent the buildup of electrostatic charge.

**Conditions for safe storage**

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.  
Hygroscopic.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION****Components with workplace control parameters:****Sodium chloride**

Contains no substances with occupational exposure limit values.

**Potassium chloride**

No OSHA Vacated PELs are listed for this chemical.

**Disodium hydrogen phosphate**

Safety shower and eye bath. Mechanical exhaust required.  
No OSHA Vacated PELs are listed for this chemical.

**Potassium dihydrogen phosphate**

Use adequate ventilation to keep airborne concentrations low.  
No OSHA Vacated PELs are listed for this chemical.

**Tween-20**

Contains no substances with occupational exposure limit value.

**ProClin-950\***

Face shields, full-face respirator (US), Gloves, Goggles, multipurpose combination respirator cartridge (US) type ABEK(EN14387) respirator filter.  
No occupational exposure limits established.

**Carboxyl BMB**

Carboxyl BMB (micro-polymer beads) are highly cross-linked Bisphenol-A Novolac epoxy resin.  
No occupational exposure limits established.

**Personal protective equipment:****Hand protection**

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

**Eye protection**

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

**Skin and body protection**

Impervious clothing, Flame retardant antistatic protective clothing, the type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

**Hygiene measures**

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

**9. PHYSICAL AND CHEMICAL PROPERTIES****Appearance**

Form	liquid, clear
Color	colorless

**Safety data**

pH	~ 7.58
Melting point/freezing point	~ 0 deg C
Boiling point	> 100 deg C

Flash point	not available
Ignition temperature	not available
Lower explosion limit	not available
Upper explosion limit	not available
Vapor pressure	not available
Density	not available
Water solubility	NA for Polymer beads suspended in buffer

## 10. STABILITY AND REACTIVITY

### Chemical stability

Stable under recommended storage conditions.

### Possibility of hazardous reactions

None identified under normal storage condition.

### Conditions to avoid

Incompatible materials, excess heat

### Materials to avoid

Not compatible with acidity exposures below pH 4.5 for extended periods. Bead may be functionally damaged.

### Hazardous decomposition products

Other decomposition products - no data available Hazardous decomposition products formed under fire conditions. – None known.

## 11. TOXICOLOGICAL INFORMATION

### Acute toxicity

#### Oral LD50

##### CAS # 7647-14-5

Oral, mouse: LD50=4gm/kg

Oral, rat: LD50=3000 mg/kg

##### CAS # 7447-40-7

Oral, mouse: LD50=1500 mg/kg

Oral, rat: LD50=2600 mg/kg

##### CAS # 7558-79-4

Oral, mouse: LD50=N/A

Oral, rat: LD50= 17 gm/kg

##### CAS # 7778-77-0

Oral, mouse: LD50=N/A

Oral, rat: LD50=N/A

##### CAS # 9005-64-5

Oral, mouse: LD50=>33 gm/kg

Oral, rat: LD50= 40,554 mg/kg

##### CAS # 2682-20-4

Oral, mouse: LD50=N/A

Oral, rat: LD50= 3600 mg/kg

### Inhalation LC50

#### CAS # 7647-14-5

Inhalation, rat: LC50=>42 gm/m3/1H

#### CAS # 7447-40-7

May cause respiratory tract irritation

#### CAS # 7558-79-4

May cause respiratory tract irritation

**CAS # 7778-77-0**

May cause respiratory tract irritation

**CAS # 9005-64-5**

May cause respiratory tract irritation

**CAS # 2682-20-4**

May be harmful after inhalation and irritate the respiratory tract

**Skin corrosion/irritation**

**CAS # 7647-14-5**

Skin, rabbit: LD50 = > 10 gm/kg

**CAS # 7447-40-7**

May cause skin irritation

**CAS # 7558-79-4**

May be harmful if absorbed through skin. May cause skin irritation.

**CAS # 7778-77-0**

May cause skin irritation. Low hazard for usual industrial handling.

**CAS # 9005-64-5**

Skin-Human-Mild skin irritation- 3d

**CAS # 2682-20-4**

ProClin 950\* is a potential sensitizer by skin contact; prolonged or repeated exposure may cause rash occurs.

**Serious eye damage/eye irritation**

**CAS # 7647-14-5**

Eyes-rabbit-Mild eye irritation-Draize Test

**CAS # 7447-40-7**

Draize test, rabbit, eye: 500 mg/24H Mild

**CAS # 7558-79-4**

Draize test, rabbit, eye: 500 mg/24H Mild

**CAS # 7778-77-0**

May cause eye irritation

**CAS # 9005-64-5**

May cause eye irritation

**CAS # 2682-20-4**

Irritation of the skin. Danger of skin absorption. May lead to hypersensitivity.

**Respiratory or skin sensitization**

**CAS # 7647-14-5**

May cause respiratory tract irritation

**CAS # 7447-40-7**

May cause respiratory tract irritation

**CAS # 7558-79-4**

May cause respiratory tract irritation

**CAS # 7778-77-0**

May cause respiratory tract irritation

**CAS # 9005-64-5**

May cause respiratory tract irritation

**CAS # 2682-20-4**

May cause respiratory tract irritation

**Germ cell mutagenicity****CAS # 7647-14-5**

No data available

**CAS # 7447-40-7**

Unscheduled DNA Synthesis: Oral, rat= 1500 ug/kg

Mutation in Mouse Lymphocyte= 2048 mg/L

DNA Damage in Hamster Ovary= 260 mmol/L

Cytogenetic Analysis in Hamster Lung= 12 gm/L

**CAS # 7558-79-4**

No data available

**CAS # 7778-77-0**

No data available

**CAS # 9005-64-5**

No data available

**CAS # 2682-20-4**

No data available

**Carcinogenicity**

CAS # 7647-14-5: Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65

CAS # 7447-40-7: Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65

CAS # 7558-79-4: Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65

CAS # 7778-77-0: Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65

CAS # 9005-64-5: Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65

CAS # 2682-20-4: No data available

CAS # 7732-18-5: Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65

**Carcinogenicity - mouse - Oral**

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

**Reproductive toxicity**

CAS # 7647-14-5: No data available

CAS # 7447-40-7: No data available

CAS # 7558-79-4: No data available

CAS # 7778-77-0: No data available

CAS # 9005-64-5: Adverse reproductive effects have occurred in experimental animals.

CAS # 2682-20-4: No data available

**Specific target organ toxicity - single exposure (Globally Harmonized System)**

CAS # 7647-14-5: No data available

CAS # 7447-40-7: Target Organs: Eyes.

**Cause eye irritation: May cause chemical conjunctivitis.**

CAS # 7558-79-4: No data available

CAS # 7778-77-0: No data available

CAS # 9005-64-5: None known

CAS # 2682-20-4: No data available

**Specific target organ toxicity - repeated exposure (Globally Harmonized System)**

CAS # 7647-14-5: No data available

CAS # 7447-40-7: No data available

CAS # 7558-79-4: No data available

CAS # 7778-77-0: No data available

CAS # 9005-64-5: No data available

CAS # 2682-20-4: No data available

**Aspiration hazard**

No data available

**Signs and Symptoms of Exposure**

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

**12. ECOLOGICAL INFORMATION****CAS # 7647-14-5**

Toxicity to fish

LC50-Lepomis macrochirus (Bluegill)-1,294.6 mg/l-96 h

NOEC-Pimephales promelas (fathead minnow)-4,000 mg/l-7 d

**Toxicity to daphnia and other aquatic invertebrates**

NOEC-Daphnia- 1,500 mg/l – 7 d

LC50- Daphnia magna (Water flea)- 1,661 mg/l – 48 h

**CAS # 7447-40-7**

No data available

**CAS # 7558-79-4**

No data available

**CAS # 7778-77-0**

No data available

**CAS # 9005-64-5**

Toxicity to fish LC50-other fish-350 mg/l-24 h

**CAS # 2682-20-4**

**Do not allow to enter waters, waste water or soil.** Highly toxic for aquatic organisms. Due to the small size of 2 mL vial and the low concentration of hazardous ingredient in this product, risks are estimated to be minor.

**Persistence and degradability**

No data available

**Bioaccumulative potential**

No data available

**Mobility in soil**

No data available

**PBT and vPvB assessment**

No data available

**Other adverse effects**

No data available

### 13. DISPOSAL CONSIDERATION

#### Product

Contact a licensed professional waste disposal service to dispose of this material. Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

#### Contaminated packaging

Dispose of as unused product.

### 14. TRANSPORT INFORMATION DOT (US)

**DOT** - Not regulated

UN number: NA

Proper shipping name: PBS, 1X / Tween 20, 0.5%

Reportable Quantity (RQ): NA

Marine pollutant: No data available

Poison Inhalation Hazard: NA

**IMDG** - Not regulated

UN number: NA

Packing group: NA

EMS-No: NA

Marine pollutant: No data available

#### IATA

UN number: Not regulated - Non-hazardous for transport.

### 15. REGULATORY INFORMATION

OSHA Hazards: None of the chemicals in this product are considered highly hazardous.

### 16. OTHER INFORMATION

The above information is believed to be correct but does not claim to be all complete and shall be used only as a guide. The information in this document is based on our present knowledge and is applicable to the product with regard to appropriate safety precautions. Applied BioCode Inc. shall not be held liable for any damage resulting from handling or from contact with the above product.

\* ProClin is a registered trademark of Rohm and Haas Co.