

Living up to Life



BIO SYSTEMS

## Safety Data Sheet

### Define (Concentrate)

#### SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND THE COMPANY

##### 1.1 Product Identifier

**Trade Name** Define (Concentrate)  
**Product #** 3803590 3803591  
**SDS #** 135  
**SDS Date** August 22, 2013

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

**Product Use:** Laboratory Reagent  
**Uses Advised Against:** All other uses.

##### 1.3 Details of the Supplier of the Substance or Mixture

**Manufacturer/Preparer:** Leica Biosystems Richmond, Inc. Leica Biosystems Canada, Inc.  
5205 Route 12 83 Terracon Place  
Richmond, IL 60071 Winnipeg, Manitoba R2J 4B3  
800-225-8867 800-665-7425

##### 1.4 Emergency Telephone Number

**Emergency Spill Information** 1-800- 424-9300 (CHEMTREC)  
+1-703-527-3887 International calls (call collect)  
**Other Product Information:** 1-800-225-8867

#### SECTION 2: HAZARDS IDENTIFICATION

##### 2.1 Classification of the Substance or Mixture

**CLP/GHS Classification (1272/2008):** Not classified as hazardous.

**EU Classification (67/548/EEC):** Not classified as dangerous

**2.2 Label Elements:** None required

**2.3 Other Hazards:** None

#### SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

##### 3.1 Substances

Chemical Name	CAS Number / EINECS Number / REACH Reg. Number	% (w/w)	EU Classification (67/548/EEC)	CLP/GHS Classification (1272/2008)
Citric Acid	77-92-9	< 2	Xi, R36	Eye irritant category 2A(H319)

See Section 16 for full text of GHS and EU Classifications.

## SECTION 4: FIRST AID MEASURES

### 4.1 Description of First Aid Measures

#### First Aid

**Eye contact:** Flush eyes with water, holding the eyelids apart. Get medical attention if irritation persists.

**Skin contact:** Wash skin with soap and water after handling. Get medical attention if irritation develops, or persists.

**Inhalation:** If irritation develops, remove victim to fresh air. Get medical attention if symptoms persist.

**Ingestion:** If small quantities are swallowed, rinse out mouth with water. Do not induce vomiting. Never give anything by mouth to an unconscious or drowsy person. If large amounts are swallowed or if irritation or discomfort occurs, get medical attention.

**See Section 11 for more detailed information on health effects.**

**4.2 Most Important symptoms and effects, both acute and delayed:** May cause mild eye irritation. Prolonged skin contact may cause mild irritation.

**4.3 Indication of any immediate medical attention and special treatment needed:** No immediate treatment is normally required.

## SECTION 5: FIREFIGHTING MEASURES

### 5.1 Extinguishing Media:

Use any media that is suitable for the surrounding fire.

### 5.2 Special Hazards Arising from the Substance or Mixture

**Unusual Fire and Explosion Hazards:** None known.

**Combustion Products:** Carbon oxides

**5.3 Advice for Fire-Fighters:** Self-contained breathing apparatus and protective clothing should be worn in fighting large fires involving chemicals. Determine the need to evacuate or isolate the area according to your local emergency plan. Use water spray to keep fire exposed containers cool.

## SECTION 6: ACCIDENTAL RELEASE MEASURES

### 6.1 Personal Precautions, Protective Equipment and Emergency Procedures:

Wear appropriate protective equipment.

### 6.2 Environmental Precautions:

Prevent entry in storm sewers and waterways. Report spill as required by local and federal regulations.

### 6.3 Methods and Material for Containment and Cleaning Up:

Stop spill at the source if it is safe to do so. Absorb with an inert material and place 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 contact with eyes, skin and clothing. Avoid breathing mists. Wash thoroughly after handling. Keep containers closed when not in use.

#### 7.2 Conditions for Safe Storage, Including any Incompatibilities:

Protect containers from physical damage. Store in a cool area. Keep containers closed when not in use.

#### 7.3 Specific end use(s):

**Industrial uses:** None identified

**Professional uses:** Laboratory Reagent

### SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

#### 8.1 Control Parameters:

Chemical Name	US OEL	EU IOEL	UK OEL	Germany OEL
Citric Acid	None Established	None Established	None Established	None Established

Refer to local or national authority for exposure limits not listed above.

Chemical Name	Biological Limit Value
Citric Acid	None Established

#### 8.2 Exposure Controls:

**Recommended Monitoring Procedures:** None required.

**Appropriate Engineering Controls:** Use with adequate ventilation to minimize exposure.

#### Personal Protective Measurers

**Eye/face Protection:** Wear safety glasses if splashing is possible.

**Skin Protection:** None normally required.

**Hands:** Impervious gloves recommended (latex or nitrile) for prolonged use.

**Respiratory Protection:** None normally required.

**Other protection:** None required.

### SECTION 9: PHYSICAL and CHEMICAL PROPERTIES

#### 9.1 Information on basic Physical and Chemical Properties

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**Appearance:** Colorless liquid with no odor.  
**Odor Threshold:** Not applicable  
**Melting/Freezing Point:** Not applicable  
**Flash Point:** : Not flammable  
**Lower Flammability Limit:** Not applicable  
**Upper Flammability Limit:** Not applicable  
**Vapor Density(Air=1):** Not applicable  
**Solubility:** Soluble in water  
**Autoignition Temperature:** Not available

**Odor:** Slight odor  
**pH:** 3 - 4  
**Boiling Point:** 100°C (212°F)  
**Evaporation Rate:** Not determined  
**Vapor Pressure:** Not available

**Relative Density:** 1.00  
**Octanol/Water Partition Coefficient:** Not available  
**Decomposition Temperature:** Not established

**Viscosity:** Not applicable  
**Oxidizing Properties:** None  
**Molecular Formula:** Mixture

**Explosive Properties:** Not explosive  
**Specific Gravity (H<sub>2</sub>O= 1):** 1.00  
**Molecular Weight:** Mixture

**9.2 Other Information:** None available

## SECTION 10: STABILITY and REACTIVITY

**10.1 Reactivity:** This material is not reactive under normal conditions.

**10.2 Chemical Stability:** Normally stable.

**10.3 Possibility of Hazardous Reactions:** Not expected to be reactive.

**10.4 Conditions to Avoid:** None known.

**10.5 Incompatible Materials:** None known.

**10.6 Hazardous Decomposition Products:** Thermal breakdown of this product during fire or very high heat conditions may evolve the following decomposition products: Carbon oxides.

## SECTION 11: TOXICOLOGICAL INFORMATION

**11.1 Information on Toxicological Effects:**

**Potential Health Effects:**

**Eye Contact:** May cause eye irritation with redness and tearing.

**Skin contact:** Prolonged skin contact may cause irritation.

**Inhalation:** High mist concentrations may cause coughing and sneezing.

**Ingestion:** Swallowing may cause gastrointestinal effects including gastrointestinal irritation, nausea and diarrhea.

**Acute toxicity:**

Citric Acid: LD50 oral rat 3000 mg/kg

**Skin corrosion/irritation:** No data available for mixture. Components are not corrosive.

**Eye damage/ irritation:** No data available for mixture. Not classified as an eye irritant.

**Respiratory Irritation:** No data available for mixture. High concentrations of mists may be mildly irritating to the respiratory system.

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**Respiratory Sensitization:** No data available for mixture. None of the components are respiratory sensitizers.

**Skin Sensitization:** No data available for mixture. None of the components are skin sensitizers.

**Germ Cell Mutagenicity:** No data available for mixture. None of the components are germ cell mutagens.

**Carcinogenicity:** No data available for mixture. None of the components of this product are listed as carcinogens by OSHA, ACGIH, IARC, NTP, or the EU Dangerous Substances Directive.

**Reproductive Toxicity:** No data available for mixture. This product is not expected to cause adverse reproductive effects.

**Specific Target Organ Toxicity:**

Single Exposure: None known.

Repeat Exposure: None known.

**SECTION 12: ECOLOGICAL INFORMATION**

**12.1 Toxicity:** Citric Acid: LC50 *Carcinus maenas* (European shore crab) 160 mg/L/48 hr

**12.2 Persistence and degradability:** The biodegradability of citric acid was determined to be well degraded..

**12.3 Bioaccumulative Potential:** An estimated BCF of 3.2 was calculated for citric acid, this BCF suggests the potential for bioconcentration in aquatic organisms is low.

**12.4 Mobility in Soil:** Citric acid is expected to have a high mobility in soil.

**12.5 Results of PVT and vPvB assessment:** Not required.

**12.6 Other Adverse Effects:** No data available.

**SECTION 13: DISPOSAL CONSIDERATIONS**

**13.1 Waste Treatment Methods:**

Dispose in accordance with local, state and national regulations.

**SECTION 14: TRANSPORTATION INFORMATION**

	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		Not Regulated			
Canadian TDG		Not Regulated			
EU ADR/RID		Not Regulated			
IMDG		Not Regulated			
IATA/ICAO		Not Regulated			

**14.6 Special Precautions for User:** None

**14.7 Transport in Bulk According to Annex III MARPOL 73/78 and the IBC Code:** Not determined.

## SECTION 15: REGULATORY INFORMATION

### 15.1 Safety, Health and Environmental Regulations/Legislation Specific for the Substance or Mixture

#### INTERNATIONAL INVENTORIES

**EPA TSCA INVENTORY:** All of the components are listed on the TSCA inventory.

**CANADIAN ENVIRONMENTAL PROTECTION ACT:** All of the ingredients are listed on the Canadian Domestic Substances List.

**EUROPEAN UNION:** All of the components of this product are listed on the European Inventory of New and Existing Chemical Substances (EINECS) inventory.

**AUSTRALIA:** All of the ingredients of this product are listed on the Australian Inventory of Chemical Substances (AICS).

**CHINA:** All of the ingredients are listed on the Chinese chemical inventory.

**KOREA:** All of the components of this product are listed on the Korean Existing Chemical List (KECL).

**NEW ZEALAND:** All of the components of this product are listed on the New Zealand Inventory of Chemicals (NzIoC).

**PHILIPPINES:** All of the components of this product are listed on the Philippine Inventory of Chemicals and Chemical Substances (PICCS).

**JAPAN:** All of the components of this product are listed on the Japanese Existing and New Chemical Substances List (ENCS)

#### U.S. REGULATIONS

**OSHA HAZARD CLASSIFICATION:** Not hazardous

**EPA SARA 302:** This product does not contain chemicals regulated under SARA Section 302.

**CERCLA Section 103:** This product is not subject to CERCLA reporting requirements. Many states have more stringent release reporting requirements. Report spills as required under federal, state and local regulations.

**EPA SARA 311 HAZARD CLASSIFICATION:** Not hazardous

**EPA SARA 313:** This product contains the following chemicals that are regulated under SARA Title III, section 313:  
None

**CALIFORNIA PROPOSITION 65:** This product contains the following chemicals which are known to the State of California to cause cancer, reproductive toxicity or birth defects (developmental toxicity): None known

#### INTERNATIONAL REGULATIONS

**WHMIS CLASSIFICATION:** Not a controlled product

## SECTION 16: OTHER INFORMATION

**Revision History:** Updated Logo and website.

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

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Xi Irritant  
R36 Irritating to eyes

CLP/GHS Classification and H Phrases for Reference (See Section 3)  
H319 Causes serious eye irritation

NFPA Rating: Health: 1 Fire: 0 Instability: 0  
HMIS Rating: Health: 1 Fire: 0 Physical Hazard: 0

This Safety Data Sheet has been prepared in accordance with the REACH regulation in the EU and the Globally Harmonized System for the Classification and Labelling of Chemicals (GHS). It complies with the requirements of the Canadian Controlled Products Regulations and US 29CFR 1910.1200. To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries makes any warranty of merchantability or any other warranty, expressed or implied, which respect to such information, and we assume no liability resulting from its use. In no event shall Leica Biosystems be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages resulting from use of or reliance upon this information.