

SAFETY DATA SHEET



Elution buffer (EB)

Version 1.1

Revised: October 31, 2019

SECTION 1. IDENTIFICATION

Product name Elution buffer (EB)

Manufacturer or supplier's details

Company Impact Proteomics, LLC

Telephone (512) 815-2067

Responsible Department Impact Proteomics, LLC
1406 Browning Rd.
Pittsburgh PA USA
Tel: (512) 815-2067

Email address info@impactproteomics.com

Emergency telephone 1-800-255-3924
ChemTel Chemical Emergency Response Hotline

Recommended use of the chemical and restriction on use

Recommended use Laboratory chemicals

SECTION 2. HAZARDS IDENTIFICATION

Classification according to regulation (EC)No. 1272/2008 [CLP]

Skin Corrosion/Irritation Category 2

Acute Toxicity (oral) Category 4

Acute Toxicity (Inhalation) Category 4

Serious Eye Category 1

Damage/Irritation

GHS Label elements, including precautionary statements

Pictogram



Signal word Danger

Hazard statement(s)

H302 Harmful if swallowed

H315 Causes skin irritation

H318 Causes serious eye damage

H332 Harmful if inhaled

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Precautionary statement(s)

P261	Avoid breathing vapors/spray
P264	Wash hands well after handling
P270	Do not eat, drink or smoke when using this product
P271	Use in a well-ventilated area
P280	Wear protective gloves/protective clothing/eye protection/face protection
P301+P312	IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
P302+P352	IF ON SKIN: Wash with plenty of soap and water
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER or doctor/physician
P312	Call a POISON CENTER or doctor/physician if you feel unwell
P330	Rinse mouth
P332+P313	If skin irritation occurs: Get medical advice/attention
P362+P364	Take off contaminated clothing and wash it before reuse
P501	Dispose of contents/container in accordance with local regulations

Hazards not otherwise classified (HNOC) or not covered by GHS - none

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance/Mixture	Mixture
Substance Name	Elution Buffer (EB)

<u>Component</u>	<u>CAS Number</u>	<u>Concentration</u>
Formic acid	64-18-6	0.4%

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SECTION 4. FIRST AID MEASURES

General advice	Show this material safety data sheet to the doctor in attendance
If inhaled	Move to fresh air. If symptoms persist, call a physician
In case of skin contact	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. If symptoms persist, call a physician.
In case of eye contact	Remove contact lenses. Protect unharmed eye. Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.
If swallowed	Obtain immediate medical attention. Rinse mouth with water. Never give anything by mouth to an unconscious person
Most important symptoms and effects, both acute and delayed	To the best of our knowledge, the chemical, physical and toxicological properties have not been thoroughly investigated.
Notes to physician	Treat symptomatically

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media	Water spray, foam, carbon dioxide or dry chemical powder – Do not use water jets
Hazardous combustion products	The product will support combustion of oxidizable materials. Vapor may travel to source of ignition and flash back. On burning, will emit toxic fumes, including oxides of carbon. The packaging material may burn to emit noxious fumes
Specific extinguishing methods	Fire fighters should wear self-contained breathing apparatus and acid-resistant chemical splash unit to minimize risk of exposure. If safe to do so, remove undamaged containers from the path of fires. Cool containers with flooding quantities of water until well after fire is out. Avoid getting water inside containers.
Special protective equipment for fire-fighters	Wear self-contained, approved breathing apparatus and full protective clothing, including eye protection and boots. Material can react violently with water (spattering and misting) and react with metals to produce flammable hydrogen gas.

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SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	Do not take action without suitable protective clothing - see section 8 of SDS. Evacuate personnel to safe areas. Ensure adequate ventilation. Avoid breathing vapors, mist, dust or gas.
Methods and materials for containment and cleaning up	Absorb with dry earth, sand or other non-combustible material. Neutralise with lime or soda ash. Use clean nonsparking tools to collect and seal in properly labelled drums for disposal in an area approved by local authority bylaws. Wash area down with excess water to remove residual material.
Environmental precautions	Do not let product enter drains

SECTION 7. HANDLING AND STORAGE

Precautions for safe handling	Keep containers closed at all times - check regularly for leaks or spills. Transport and store upright. Use in a well ventilated area. Do not use in confined spaces. Build up of mists or vapours in the atmosphere must be prevented. Avoid breathing spray, mists or vapours. Do not use near welding or other ignition sources and avoid sparks. Avoid eye contact and repeated or prolonged skin contact. Do not eat, drink or smoke in contaminated areas. Always remove contaminated clothing and wash hands before eating, drinking, smoking or using the toilet. Wash contaminated clothing and other protective equipment before storage or re-use.
Conditions for safe storage, including any incompatibilities	Store in the original container, in a cool dry well-ventilated area out of sunlight and away from heat, ignition sources, oxidising agents and other combustible materials and foodstuffs. Do not store in confined spaces. Keep containers closed when not in use to ensure contamination does not occur - check regularly for leaks. Do not combine part drums of the same product, as this may be a source of contamination. Do not mix with other chemicals. Do not pressurise, cut, heat or weld containers as they may contain hazardous residues. This material is a Scheduled Poison S5 and must be stored, maintained and used in accordance with the relevant regulations.

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SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with work place control parameters

Formic acid CAS-No 64-18-6

Exposure limits	Basis	Entity
5 ppm/ 9 mg/m ³	PEL	PSHA
10 ppm (19 mg/m ³)	STEL	ACGIH

Exposure Controls

Occupational exposure controls: Ventilation and appropriate grounding of containers.

Personal protective equipment

Wear protective gloves and eye protection

Eye protection	Safety glasses
Skin and body protection	Choose body protection according to the amount and concentration of the dangerous substance at the work place. Footwear protecting against chemicals.
Hygiene measures	Keep away from food and drink. When using do not eat, drink, or smoke.

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SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Clear/colorless
Physical state	Liquid
Odor	Pungent
Odor Threshold	Not available
pH	<2
Melting point/range	Not available
Boiling point/range	Not available
Flash point	Not available
Evaporation rate	No data available
Flammability (solid gas)	Not available
Explosion limits	Not available
Solubility in water	Completely soluble in water

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SECTION 10. STABILITY AND REACTIVITY

Reactivity	Reacts with alkalis and amines. Exothermic reaction
Chemical stability	When stored at room temperature the product is stable
Conditions to avoid	Do not combine part drums of the same product, as this may be a source of contamination. Avoid exposure to heat, direct sunlight, open flames or other sources of ignition. Avoid exposure to moisture air or water.
Incompatible materials	Alkalis (eg ammonia, ammonium hydroxide, calcium hydroxide, potassium hydroxide, sodium hydroxide), aluminium, iron, steel, metals, finely divided metals, oxidising agents, reducing agents, permanganates, sulfuric acid, hydrogen peroxides, nitro compounds (eg nitrobenzene, nitroglycerine, picric acid, trinitrotoluene), cyanide compounds, catalysts and many plastics.
Hazardous decomposition products	Thermal decomposition may result in the release of toxic and/or irritating fumes including carbon monoxide and carbon dioxide. The packaging material may burn to emit noxious fumes.

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SECTION 11. TOXICOLOGICAL INFORMATION

No toxicity data for this specific product, however toxicity data for the hazardous ingredient is listed below.

TOXICITY DATA FOR FORMIC ACID

Acute toxicity – oral exposure Oral LDLo(woman) 2.44 mg/kg Oral LD50 (rat) 1100 mg/kg

Acute toxicity – dermal exposure (rabbit) 610 mg – mild effect (open irritation test)

Acute toxicity – eye exposure (rabbit) 122 mg - severe effect

Acute toxicity – Inhalation Inhalation LC50 (rat) 15,000 mg/m³/15min

Irritation No data available

Corrositivity Corrosive to eyes and may injure the cornea. Contamination of eyes can result in permanent injury. Symptoms include stinging, tearing, redness and swelling of eyes. Corrosive to skin - may cause skin burns. May not produce an immediate burning sensation upon contact, delaying the awareness that contact has occurred. Symptoms may include redness, burning, and swelling of skin, burns, and other skin damage.

Sensitisation No data available

Repeated dose toxicity No data available

Carcinogenicity IARC: No components of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
 ACGIH: No components of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by ACGIH
 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 components of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA

Mutagenicity No data available

Specific Target Organ Toxicity from single exposure No data available

Specific Target Organ Toxicity from Repeated Exposure No data available

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Aspiration hazard No data available

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SECTION 12. Ecological Information

Toxicity	LC50 Bluegill (<i>Lepomis macrochirus</i>) 175 mg/L/24hr LC50 Green or European shore crab (<i>Carcinus maenas</i>) 80 - 90 mg/L/48hr LC50 Brine Shrimp (<i>Artemia salina</i>) 410 mg/L/24hr (NAUPLII - larval stage)
Persistence and degradability	Considered to be readily biodegradable.
Bioaccumulative potential	Will not accumulate
Mobility in soil	Data not available
Results of PBT and vPVB assessment	No information available
Other adverse effects	Avoid contaminating waterways. The product is highly acidic. If large spills occurred a water pH drop could be responsible for an environmental effect on aquatic organisms.

SECTION 13. DISPOSAL CONSIDERATIONS

Waste from residues/unused product	Empty containers should be forwarded to an approved agent for recycling. Avoid unauthorised discharge to sewer. Advise its corrosive, toxic, sensitising and combustible liquid nature. Empty containers must be decontaminated
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SECTION 14. TRANSPORT INFORMATION

Transportation by land – Department of Transportation (DOT, United States of America)

Levels of Formic Acid <5% are not regulated by the DOT. The level of formic acid of 0.4% in this reagent is below this limit and so is not subject to regulation.

Transportation by air – International Air Transport Association (IATA)

Levels of Formic Acid <5% are not regulated by the IATA. The level of formic acid of 0.4% in this reagent is below this limit and so is not subject to regulation.

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SECTION 15. REGULATORY INFORMATION

Occupational Safety and Health Administration Hazards

Not listed

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

European Inventory of Existing Commercial Chemical Substances (EINECS),
European List of Notified Chemical Substances (ELINCS), and No Longer Polymers (NLP)

Not listed.

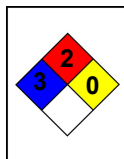
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National Fire Protection Association (NFPA) Rating for formic acid

Health: 3
Flammability: 2
Reactivity: 0



SECTION 16. OTHER INFORMATION

Document Revision

Last Revision Date: 10/31/2019

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Full text of other abbreviations

(Q)SAR - (Quantitative) Structure Activity Relationship; ASTM - American Society for the Testing of Materials; bw - Body weight; DIN - Standard of the German Institute for Standardisation; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISO - International Organisation for Standardization; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative; DSL - Domestic Substances List (Canada); KECI - Korea Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); AICS - Australian Inventory of Chemical Substances; IECSC - Inventory of Existing Chemical Substances in China; ENCS - Existing and New Chemical Substances (Japan); ISHL - Industrial Safety and Health Law (Japan); PICCS - Philippines Inventory of Chemicals and Chemical Substances; NZIoC - New Zealand Inventory of Chemicals; TCSI - Taiwan Chemical Substance Inventory; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; DOT - Department of Transportation; EHS - Extremely Hazardous Substance; HMIS - Hazardous Materials Identification System; MSHA - Mine Safety and Health Administration; NFPA - National Fire Protection Association; RCRA - Resource Conservation and Recovery Act; RQ - Reportable Quantity; SARA - Superfund Amendments and Reauthorization Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; GLP - Good Laboratory Practice; ERG - Emergency Response Guide; NTP - National Toxicology Program; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods

DISCLAIMER

When handled properly by qualified personnel, the product described herein does not present a significant health or safety hazard. Alteration of its characteristics by concentration, evaporation, addition of other substances, or other means may present hazards not specifically addressed herein and which must be evaluated by the user. The information furnished herein is believed to be accurate and represents the best data currently available to us. No warranty, expressed or implied, is made and Impact proteomics, LLC. assumes no legal responsibility or liability whatsoever resulting from its use.