

Material Safety Data Sheet

Section I – Product Identification

Product Name: Micro-Fuel Cell, Class A-2C
Manufacturer: Teledyne Electronic Technologies/Analytical Instruments
Address: 16830 Chestnut Street, City of Industry, CA 91749
Phone: (818) 961-9221
Customer Service: Extension 222
Environmental Health and Safety: Extension 230
Date Prepared : 9/26/96

Section II – Physical and Chemical Data

Composition

Chemical and Common Names: Acetic Acid ($\text{HC}_2\text{H}_3\text{O}_2$) 5% v/v
Potassium Acetate ($\text{KC}_2\text{H}_3\text{O}_2$) 5% w/v
Lead (Pb), pure

CAS Number:	$\text{HC}_2\text{H}_3\text{O}_2$	64-19-7
	$\text{KC}_2\text{H}_3\text{O}_2$	127-08-2
	Pb	7439-92-1

Character of Individual Components

	$\text{HC}_2\text{H}_3\text{O}_2$ (99+%)	Pb (pure)	$\text{KC}_2\text{H}_3\text{O}_2$ (97%)
Melting Point/Range:	16.6 °C	328 °C	292 °C
Boiling Point/Range:	118 °C	1744 °C	N/A
Specific Gravity:	1.05	11.34	1.57
pH:	N/A	N/A	N/A
Solubility in Water:	Infinite	Insoluble	72%
Appearance and Odor:	Clear, colorless solution with a strong vinegar-like odor	Grey metal, odorless	White odorless crystal
Flashpoint:	40 °C	N/A	N/A
Autoignition Temp.:	427 °C	N/A	N/A

Material Safety Data Sheet

Section III – Physical Hazards

Potential for fire and explosion: The electrolyte in the Class A-2C Micro-Fuel Cells is not flammable. There are no fire or explosion hazards associated with Class A-2C cells.

Potential for reactivity: The sensors are stable under normal conditions of use. Avoid contact between the sensor electrolyte and strong acids and oxidizing agents.

Section IV – Health Hazard Data

Primary route of entry:	Ingestion, eye/skin contact	
Exposure limits:	OSHA PEL	ACGIH TLV
Lead (Pb):	0.05 mg/cu.m.	0.15 mg/cu.m.
Acetic Acid (HC ₂ H ₃ O ₂):	10 ppm (TWA)	10 ppm (TWA) 15 ppm (STEL)
Potassium Acetate (KC ₂ H ₃ O ₂):	N/A	N/A

Effects of overexposure

Ingestion: The electrolyte could be harmful or fatal if swallowed.

HC₂H₃O₂ Oral LD50 (RAT) = 3310 mg/kg

KC₂H₃O₂ Oral LD50 (RAT) = 3.25 g/kg

Eye: The electrolyte is corrosive; eye contact could result in permanent loss of vision.

Dermal: The electrolyte is corrosive; skin contact could result in a chemical burn.

Inhalation: Liquid inhalation is unlikely.

Signs/symptoms of exposure: Contact with skin or eyes will cause a burning sensation and/or feel soapy or slippery to touch.

Medical conditions

aggravated by exposure: Persons with pre-existing skin disorders or eye problems, or impaired respiratory function may be more susceptible to the effects of these substances.

Carcinogenicity: NTP Annual Report on Carcinogens: Not listed

LARC Monographs: Not listed

OSHA: Not listed

Other health hazards: Lead is listed as a chemical known to the State of California to cause birth defects or other reproductive harm. As the cell is used, lead acetate is formed in the electrolyte. Lead acetate is listed as a chemical known to the State of California to cause cancer.

Material Safety Data Sheet

Section V – Emergency and First Aid Procedures

- Eye Contact:** Flush eyes with water for at least 15 minutes and get immediate medical attention.
- Skin Contact:** Wash affected area with plenty of water and remove contaminated clothing. If burning persists, seek medical attention.
- Ingestion:** Give plenty of cold water. Do not induce vomiting. Seek medical attention. Do not administer liquids to an unconscious person.
- Inhalation:** Liquid inhalation is unlikely.

Section VI – Handling Information

NOTE: The oxygen sensors are sealed, and under normal circumstances, the contents of the sensors do not present a health hazard. The following information is given as a guide in the event that a cell leaks.

- Hygienic Practices:** Wash hands after handling.
- Protective clothing:** Rubber gloves, chemical splash goggles.
- Clean-up procedures:** Wipe down the area several times with a wet paper towel. Use a fresh towel each time.

Protective measures

during cell replacement: Before opening the bag containing the sensor cell, check the sensor cell for leakage. If the sensor cell leaks, do not open the bag. If there is liquid around the cell while in the instrument, put on gloves and eye protection before removing the cell.

- Disposal:** Should be in accordance with all applicable state, local and federal regulations.

NOTE: The above information is derived from the MSDS provided by the suppliers. The information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. Teledyne Electronic Technologies/ Analytical Instruments shall not be held liable for any damage resulting from handling or from contact with the above product.