SECTION I - PRODUCT IDENTIFICATION

Manufacturer's Name:	Maxtec, Inc.
Address	6526 South Cottonwood Street, Salt Lake City, Utah 84107
Telephone	(801) 266-5300 (800)748-5355
Date Prepared	September 3, 1998
Date Revised	August 17, 2010
Trade Name	MAX-250 series, MAX-2, MAX-8, MAX-25 and MAX-50 Oxygen Sensors
Description	Weak acidic solution encapsulated in plastic housing.

SECTION II - HAZARDOUS INGREDIENTS OF SOLUTION

Lead Acetate, Trihydrate CAS # 6080-56-4
OSHA/PEL 0.05 mg/m3
ACGIH/TLV 0.15 mg/m3

TLV and PEL are for lead, inorganic dusts and fumes, as Pb
Note: Lead has been reported as causing cancer in laboratory animals, exercise due care.

Acetic Acid, Glacial CAS # 64-19-7
OSHA/PEL 10 PPM
ACGIH/TLV 10 PPM

NOTE: TLV and PEL are for concentrated (90% - 100%) Acidic Acid, actual solution is less than 50%.

Potassium Acetate CAS # 127-08-2

Lead CAS # 7439-92-1
OSHA/PEL 0.03mg/m3

Loctite 414

SECTION III - PHYSICAL & CHEMICAL CHARACTERISTICS

Boiling Point: Not Available		Specific Gravity: Not Available
Vapor Pressure: Not Available		Vapor Density: Not Available
Evaporation Rate: Not Available		Physical State: Liquid
Melting Point: Not Available	pH: 3.5 - 7.0	Flash Point: > 100 degrees C

Appearance & Odor: Colorless Liquid: Vinegar like odor

Extinguisher Media: Use water spray, alcohol foam, dry chemical or carbon dioxide

Special Fire Fighting Procedures: Respiratory protection should be used to avoid breathing fumes.

Unusual Fire & Explosion Hazards:

Lead acetate decomposes at boiling point and toxic gases are produced. Acetic acid vapors may flow along surfaces to distant ignition sources and flash back. Closed containers exposed to heat may explode.

SECTION IV - REACTIVITY DATA OF SOLUTION

Stability	Stable
Hazardous Polymerization:	Will not occur
Conditions to Avoid:	Heat, flame, other sources of ignition
Incompatibles:	Strong acids, strong bases, strong oxidizing agents.
Decomposition Products:	Lead fumes, carbon monoxide, carbon dioxide.

SECTION V - HEALTH HAZARD DATA OF SOLUTION

Lead Acetate Component	Data is for lead, inorganic dusts and fumes as Pb
(TLV/TWA):	0.15 mg/m3
STEL:	Not Established
PEL:	0.05 mg/m3
Toxicity:	Intraperitioneal Rate LD50 for Lead Acetate Trihydrate is 200 mg/Kg
Carginogenicity:	This substance is listed as a NTP anticipated human carcinogen and an IARC animal carcinogen.
Reproductive Effects:	None identified

Effects of Overexposure:

INHALATION:	Tightness and pain in chest, coughing, difficult breathing.
SKIN CONTACT:	Irritation.
EYE CONTACT:	Irritation.
SKIN ABSORPTION:	May be harmful.
INGESTION:	Is harmful and may be fatal, headache, nausea, vomiting, dizziness, gastrointestinal irritation.
CHRONIC EFFECTS:	Anemia, kidney damage, blurred vision, lead build-up in the central nervous system.
Target Organs:	GI tract, central nervous system, kidneys, blood, gingival tissue.
Medical Conditions Generally Aggravated by Exposure:	None identified.
Primary Routes of Entry:	Ingestion, inhalation, eye contact, skin contact, absorption.

Emergency and First Aid Procedures:

INGESTION:	**CALL A PHYSICIAN.** Give large amounts of water.
INHALATION:	If inhaled, remove to fresh air.
SKIN CONTACT:	In case of contact, flush with water for at least 15 minutes.
EYE CONTACT:	In case of contact, flush with water for at least 15 minutes.

SECTION V - HEALTH HAZARD DATA OF SOLUTION cont'd

Acetic Acid	Data is for concentrated acid.
Threshold Limit value (TLV/TWA)	25 mg/m3
Short term exposure limit (STEL)	37 mg/m3
Permissible exposure limit (PEL)	25 mg/m3

Toxicity:

Oral rate LD50 for acetic acid:	3310 mg/kg
Intravenous mouse LD50 for acetic acid:	525 mg/kg
Skin rabbit LD50 for acetic acid:	1060 mg/kg
Inhalation mouse LD50 for acetic acid:	5620 mg/kg
Carginogenicity NTP:	No
IARC	No
Z List:	No
OSHA Reg:	No

Carginogenicity:	None identified
Reproductive Effects:	None identified

Effects of Overexposure:

INHALATION:	Severe irritation or burns of respiratory system
SKIN CONTACT:	Severe burns, may cause dermatitis
EYE CONTACT:	Severe burns, permanent eye damage.
SKIN ABSORPTION:	None identified
INGESTION:	Burns to mouth and throat, nausea, vomiting, gastrointestinal irritation, diarrhea, shock, may be fatal
CHRONIC EFFECTS:	Lung damage, teeth damage
Target Organs:	Respiratory system, eyes, skin, teeth, lungs.
Medical Conditions Generally Aggravated by Exposure:	Respiratory system disease, skin disorders.
Primary Routes of Entry:	Inhalation, ingestion, skin contact, eye contact.

Emergency and First Aid Procedures:

INGESTION:	**CALL A PHYSICIAN.** Give large amounts of water.
INHALATION:	If inhaled, remove to fresh air.
SKIN CONTACT:	Immediately flush skin with plenty of water for at least 15 minutes.
EYE CONTACT:	Immediately flush with plenty of water for at least 15 minutes.

SECTION VI - SPILL AND DISPOSAL PROCEDURES

NOTE: The 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.

Steps to be taken in the event of a spill or discharge:

Wear respiratory protection and full protective clothing
Neutralize spill with soda ash or lime
Carefully place material into clean, dry container and cover.
Flush spill area with water.

Disposal Procedure:

Dispose in accordance with all applicable federal, state and local environmental regulations, with regards to lead or lead acetate.

EPA Hazardous Waste Numbers:

Lead	D008
Lead Acetate	U144 (Toxic Waste)
Acetic Acid, Glacial	D001, D002 (Ignitable, Waste)

DOT Information

RQ Hazardous Waste Solid N.O.S. (Lead), 9, UN3077
PG III
Follow all Federal, State and Local regulations.

SECTION VII - TRANSPORT INFORMATION

U.S. DOT/ IATA Information:

Maxtec weak acid sensors are not subject to the full requirements of 49 CFR § 173.136, 203 and 242, which cover UN2790 materials with Acetic acid solutions with more than 10% and less than 50% acid by mass, because they meet the exceptions criteria in 49 CFR § 173.154(b) Limited quantities: "For corrosive materials in Packing Group III, in inner packagings not over 5.0 L (1.3 gallons) net capacity each for liquids, or not over 5.0 kg (11 lbs) net capacity each for solids, and packed in strong outer packagings." Specifically, they are exempted from the labeling requirements 49 CFR § 172.400 and the specification packaging requirements 49 CFR § 178.

Maxtec weak acid sensors are not subject to the full requirements of 49 CFR § 173.140, 213 and 240, which cover UN3077 Environmentally hazardous substances, solid, n.o.s., because they meet the exceptions criteria in 49 CFR § 173.155(b) Limited quantities: "For solids, inner packagings not over 5.0 kg (11 pounds) net capacity each, packed in strong outer packagings." Specifically, they are exempted from the labeling requirements 49 CFR § 172.400 and the specification packaging requirements 49 CFR § 178.

SECTION VIII - ENGINEERING AND WORK PRACTICES CONTROLS

VENTILATION:	Use general or local exhaust ventilation to meet TLV requirements.
RESPIRATORY PROTECTION:	Respiratory protection required if airborne concentration exceeds TLV.
EYE/SKIN PROTECTION:	Safety goggles, uniform, apron, neoprene gloves are recommended.

Protective measures during cell replacement:

Before opening the packaging containing the sensor cell, check the sensor cell for leakage. If the sensor cell leaks, do not open the container. If there is liquid around the cell while in the instrument, use the protection listed above in this section.

SECTION IX - STORAGE AND HANDLING PRECAUTIONS

Storage Requirements: Store in a cool, well-ventilated area.

Per Manufacture Specification.

NOTE: The above data is based on tests and experience which Maxtec, Inc. believes reliable and are supplied for information purposes only. Maxtec, Inc. disclaims any liability for damage or injury which results for the use of the data and nothing contained there in shall constitute a guarantee, warranty (including warranty of merchant ability) or representation (including freedom from patent liability) by Maxtec, Inc. with respect to the data, the product described, or their use for any specific purpose, even if that purpose is known to Maxtec, Inc.