



MATERIAL SAFETY DATA SHEET

PRODUCT NAME: LERASEPT™ PAA

PAGE: 01

SECTION 01 - MATERIAL IDENTIFICATION

PRODUCT NAME: LERASEPT™ PAA
CAS CHEMICAL NAME: Peracetic Acid
SYNONYMS: Peroxyacetic Acid
INTENDED USAGE: Cleaner, bleaching agent, catalyst
DATE PREPARED: February 11, 2004
LAST REVISION: February 11, 2004

CHEMICAL EMERGENCY RESPONSE NUMBER:
SPILL, LEAK, FIRE, EXPOSURE, OR ACCIDENT
CALL CHEMTREC (24 hr): 1-800-424-9300

SECTION 02 - HAZARDOUS INGREDIENTS

CAS NUMBER AND CHEMICAL NAME	%	ACGIH TWA PPM	ACGIH TWA MG/M ³	ACGIH STEL PPM	ACGIH STEL MG/M ³
07722-84-1 Hydrogen Peroxide	<31	1	1.4	N/E	N/E
00079-21-0 Peracetic Acid	<16	N/E	N/E	N/E	N/E
00064-19-7 Acetic Acid	<16	10	25	15	37
02809-21-4 Phosphonic Acid	1	N/E	N/E	N/E	N/E

N/E = Not established <> S = Skin <> N/A = Not applicable <> C = Ceiling

MATERIAL SAFETY DATA SHEET

PRODUCT NAME: LERASEPT™ PAA

PAGE: 02

SECTION 03 - HEALTH HAZARDS

EMERGENCY OVERVIEW NFPA RATING

HEALTH - 3 FLAMMABILITY - 2 REACTIVITY - 4 OX

Personnel Protective Equipment (see Section 13): X

Strong Oxidizer, Corrosive. Liquid and vapors cause severe, long-lasting chemical burns to eyes and skin. Harmful if inhaled. Harmful or fatal if ingested. May generate explosive pressure upon heating.

ROUTES OF EXPOSURE:

Ingestion
Eyes
Skin Absorption
Inhalation

HEALTH HAZARDS:

Causes severe, long-lasting burns to eyes and skin and may destroy the tissue. Harmful when inhaled. Harmful or fatal when ingested.

SIGNS AND SYMPTOMS OF EXPOSURE (ACUTE EFFECTS):

Eye contact: Contact with eyes results in eye corrosion with corneal or conjunctival ulceration with possible irreversible eye damage, including loss of vision. Symptoms may include stinging, severe pain, redness, tearing, and bleaching. Vapors may cause severe irritation or possible burns to the eyes with possible irreversible eye damage.

Skin contact: Contact with skin causes severe, long-lasting chemical burns and ulceration and may destroy the tissue. Symptoms may include bleaching, itching, severe pain, or developing rash. Higher or prolonged exposure may result in ulceration and severe burns and may destroy the tissue.

Inhalation: Overexposure by inhalation may cause severe irritation and possible severe chemical burns to the upper and lower respiratory tract and breathing difficulties. Symptoms may include irritation and pain in throat, mouth, and nose. Other symptoms may include coughing, choking, and nausea.

Ingestion: Ingestion causes immediate pain and severe burns to the mouth, throat, esophagus, and the gastrointestinal tract. Symptoms may include upper abdominal pain, "heartburn", nausea, vomiting, and diarrhea. "Coffee grounds" vomits and black tarry stools may occur as a result of gastrointestinal tract bleeding. Additional effects from overexposure include red blood cell destruction or gas embolism. Gross overexposure by inhalation or ingestion may be fatal.

MATERIAL SAFETY DATA SHEET

PRODUCT NAME: LERASEPT™ PAA

PAGE: 03

SIGNS AND SYMPTOMS OF EXPOSURE (LONG TERM EFFECTS):

Repeated or prolonged inhalation of vapors may cause severe, long-lasting irritation or burns to the upper and lower respiratory tract. Pneumonia and/or pulmonary edema may develop, which may be fatal. Repeated ingestion causes severe, long-lasting burns to the mucous membranes and all contacted tissue with possible discoloration and destruction of the tissue and may be fatal. Swallowing and speech may be difficult and then almost impossible. Repeated or prolonged eye contact may cause loss of vision with symptoms including strong pain, tearing, and redness. Repeated or prolonged skin contact may destroy the tissue with symptoms including bleaching, strong pain, and itching.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE:

Individuals with preexisting skin, eye, and/or respiratory diseases may have increased susceptibility to the effects of product exposure.

CARCINOGENICITY:

None of the components in this material are listed by the IARC, NTP, OSHA, or ACGIH as a carcinogen.

ACUTE TOXICITY EFFECTS DATA:

Inhalation:	LC ₅₀ , one hour, rat, 590 mg/m ³ (12% solution).
Oral:	LD ₅₀ rat, 652 mg/kg (12% solution).
Dermal:	LD ₅₀ , rabbit, 1957 mg/kg (12% solution).
Irritation:	<ul style="list-style-type: none">• Rabbit, serious damage (eyes) (4% solution).• Rabbit, corrosive (skin).• Inhalation, rat, Respiratory irritation (RD₅₀), 22 to 24 mg/m³.

AQUATIC TOXICITY:

- Fish, *Salmo gairdneri*, LC₅₀, 96 hours, 13 mg/L.
- Conditions: Fresh water, 15% peracetic acid solution.
 - Fish, *Salmo gairdneri*, NOEC, pigmentation, < 10 mg/L.
 - Fish, *Pleuronectes platessa*, LC₅₀, 96 hours, 89.1 mg/L.
 - Conditions: Salt water, 12% peracetic acid solution.
 - Fish, *Pleuronectes platessa*, NOEC, 56 mg/L.
 - Crustaceans, *Daphnia magna*, EC₅₀, 48 hours, 3.3 mg/L.
 - Conditions: Fresh water, 15% peracetic acid solution.
 - Crustaceans, *Daphnia magna*, NOEC, 1 mg/L.
 - Crustaceans, *Crangon crangon*, EC₅₀, 96 hours, 126.8 mg/L.
 - Conditions: Salt water, 12% peracetic acid solution.
 - Crustaceans, *Crangon crangon*, NOEC, 56 mg/L.
 - Algae, various species, EC₅₀, 72 to 96 hours, 0.7 to 16 mg/L.
 - Bacteria, *Pseudomonas aeruginosa*, EC, 5 minutes, 5 mg/L.

OTHER ACUTE EFFECTS:

Eyes: Severely irritating/corrosive (rabbit) (17% Peracetic Acid)
Skin: Severely irritating/corrosive (rabbit) (17% Peracetic Acid)

M A T E R I A L S A F E T Y D A T A S H E E T

PRODUCT NAME: LERASEPT™ PAA

PAGE: 04

SECTION 04 - FIRST AID

EYE CONTACT: Immediately flush eyes with water for at least 15 minutes, lifting lower and upper eyelids occasionally. In the case of difficulty opening the lids, administer an analgesic eye wash (e.g. oxybuprocaine). **Seek immediate medical attention, preferred eye specialist, as soon as possible.** Continue flushing with water for additional 15 minutes, if physician or ambulance is not immediately available.

SKIN CONTACT: Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Discard clothing. Get medical attention.

INHALATION: Remove from contaminated atmosphere. If breathing has ceased, clear the victim's airway and start mouth-to-mouth artificial respiration, which may be supplemented by the use of a bag-mask respirator, or a manually-triggered, oxygen supply capable of delivering 1 liter/second or more. If the victim is breathing, oxygen may be administered from a demand-type or continuous-flow inhalator, preferably with a physician's advice. Get medical attention immediately.

INGESTION: Give victim large quantities of water, but do not induce vomiting. If vomiting occurs, administer additional water. Do not attempt to induce vomiting or give anything by mouth to an unconscious person. **Get medical attention immediately.**

Medical Treatment/Notes to Physician:

Inhalation:

- Pulmonary resuscitation (oxygen therapy).
- If necessary, tracheal intubation.
- Prevention or treatment of shock, pulmonary edema and bacterial secondary infection.

Eyes:

- On the advice of the ophthalmologist.
- Medical surveillance for one to two weeks.

Skin: Usual treatment for burns.

Ingestion:

- Oxygen therapy via intra-tracheal intubation.
- If necessary, tracheotomy.
- Placement of gastric catheter to release stomach gases.
- Avoid gastric washing (risk of perforation).
- In cases of intense pain: inject an I.M. morphomimetic analgesic drug (e.g. piritramide) before taking to hospital.
- Prevention or treatment of shock and pulmonary edema.
- Urgent digestive endoscope with aspiration of the product.
- Treatment of gastrointestinal tract burns and resulting effects.

MATERIAL SAFETY DATA SHEET

PRODUCT NAME: LERASEPT™ PAA

PAGE: 05

SECTION 05 - FIRE AND EXPLOSION DATA

CHARACTERISTICS:

Flash Point: >100° C (>212° F)
Upper Explosion Limit (UEL): N/A
Lower Explosion Limit (LEL): N/A
Autoignition Temperature: ~265° C (509° F) DIN 51784
Flash Point Method(s): CC
Fire Hazard Classification: 2
(OSHA/NFPA)

TEST METHODS:

EXTINGUISHING MEDIA:

If involved in a fire, use water from safe distance. Cool exposed containers with water spray.

SPECIAL FIRE FIGHTING PROCEDURES:

For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self contained breathing apparatus and full protective clothing. See Section 6 "REACTIVITY HAZARD DATA" for unusual decomposition products.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

Moderately flammable. When heated above the SADT, the liquid decomposes and releases rapidly flammable vapors which, when mixed with air, may burn or be explosive. Fine mists or sprays of this material may be flammable below the normal flash point. Oxygen released from Peracetic Acid and Hydrogen Peroxide may force organic or Hydrogen vapors into an explosive range. Follow appropriate NFPA codes.

SECTION 06 - REACTIVITY HAZARD DATA

CHEMICAL STABILITY:

Stable [X*] Unstable []

Stable under normal conditions of use with slow gas release.

*SADT: Passes 49° C (120° F); fails 60° C (140° F)

CONDITIONS TO AVOID (If unstable):

Unstable with heat or contamination; liberation of Oxygen gas may result in dangerous pressures (See "Decomposition" below).

MAJOR CONTAMINANTS CONTRIBUTING TO INSTABILITY:

Dirt, alkalis, and heavy metals such as iron, copper, chromium, and cobalt.

INCOMPATIBILITY (Materials to avoid):

Peracetic Acid is a strong oxidizer and incompatible with most materials, especially Acetic anhydrides, reducing agents, and organic materials such as terpenes and alcohol.

HAZARDOUS DECOMPOSITION PRODUCTS (from burning, heating, or reaction with other materials):

Acetic Acid, Methane, and Oxygen which supports combustion. Contamination or heat may cause self-accelerating exothermic decomposition with Oxygen gas and steam release that can cause dangerous pressures. May react dangerously with rust, dust, dirt, iron, copper, heavy metals, or their salts (such as Mercuric oxide or chloride), alkalis, and with organic materials (especially Vinyl monomers).

MATERIAL SAFETY DATA SHEET

PRODUCT NAME: LERASEPT™ PAA

PAGE: 06

HAZARDOUS POLYMERIZATION:

Will not occur.

CONDITIONS TO AVOID (if may occur):

N/A

NFPA REACTIVITY RATING: 4

SECTION 07 - SPILL, LEAK, AND DISPOSAL INFORMATION

CLEAN UP PROCEDURES:

SMALL SPILLS:

LARGE SPILLS:

Confine spill area. Stop leak if this can be done without danger. Contain liquid spills using a barrier of non-flammable inert materials such as chemical absorbent, sand, or by diking the area. Undiluted material must not enter confined spaces or drains. Spilled material should be picked up with non-flammable chemical absorbent. Transfer absorbed material into a properly marked, closed, and vented container. If non-flammable absorbent is not available, flood spill area with excess water and drain to a self-contained chemical sewer or waste water treatment system. Prevent spilled product or contaminated wash water from entering drinking water supplies or streams. Undiluted material must not enter city sewer, streams, or waterways. Peracetic Acid will decompose to Oxygen, water, and Acetic Acid. After decomposition, adjust pH value to accepted values prior to disposal. Contact local regulatory authorities prior to discharge as laws may vary upon locations.

OTHER EMERGENCY ADVICE:

Isolate or enclose the area of spill or leak. Shut off ignition sources including flames, smoking, flares, or spark producing tools. Keep combustible and organic materials away. Review FIRE AND EXPLOSION HAZARDS and PROTECTIVE MEASURES before proceeding with clean up. All clean up personnel should wear recommended PERSONAL PROTECTIVE EQUIPMENT during clean up.

WASTE DISPOSALS:

Dilute with at least twenty volumes of water and allow Peracetic Acid solution to completely decompose followed by discharge into a suitable treatment system in accordance with all local, state, and federal laws, rules, regulations, standards, and other requirements. Acceptable methods may vary by location. Contact appropriate regulatory agencies prior to disposal. Care must be taken when using or disposing of chemical materials and/or their containers to prevent environmental contamination. It is the users' duty to dispose of the chemical materials and/or their containers in compliance with the Clean Air Act, the Clean Water Act, the Resource Conservation And Recovery Act, as well as any other relevant federal, state, or local laws/regulations regarding disposal.

REPORTABLE QUANTITY:

CERCLA Hazardous Substance (40CFR Part 302)

Listed: Yes (Acetic Acid), Reportable Quantity 5000 lbs

Unlisted Substance: Yes, Reportable Quantity 100 lbs

Characteristic: Ignitability (D001), Corrosivity (D002)

SARA Title III Sec. 302/303 Extremely Hazardous Substances (40 CFR355):

- Reportable quantity - 500 lbs.
- Threshold planning quantity - 5,000 lbs.

SARA Title III Sec. 311/312 (40 CFR 370):

Hazard Category Yes, • Fire Hazard, Immediate Health hazard

- Threshold planning quantity - 500 lbs

MATERIAL SAFETY DATA SHEET

PRODUCT NAME: LERASEPT™ PAA

PAGE: 07

SECTION 08 - PROTECTIVE MEASURES

EYE PROTECTION:

Wear chemical splash goggles or full face shield. In addition, wear chemical splash goggles/full-length face shield combination, where the possibility of eye and face contact due to splashing or spraying of material exists. Contact lenses should not be worn when working with hazardous materials.

SKIN PROTECTION:

Wear impervious protective clothing, including boots, gloves, apron, or coveralls to prevent skin contact.

RESPIRATORY PROTECTION:

Avoid breathing vapors and/or mists. Make sure there is adequate ventilation. Where adequate ventilation can not be provided, wear NIOSH/MSHA approved respiratory protection.

WORKING AND HYGIENIC PRACTICES:

Provide readily accessible showers and eye wash stations. Wash at the end of each working and before eating, smoking, or using the toilet.

SECTION 09 - STORAGE AND HANDLING

STORAGE:

Store product only in properly vented shipping containers in a cool, dry, and well ventilated area. Do not block vent. Do not replace original ventilation cap with substitute. Do not store on wooden pallets. Do not store where contact with incompatible materials could occur, even with a spill. Do not add any other product to container. Never return unused product into container, instead dilute with plenty of water and discard. Triple-rinse empty containers thoroughly with clean water before discarding. Protect container from physical damage and from direct sunlight.

Avoid storage temperatures exceeding 30° C (88° F).

Keep container tightly closed when not in use.

KEEP OUT OF REACH OF CHILDREN!

HANDLING:

When handling, wear appropriate protective clothing (See PROTECTIVE MEASURES). Never touch eyes and/or face with hands or gloves that may be contaminated with product. Don not eat, drink, or smoke during handling.

OTHER PRECAUTIONS:

Carefully read all instructions on product label and Technical Data Sheet before handling or using this product. Make sure that all engineering and personal protective equipment is in working order.

MATERIAL SAFETY DATA SHEET

PRODUCT NAME: LERASEPT™ PAA

PAGE: 08

SECTION 10 - PHYSICAL AND CHEMICAL PROPERTIES

FORM, COLOR, AND APPEARANCE:

PHYSICAL FORM: Liquid
COLOR: Clear, colorless
ODOR: Sharp, pungent

TYPICAL PHYSICAL DATA:

pH (@ 1% solution): ~2.0
VAPOR PRESSURE @ 20° C (mbar): ~ 25
VAPOR DENSITY (Air = 1): ~0.9
BOILING POINT: Decomposes
FREEZING/MELTING POINT: ~58° F (-50° C)
SOLUBILITY IN WATER: Complete
SPECIFIC GRAVITY @ 20° C (g/cm³): 1.14
DENSITY @ 68° F (lbs/gal): 9.50
EVAPORATION RATE (Butylacetate = 1): ~1.08

SECTION 11 - TRANSPORTATION INFORMATION

Mode	DOT	IMDG	IATA
UN Number	3109	3109	3109
Class (Subsidiary)	5.2 (8)	5.2 (8)	5.2
Proper Shipping Name	Organic peroxide, type F, liquid (Peracetic Acid 15%)	Organic peroxide, type F, liquid (Peracetic Acid 15%)	Organic peroxide, type F, liquid (Peracetic Acid 15%)
Hazard label (Subsidiary)	Organic Peroxide (Corrosive)	Organic Peroxide (Corrosive)	Organic Peroxide (Corrosive)
Placard (Subsidiary)	5.2 (8)	5.2 (8)	
Packing Group	II	II	II
ERG Info	ERG 145	EmS: 5.2-01	ERG Code: 5L

SECTION 12 - FEDERAL REGULATIONS

National Regulations (US):

TSCA Inventory 8(b): Yes

SARA Title III Sec. 302/303 Extremely Hazardous Substances (40 CFR355):

- Reportable quantity - 500 lbs.
- Threshold planning quantity - 5,000 lbs.

SARA Title III Sec. 311/312 (40 CFR 370):

Hazard Category Yes, • Fire Hazard, Immediate Health hazard
• Threshold planning quantity - 500 lbs

SARA Title III Sec. 313 Toxic Chemical Emissions Reporting (40 CFR 372): Yes

MATERIAL SAFETY DATA SHEET

PRODUCT NAME: LERASEPT™ PAA

PAGE: 09

CERCLA Hazardous Substance (40CFR Part 302)

Listed: Yes (Acetic Acid), Reportable Quantity 5000 lbs

Unlisted Substance: Yes, Reportable Quantity 100 lbs

Characteristic: Ignitability (D001), Corrosivity (D002)

State Component Listing:

State Comment: No Data.

National Regulations (Canada) Canadian DSL Registration: DSL

WHMIS Classification: C Oxidizing material
E Corrosive
F Dangerously reactive material

Labeling according to Directive 1999/45/EC.

Symbols O Oxidizing
C Corrosive

Phrases R 7 May cause Fire
20/21/22 Harmful by inhalation, in contact with skin and if swallowed.
35 Causes severe burns

Phrases S 3/7 Keep container tightly closed in cool place
14.6 Keep away from combustible materials, acids, reducing agents and metal salts.
36/37/39 Wear suitable protective clothing, gloves, and eye/face protection.
45 IN case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

SECTION 13 - LETTER DESIGNATION OF PERSONAL PROTECTIVE EQUIPMENT

Safety Glasses	A
Safety Glasses, Gloves	B
Safety Glasses, Gloves, Synthetic Apron	C
Face Shield, Gloves, Synthetic Apron	D
Safety Glasses, Gloves, Dust Respirator	E
Safety Glasses, Gloves, Synthetic Apron, Dust Respirator	F
Safety Glasses, Gloves, Vapor Respirator	G
Splash Goggles, Gloves, Synthetic Apron, Vapor Respirator	H
Safety Glasses, Gloves, Combination Dust and Vapor Respirator	I
Safety Glasses, Gloves, Synthetic Apron, Combination Dust and Vapor Respirator	J
Airline Hood or Mask, Gloves, Full Protective Suit, Boots	K
Situations Requiring Specialized Handling	X