MATERIAL IDENTIFICATION

LEAD ACETATE & LEAD ACETATE TRIHYDRATE

MSDS NUMBER : DU003014

Revision Date : 30-Mar-92
Date Printed : 09-Mar-93

MANUFACTURER/DISTRIBUTOR
MALLINCKRODT
A. D. MACKAY, INC.

PHONE NUMBERS
TRANSPORT EMERGENCY : CHEMTREC: 1-800-424-9300
MEDICAL EMERGENCY : 1-800-441-3637

TRADE NAMES / SYNONYMS
LEAD ACETATE (II) TRIHYDRATE
ACETIC ACID LEAD (II) SALT, TRIHYDRATE
SUGAR OF LEAD
ACETIC ACID, LEAD(2+) SALT
ACETIC ACID, LEAD SALT
LEAD ACETATE TRIHYDRATE
LEAD ACETATE

CAS NAME : ACETIC ACID LEAD(2+) SALT
FORMULA : Pb(C2H3O2)3H2O
MOLECULAR WEIGHT : 379.33
TSCA INVENTORY STATUS : Reported/Included

COMPONENTS

Material	CAS Number	%
*LEAD ACETATE	301-04-2	100
ALSO:		
*LEAD ACETATE TRIHYDRATE	6080-56-4	100

* Regulated as a Toxic Chemical under Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR part 372.

PHYSICAL DATA

Boiling Point : 93 to 100 deg C (200 to 212 deg F) at 760 mm Hg.
Melting Point : 75 deg C (157 deg F) at 760 mm Hg. Rapid Heat
Water Solubility : 50-60 WT %
pH : 6.0 at 25
Odor : Slightly acetic
Form : Crystalline, granules, flakes
Color : Colorless or white
Specific Gravity : 2.55 at 20 deg C (68 deg F)

HAZARDOUS REACTIVITY

Instability	: Stable at normal temperatures and storage conditions.
Incompatibility	: Incompatible with bromates, phenyl chloral hydrate, sulfides and acids.
Decomposition	: Decomposition temperature 93 to 200 deg C (199 to 392 deg F). Hazardous gases/vapors produced are carbon monoxide, lead oxide.
Polymerization	: Polymerization will not occur.

FIRE AND EXPLOSION DATA

Non-flammable.

FIRE AND EXPLOSION HAZARDS

Like most organic powders or crystals, under severe dusting conditions, this material may form explosive mixtures in air. Hazardous gases/vapors produced in fire are acetic acid, carbon monoxide, lead oxide.

EXTINGUISHING MEDIA

Use media appropriate for surrounding material.

SPECIAL FIRE FIGHTING INSTRUCTIONS

Keep personnel removed & upwind of fire. Wear self-contained breathing apparatus. Wear full protective equipment.

HEALTH HAZARD INFORMATION

Lead overexposure may cause anemia, fatigue, nervousness, anxiety, sleeplessness, mood changes, headache, kidney effects, increased blood pressure, heart irregularities, muscular weakness, incoordination, suppression of the immune system, loss of apetite, upset stomach, diarrhea, constipation and colic. High exposures may cause tremors, hallucinations, delerium, mania, convulsions, paralysis, coma and death. Lead and lead compounds may cause permanent injury to the unborn children of exposed pregnant women. Ingestion may cause upper abdominal pain, "heart burn", nausea, vomiting and diarrhea.

ANIMAL DATA

Oral LD50: 7980 mg/kg in rats for trihydrate

Ingestion: The effects in animals from single, non-lethal doses include weakness and weight loss. Near lethal doses administered as a 40% aqueous solution caused severe irritation of the gastrointestinal tract. Testing in animals in which repeated doses were administered showed

(HEALTH HAZARD INFORMATION - Continued)

dysfunction of the blood-forming system including hematology changes and anemia, kidney damage and abnormal kidney function, pathological changes to the spleen, nervous system damage including impairment of nerve conduction and behavioral changes, increased blood pressure and heartbeat irregularities, testicular atrophy, abnormal sperm production, abnormal hormone levels, irregular estrous cycles, and reduced immune system function. Repeated high doses have also been reported to cause pathological changes in the liver.

Studies suggest that lead acetate does produce kidney tumors in animals following long-term, high-level exposure. Tests in animals indicate that the compound may have developmental toxicity, with data suggesting that the fetus is as sensitive, and maybe more sensitive to the effects of lead than the maternal animals. Lead compounds do not appear to cause malformations; however, lead has caused developmental delays, and neurobehavioral abnormalities in offspring of animals exposed during pregnancy. Tests in animals indicate that lead acetate may have reproductive toxicity.

Tests for genetic toxicity in bacterial systems have yielded consistently negative results. In mammalian cell cultures and in animals tests have given conflicting results; however, there is indication that lead may cause genetic damage. It has not been tested for heritable genetic damage.

HUMAN HEALTH EFFECTS

Skin contact may include skin irritation with discomfort or rash. There are no reports of human sensitization. Significant skin permeation, and systemic toxicity, after contact with lead acetate appears unlikely.

Eye contact may include eye irritation with discomfort, tearing, or blurring of vision. Lead acetate has caused corneal opacities (clouding of the eye) and lead encrustations, especially in individuals having previous damage to the eye surface.

Ingestion may include gastrointestinal irritation with upper abdominal pain, "heart burn", nausea, vomiting, and diarrhea. However, there may be no symptoms at all.

Symptoms of lead toxicity may occur following long-term exposure to lead compounds, or brief exposures to high levels by inhalation or ingestion. Blood lead concentrations represent an effective way to monitor an individual for exposure to lead. An early response to lead overexposure includes abnormal functioning of the blood-forming system or red blood cell destruction, possibly progressing to anemia. Early overt symptoms of lead overexposure may include

(HEALTH HAZARD INFORMATION - Continued)

fatigue, nervousness, anxiety, sleeplessness, mood changes, headache. Lead overexposure may also cause the following effects: abnormal kidney function as detected by laboratory tests, reduced urine volume or edema; elevation of blood pressure and cardiovascular alterations such as abnormalities in EKG or irregular heartbeats; damage to the nervous system with effects such as muscular weakness, palsy, and incoordination; suppression of the immune system with increased susceptibility to disease; gastrointestinal disturbances with loss of appetite, upset stomach, diarrhea, constipation, and sometimes colic. Long-term exposures may cause kidney disease or kidney failure.

Higher lead exposures may cause tremors, hallucination, which can progress to delerium, mania, convulsions, paralysis, coma and death.

Long-term, high-level exposure to lead compounds can interfere with the reproductive system of animals and possibly humans.

*DuPont considers lead and lead compounds to be a potential developmental toxin and states that a woman of childbearing potential should be warned of the risk to an unborn child in operations involving exposure to lead and lead compounds. An unborn child may be at risk of permanent injury from a pregnant woman's exposure to lead and lead compounds under conditions of exposure that would not be expected to cause adverse effects in the adult woman.

*As a guide to protect the unborn child, a woman of childbearing capability who might elect to work with lead or its compounds should be advised to avoid adding lead to her normal body burden as measured by blood lead levels. When background levels, as reflected by blood lead measurements for that geographic area, are significantly exceeded, the woman should be advised to consider other assignments that would not expose her to lead.

For others, while no one piece of evidence suggests significant health effects following exposure to lead resulting in blood-lead levels of 50 ug/dL, the data taken together suggest a prudent practice whould be to have a program to reduce blood-lead levels to 35 ug/dL or below.

No adequate epidemiologic studies are available for lead acetate. However, there are reports in the literature suggesting association of high blood lead levels in some lead workers with increased blood pressure, ECG abnormalities, colo-rectal cancer and increased chronic renal disease.

Individuals with preexisting diseases of the nervous system, cardiovascular system, kidneys, or blood-forming system may

(HEALTH HAZARD INFORMATION - Continued)

have increased susceptibility to the toxicity of excessive exposures.

CARCINOGENICITY

The following components are listed by IARC, NTP, OSHA, or ACGIH as carcinogens. A 'P' indicates a Proposed Carcinogen.

Material	IARC	NTP	OSHA	ACGIH
LEAD ACETATE		X		X
LEAD ACETATE TRIHYDRATE		X		X

APPLICABLE EXPOSURE LIMITS

LEAD ACETATE

AEL * (Du Pont): "See Human Health Effects Section"
TLV (ACGIH) : 0.15 mg/m3 - 8 Hr. TWA as Pb
PEL (OSHA) : 0.05 mg/m3 - 8 Hr. TWA as Pb
for > 8 Hrs. exposure, limit in mg/m3 = 0.4 divided by hours worked.

LEAD ACETATE TRIHYDRATE

AEL * (Du Pont): "See Human Health Effects Section"
TLV (ACGIH) : 0.15 mg/m3 - 8 Hr. TWA as Pb
PEL (OSHA) : 0.05 mg/m3 - 8 Hr. TWA as Pb
for > 8 Hrs. exposure, limit in mg/m3 = 0.4 divided by hours worked.

* AEL is Du Pont's Acceptable Exposure Limit. Where governmentally imposed occupational exposure limits which are lower than the AEL are in effect, such limits shall take precedence.

SAFETY PRECAUTIONS

Do not breathe dust. Avoid contact with eyes, skin, or clothing. Wash thoroughly after handling. Wash clothing after use.

FIRST AID

INHALATION

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

SKIN CONTACT

Flush skin with water after contact. Wash contaminated clothing before reuse.

EYE CONTACT

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Call a physician.

(FIRST AID - Continued)

INGESTION

If swallowed, immediately give 2 glasses of water and induce vomiting. Never give anything by mouth to an unconscious person. Call a physician.

PROTECTION INFORMATION

GENERALLY APPLICABLE CONTROL MEASURES AND PRECAUTIONS

Keep away from heat, sparks and flames. Keep container in a cool place. Keep container tightly closed. Avoid dust generation.

Use ventilation that is adequate to keep employee exposure to airborne concentrations below exposure limits.

PERSONAL PROTECTIVE EQUIPMENT

EYE/FACE PROTECTION

Wear safety glasses. Wear coverall chemical splash goggles, and face shield when the possibility exists for eye or face contact from airborne material.

RESPIRATORS

A NIOSH/MSHA approved air purifying respirator with a dust/mist/fume cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air purifying respirators is limited. Use a positive pressure air supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air purifying respirators may not provide adequate protection.

PROTECTIVE CLOTHING

Wear impervious clothing, such as gloves, apron, boots, or whole bodysuit as appropriate. No vendor recommendation on material of construction for protective clothing.

DISPOSAL INFORMATION

AQUATIC TOXICITY

96 Hr LC50: bluegill sunfish: 400 ppm

(DISPOSAL INFORMATION - Continued)

SPILL, LEAK, OR RELEASE

NOTE: Review FIRE AND EXPLOSION HAZARDS and SAFETY PRECAUTIONS before proceeding with clean up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean up.
Evacuate personnel, thoroughly ventilate area, use self-contained breathing apparatus. Remove source of heat, sparks, flame, impact, friction or electricity. Recover undamaged and minimally contaminated material for reuse or reclamation. Shovel or sweep up.
Superfund reportable discharge = 5000 lbs.

Damp or wet cleaning may be useful in supressing dust and for the removal of the last traces of spilled material.
Avoid raising dust.

WASTE DISPOSAL

Cleaned-up material is a RCRA Hazardous Waste. Treatment, storage, transportation and disposal must be in accordance with applicable Federal, State/Provincial, and Local regulations. Do not flush to surface water or sanitary sewer system.

EPA Hazardous Waste U144

STORAGE CONDITIONS

Store in well ventilated area. Store in cool place. Keep container tightly closed. Do not store or consume food, drink or tobacco in areas where they may become contaminated with this material.

Store in a cool, dry place. Store away from sources of ignition. Protect against physical damage.

TITLE III HAZARD CLASSIFICATIONS

Acute	: Yes
Chronic	: Yes
Fire	: No
Reactivity	: No
Pressure	: No

ADDITIONAL INFORMATION AND REFERENCES

Technical data, except health hazard information, based on Mallinckrodt MSDS dated 4/6/89, A. D. Mackay, Inc. MSDS dated 9/86.

The data in this Material Safety Data Sheet relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process.

Responsibility for MSDS : Du Pont
Corporate MSDS Office - HR
Barley Mill Plaza, P14-2150
Wilmington, DE 19880-0014
302-992-6704

End of MSDS