SAFETY DATA SHEET

Updated on 26/09/2024

1. Material Identification

Product Name : Lead acetate
Catalog Number : io-2554
CAS Number : 301-04-2
Identified uses : Laboratory chemicals, manufacture of chemical compounds
Company : Ionz

>> R&D Use only

2. Hazards Identification

GHS Classification:

Flammable liquid (category 2)
Acute toxicity, oral (Category 3)
Acute toxicity, dermal (Category 3)
Acute toxicity, inhalation (Category 3)
Specific target organ toxicity, single exposure (Category 1)

Pictogram(s)

GHS Hazard Statements

>> H302 (100%): Harmful if swallowed [Warning Acute toxicity, oral]

>> H332 (100%): Harmful if inhaled [Warning Acute toxicity, inhalation]

>> H360 (100%): May damage fertility or the unborn child [Danger Reproductive toxicity]

>> H373 (100%): May causes damage to organs through prolonged or repeated exposure [Warning Specific target organ toxicity, repeated exposure]

>> H400 (100%): Very toxic to aquatic life [Warning Hazardous to the aquatic environment, acute hazard]

>> H410 (100%): Very toxic to aquatic life with long lasting effects [Warning Hazardous to the aquatic environment, long-term hazard]

Precautionary Statement Codes

>> P203, P260, P261, P264, P270, P271, P273, P280, P301+P317, P304+P340, P317, P318, P319, P330, P391, P405, and P501

Note

>> Pictograms displayed are for 91.3% (379 of 415) of reports that indicate hazard statements. This chemical does not meet GHS hazard criteria for 8.7% (36 of 415) of reports.

Health Hazards:

>> Early symptoms of lead intoxication via inhalation or ingestion are most commonly gastrointestinal disorders, colic, constipation, etc.; weakness, which may go on to paralysis, chiefly of the extensor muscles of the wrists and less often of the ankles, is noticeable in the most serious cases. Ingestion of a large amount causes local irritation of the alimentary tract; pain, leg cramps, muscle weakness, paresthesias, depression, coma, and death may follow in 1 or 2 days. Contact with eyes causes irritation. (USCG, 1999)

ERG 2024, Guide 151 (Lead acetate)

>> Highly toxic, may be fatal if inhaled, ingested or absorbed through skin.

>> Avoid any skin contact.

>> Fire may produce irritating, corrosive and/or toxic gases.

>> Runoff from fire control or dilution water may be corrosive and/or toxic and cause environmental contamination.

>> Special Hazards of Combustion Products: Irritating acid fumes may be formed in fires. (USCG, 1999)

ERG 2024, Guide 151 (Lead acetate)

>> Non-combustible, substance itself does not burn but may decompose upon heating to produce corrosive and/or toxic fumes.

>> Containers may explode when heated.

>> Runoff may pollute waterways.

>> Not combustible. Gives off irritating or toxic fumes (or gases) in a fire. Finely dispersed particles form explosive mixtures in air.

3. Composition/Information On Ingredients

Chemical name : Lead acetate
CAS Number : 301-04-2
Molecular Formula : C4H6O4Pb
Molecular Weight : 325.0000 g/mol

4. First Aid Measures

First Aid:

>> EYES: First check the victim for contact lenses and remove if present. Flush victim's eyes with water or normal saline solution for 20 to 30 minutes while simultaneously calling a hospital or poison control center. Do not put any ointments, oils, or medication in the victim's eyes without specific instructions from a physician. IMMEDIATELY transport the victim after flushing eyes to a hospital even if no symptoms (such as redness or irritation) develop.

>> SKIN: IMMEDIATELY flood affected skin with water while removing and isolating all contaminated clothing. Gently wash all affected skin areas thoroughly with soap and water. IMMEDIATELY call a hospital or poison control center even if no symptoms (such as redness or irritation) develop. IMMEDIATELY transport the victim to a hospital for treatment after washing the affected areas.

>> INHALATION: IMMEDIATELY leave the contaminated area; take deep breaths of fresh air. IMMEDIATELY call a physician and be prepared to transport the victim to a hospital even if no symptoms (such as wheezing, coughing, shortness of breath, or burning in the mouth, throat, or chest) develop. Provide proper respiratory protection to rescuers entering an unknown atmosphere. Whenever possible, Self-Contained Breathing Apparatus (SCBA) should be used; if not available, use a level of protection greater than or equal to that advised under Protective Clothing.

>> INGESTION: Some heavy metals are VERY TOXIC POISONS, especially if their salts are very soluble in water (e.g., lead, chromium, mercury, bismuth, osmium, and arsenic). IMMEDIATELY call a hospital or poison control center and locate activated charcoal, egg whites, or milk in case the medical advisor recommends administering one of them. Also locate Ipecac syrup or a glass of salt water in case the medical advisor recommends inducing vomiting. Usually, this is NOT RECOMMENDED outside of a physician's care. If advice from a physician is not readily available and the victim is conscious and not convulsing, give the victim a glass of activated charcoal slurry in water or, if this is not available, a glass of milk, or beaten egg whites and IMMEDIATELY transport victim to a hospital. If the victim is convulsing or unconscious, do not give anything by mouth, assure that the victim's airway is open and lay the victim on his/her side with the head lower than the body. DO NOT INDUCE VOMITING. IMMEDIATELY transport the victim to a hospital.

>> OTHER: Since this chemical is a known or suspected carcinogen you should contact a physician for advice regarding the possible long term health effects and potential recommendation for medical monitoring. Recommendations from the physician will depend upon the specific compound, its chemical, physical and toxicity properties, the exposure level, length of exposure, and the route of exposure. (NTP, 1992)

ERG 2024, Guide 151 (Lead acetate)

>> General First Aid:

>> Call 911 or emergency medical service.

>> Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and avoid contamination.

>> Move victim to fresh air if it can be done safely.

>> Administer oxygen if breathing is difficult.

>> If victim is not breathing:

>> DO NOT perform mouth-to-mouth resuscitation; the victim may have ingestedor inhaled the substance.

>> If equipped and pulse detected, wash face and mouth, then give artificial respiration using a proper respiratory medical device (bag-valve mask, pocket mask equipped with a one-way valve or other device).

>> If no pulse detected or no respiratory medical device available, provide continuouscompressions. Conduct a pulse check every two minutes or monitor for any signs of spontaneous respirations.

>> Remove and isolate contaminated clothing and shoes.

>> For minor skin contact, avoid spreading material on unaffected skin.

>> In case of contact with substance, remove immediately by flushing skin or eyes with running water for at least 20 minutes.

>> For severe burns, immediate medical attention is required.

>> Effects of exposure (inhalation, ingestion, or skin contact) to substance may be delayed.

>> Keep victim calm and warm.

>> Keep victim under observation.

>> For further assistance, contact your local Poison Control Center.

>> Note: Basic Life Support (BLS) and Advanced Life Support (ALS) should be done by trained professionals.

>> In Canada, an Emergency Response Assistance Plan (ERAP) may be required for this product. Please consult the shipping paper and/or the "ERAP" section.

First Aid Measures

Inhalation First Aid

>> Fresh air, rest. Refer for medical attention.

Skin First Aid

>> Remove contaminated clothes. Rinse skin with plenty of water or shower.

Eye First Aid

>> First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then refer for medical attention.

Ingestion First Aid

>> Rinse mouth. Refer immediately for medical attention.

5. Fire Fighting Measures

>> Excerpt from ERG Guide 151 [Substances - Toxic (Non-Combustible)]:

>> SMALL FIRE: Dry chemical, CO2 or water spray.

>> LARGE FIRE: Water spray, fog or regular foam. If it can be done safely, move undamaged containers away from the area around the fire. Dike runoff from fire control for later disposal. Avoid aiming straight or solid streams directly onto the product.

>> FIRE INVOLVING TANKS, RAIL TANK CARS OR HIGHWAY TANKS: Fight fire from maximum distance or use unmanned master stream devices or monitor nozzles. Do not get water inside containers. Cool containers with flooding quantities of water until well after fire is out. Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank. ALWAYS stay away from tanks in direct contact with flames. For massive fire, use unmanned master stream devices or monitor nozzles; if this is impossible, withdraw from area and let fire burn. (ERG, 2024)

>> Use fine water spray, foam, dry powder.

6. Accidental Release Measures

Isolation and Evacuation:

Isolation and evacuation measures to take when a large amount of this chemical is accidentally released in an emergency.

>> Excerpt from ERG Guide 151 [Substances - Toxic (Non-Combustible)]:

>> IMMEDIATE PRECAUTIONARY MEASURE: Isolate spill or leak area in all directions for at least 50 meters (150 feet) for liquids and at least 25 meters (75 feet) for solids.

>> SPILL: Increase the immediate precautionary measure distance, in the downwind direction, as necessary.

>> FIRE: If tank, rail tank car or highway tank is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions. (ERG, 2024)

Evacuation: ERG 2024, Guide 151 (Lead acetate)

>> Immediate precautionary measure

>> Isolate spill or leak area in all directions for at least 50 meters (150 feet) for liquids and at least 25 meters (75 feet) for solids.

>> Spill

>> For non-highlighted materials: increase the immediate precautionary measure distance, in the downwind direction, as necessary.

>> Fire

>> If tank, rail tank car or highway tank is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions.

Spillage Disposal:

Methods for containment and safety measures to protect workers dealing with a spillage of this chemical.

>> Personal protection: particulate filter respirator adapted to the airborne concentration of the substance. Do NOT let this chemical enter the environment. Sweep spilled substance into covered containers. If appropriate, moisten first to prevent dusting. Carefully collect remainder. Then store and dispose of according to local regulations.

Accidental Release Measures

Public Safety: ERG 2024, Guide 151 (Lead acetate)

>> CALL 911. Then call emergency response telephone number on shipping paper. If shipping paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.

>> Keep unauthorized personnel away.

>> Stay upwind, uphill and/or upstream.

Spill or Leak: ERG 2024, Guide 151 (Lead acetate)

>> Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.

>> Stop leak if you can do it without risk.

>> Prevent entry into waterways, sewers, basements or confined areas.

>> Cover with plastic sheet to prevent spreading.

>> Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers.

>> DO NOT GET WATER INSIDE CONTAINERS.

>> For solids, prevent dust cloud and avoid inhalation of dust.

7. Handling And Storage

Safe Storage:

>> Store only in original container. Separated from bromates, acids and food and feedstuffs. Well closed. Provision to contain effluent from fire extinguishing. Store in an area without drain or sewer access.

Storage Conditions:

>> Store in a cool, dry place and keep tightly covered and avoid contact with oxidizers, strong acids, chemically active metals. A regulated, marked area should be established where this chemical is handled, used, or stored ...

8. Exposure Control/ Personal Protection

>> 0.05 [mg/m3], as Pb

>> 0.05 [mg/m3], as Pb

Emergency Response: ERG 2024, Guide 151 (Lead acetate)

>> Small Fire

>> Dry chemical, CO2 or water spray.

>> Large Fire

>> Water spray, fog or regular foam.

>> If it can be done safely, move undamaged containers away from the area around the fire.

>> Dike runoff from fire control for later disposal.

>> Avoid aiming straight or solid streams directly onto the product.

>> Fire Involving Tanks, Rail Tank Cars or Highway Tanks

>> Fight fire from maximum distance or use unmanned master stream devices or monitor nozzles.

>> Do not get water inside containers.

>> Cool containers with flooding quantities of water until well after fire is out.

>> Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.

>> ALWAYS stay away from tanks in direct contact with flames.

>> For massive fire, use unmanned master stream devices or monitor nozzles; if this is impossible, withdraw from area and let fire burn.

Inhalation Risk:

>> A harmful concentration of airborne particles can be reached quickly when dispersed, especially if powdered.

Effects of Short Term Exposure:

>> The substance is irritating to the eyes. The substance may cause effects on the blood and central nervous system. This may result in haemolytic anaemia, nervous disorders and kidney impairment. The effects may be delayed. Medical observation is indicated.

Effects of Long Term Exposure:

>> The substance may have effects on the blood, bone marrow, cardiovascular system, kidneys and nervous system. This may result in anaemia, increase of blood pressure, paralysis, kidney impairment and behavioural effects. This substance is possibly carcinogenic to humans. Causes serious reproductive toxicity in humans.

Acceptable Daily Intakes:

An estimate of the amount of a chemical in food or drinking water that can be consumed daily over a lifetime without presenting an appreciable risk to health. It is usually expressed as milligrams of the substance per kilogram of body weight per day and applies to chemicals such as food additives, pesticide residues and veterinary drugs.

>> 0.007 mg/kg (WHO) /Lead; from table/

Fire Prevention

>> Prevent deposition of dust. Closed system, dust explosion-proof electrical equipment and lighting. NO contact with incompatible materials: See Chemical Dangers

Exposure Prevention

>> PREVENT DISPERSION OF DUST! STRICT HYGIENE!

Inhalation Prevention

>> Use local exhaust or breathing protection.

Skin Prevention

>> Protective gloves.

Eye Prevention

>> Wear safety goggles or eye protection in combination with breathing protection.

Ingestion Prevention

>> Do not eat, drink, or smoke during work.

Exposure Control and Personal Protection

Protective Clothing: ERG 2024, Guide 151 (Lead acetate)

>> Wear positive pressure self-contained breathing apparatus (SCBA).

>> Wear chemical protective clothing that is specifically recommended by the manufacturer when there is NO RISK OF FIRE.

>> Structural firefighters' protective clothing provides thermal protection but only limited chemical protection.

Exposure Summary

>> Biological Exposure Indices (BEI) [ACGIH] - Lead in blood = 200 ug/L (20 ug/100 ml); sampling time not critical; [ACGIH]

9. Physical And Chemical Properties

Molecular Weight:

>> 325

Exact Mass:

>> 326.00326

Physical Description:

>> Lead acetate appears as a white to gray crystalline solid. Denser than water. Contact may irritate skin, eyes and mucous membranes. May be toxic by inhalation, ingestion, and skin absorption. Used in dyes, waterproofing, insecticides, antifouling paints, hair dyes and many other processes.

>> COLOURLESS CRYSTALS OR WHITE CRYSTALLINE POWDER.

Color/Form:

>> White crystals

Odor:

>> Slight acetic odor

Boiling Point:

>> At temperatures over 200 °F it begins to lose acetic acid, decomposes completely above 400 °F (NTP, 1992)

Melting Point:

>> 536 °F 167 °F when heated rapidly (NTP, 1992)

>> 280 °C

Solubility:

>> 10 to 50 mg/mL at 68 °F (NTP, 1992)

>> Solubility in water, g/100ml at 20 °C: 44

Density:

>> 2.55 at 68 °F (USCG, 1999) - Denser than water; will sink

>> Relative density (water = 1): 3.3

Vapor Pressure:

>> 0.000722 [mmHg]

Decomposition:

>> When heated to decomp, it emits toxic fumes of /lead/.

pH:

pH is an expression of hydrogen ion concentration in water. Specifically, pH is the negative logarithm of hydrogen ion (H+) concentration (mol/L) in an aqueous solution. The term is used to indicate basicity or acidity of a solution on a scale of 0 to 14, with pH 7 being neutral.

>> 5.5-6.5 (5% aq soln at 25 °C)

10. Stability And Reactivity

>> Soluble in water.

CSL No

>> CSL00100

Reactants/Reagents

>> Lead acetate + PICRIC ACID

Warning Message

>> Potentially explosive

GHS Category

>> Explosive

Reference Source

>> User-Reported

Modified Date

>> 7/8/18

Create Date

>> 8/8/17

11. Toxicological Information

Toxicity Summary:

>> Lead mimics other biologically important metals, such as zinc, calcium, and iron, competing as cofactors for many of their respective enzymatic reactions. For example, lead has been shown to competitively inhibit calcium's binding of calmodulin, interferring with neurotransmitter release. It exhibits similar competitive inhibition at the NMDA receptor and protein kinase C, which impairs brain microvascular formation and function, as well as alters the blood-brain barrier. Lead also affects the nervous system by impairing regulation of dopamine synthesis and blocking evoked release of acetylcholine. However, it's main mechanism of action occurs by inhibiting delta-aminolevulinic acid dehydratase, an enzyme vital in the biosynthesis of heme, which is a necesssary cofactor of hemoglobin. (T4, A20, A22, L136)

Evidence for Carcinogenicity:

Evidence that this chemical does or may cause cancer. The information here is collected from various sources by the Hazardous Substances Data Bank (HSDB).

>> There is limited evidence in humans for the carcinogenicity of inorganic lead compounds. ... There is sufficient evidence in experimental animals for the carcinogenicity of inorganic lead compounds. There is sufficient evidence in experimental animals for the carcinogenicity of lead acetate, lead subacetate, lead chromate, and lead phosphate. There is inadequate evidence in experimental animals for the carcinogenicity of lead oxide and lead arsenate. ... There is inadequate evidence in experimental animals for the carcinogenicity of lead powder. Overall evaluation Inorganic lead compounds are probably carcinogenic to humans (Group 2A). /Inorganic lead compounds/

Carcinogen Classification:

This section provides the International Agency for Research on Cancer (IARC) Carcinogenic Classification and related monograph links. In the IARC Carcinogenic classification, chemicals are categorized into four groups: Group 1 (carcinogenic to humans), Group 2A (probably carcinogenic to humans), Group 2B (possibly carcinogenic to humans), and Group 3 (not classifiable as to its carcinogenicity to humans).

>> Organic lead compounds are not classifiable as to their carcinogenicity to humans (Group 3). To the extent that organic lead compounds are metabolized in part to ionic lead, they are expected to exert the toxicities associated with

inorganic lead (Group 2A, probably carcinogenic to humans). (L135)

Health Effects:

>> Lead is a neurotoxin and has been known to cause brain damage and reduced cognitive capacity, especially in children. Lead exposure can result in nephropathy, as well as blood disorders such as high blood pressure and anemia. Lead also exhibits reproductive toxicity and can results in miscarriages and reduced sperm production. (L21)

Exposure Routes:

>> The substance can be absorbed into the body by inhalation and by ingestion.

>> Oral (L136) ; inhalation (L136) ; dermal (L136)

Inhalation Exposure

>> Cough. Sore throat. See Ingestion.

Skin Exposure

>> Redness. Pain.

Eye Exposure

>> Redness. Pain.

Ingestion Exposure

>> Nausea. Vomiting. Abdominal cramps. Constipation. Convulsions.

>> Symptions of chronic lead poisoning include reduced cognitive abilities, nausea, abdominal pain, irritability, insomnia, metal taste in the mouth, excess lethargy or hyperactivity, chest pain, headache and, in extreme cases, seizures, comas, and death. There are also associated gastrointestinal problems, such as constipation, diarrhea, vomiting, poor appetite, weight loss, which are common in acute poisoning. (A2, L21)

Adverse Effects:

An adverse effect is an undesired harmful effect resulting from a medical treatment or other intervention.

>> Neurotoxin - Predominantly motor

>> Nephrotoxin - The chemical is potentially toxic to the kidneys in the occupational setting.

>> Hemolytic anemia - Decreased hemoglobin or number of red blood cells.

>> Reproductive Toxin - A chemical that is toxic to the reproductive system, including defects in the progeny and injury to male or female reproductive function. Reproductive toxicity includes developmental effects. See Guidelines for Reproductive Toxicity Risk Assessment.

>> IARC Carcinogen - Class 2: International Agency for Research on Cancer classifies chemicals as probable (2a), or possible (2b) human carcinogens.

>> NTP Carcinogen - Reasonably anticipated to be a human carcinogen.

>> ACGIH Carcinogen - Confirmed Animal.

Toxicity Data:

>> LD50: 150 mg (Intraperitoneal, Rat) (T14) LD50: 104 mg/kg (Intravenous, Rat) (T14)

Minimum Risk Level:

The minimal risk level (MRL) is an estimate of the amount of a chemical a person can eat, drink, or breathe each day without a detectable risk to health

>> Chronic Inhalation: 0.05 mg/m3 (L134)

Treatment:

Treatment when exposed to toxin

>> Lead poisoning is usually treated with chelation therapy using DMSA, EDTA, or dimercaprol. (L21)

Interactions:

>> ... Lead was administered orally as lead acetate (50 mg/kg bw) daily for 3 mo to male Portan rats with or without zinc (1 mg/kg bw as zinc sulphate) ... There was a 30% reduction in lead deposition in the testis when zinc was coadministered. At the subcellular level, there was differential accumulation of lead; the nucleus preferentially took up the metal after lead treatment alone, while zinc coadministration shifted lead accumulation to the mitochondria. A significant decrease in delta-ALAD and in SOD activity was seen in the testis with lead treatment. Coadministration of zinc prevented these decreases, at least partially. Zinc coadministration did not prevent the inhibition of catalase observed with lead treatment. Histologically, the alterations in the testis with lead treatment alone were more pronounced compared to animals in which zinc was supplemented. Improvement in the inhibition of delta-ALAD and in the ubiquitous cellular

enzyme SOD suggests less testicular tissue damage due to detoxification of free radicals. In conclusion, zinc supplementation ameliorates lead-induced testicular damage both at the cellular and subcellular level ...

Antidote and Emergency Treatment:

>> Immediate first aid: Ensure that adequate decontamination has been carried out. If patient is not breathing, start artificial respiration, preferably with a demand-valve resuscitator, bag-valve-mask device, or pocket mask, as trained. Perform CPR as necessary. Immediately flush contaminated eyes with gently flowing water. Do not induce vomiting. If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain an open airway and prevent aspiration. Keep patient quiet and maintain normal body temperature. Obtain medical attention. /Lead and related compounds/

Human Toxicity Excerpts:

>> /HUMAN EXPOSURE STUDIES/ Eleven male volunteers aged 20-30 yr ingested lead acetate for 49 days. Blood lead levels were kept at approximately 40 ug/dL. The frequency of chromosome aberrations was assayed after lymphocyte culture for 72 hr and found to be no different from that of 10 controls. The lead-exposed subjects did show a higher mitotic activity.

Non-Human Toxicity Excerpts:

>> /LABORATORY ANIMALS: Acute Exposure/ ... Brn-3a is a member of the Pit-Oct-Unc (POU) family of transcription factors that is expressed predominantly in neuronal cells. It exists in two forms, with the long form containing 84 amino acids at the N-terminus that are lacking in the short form. The N-terminal domain unique to the long form induces expression of the Bcl-2 gene and protects neuronal cells against apoptosis whereas the C-terminal POU domain common to both forms is sufficient for activating a number of other neuronally expressed genes and stimulating neuronal process outgrowth ... Brn-3a protein and RNA expression in rat brain /were examined/ following low-level lead exposure during development and subsequent effects on spatial learning and memory. Two groups of rats were investigated: a control group and a lead-exposed group (0.2% lead acetate in the drinking water of the dam from gestational day 15 to postnatal day 21). Levels of Brn-3a were measured in rat cortex, hippocampus, and cerebellum by immunohistochemistry and in situ hybridization, both protein and mRNA levels were reduced in lead-exposed group ($p < 0.05$). In Morris water maze, we found spatial learning deficits in rats of lead-exposed group ($p < 0.05$). These data suggest that the alteration of Brn-3a may play a key role in the mechanisms underlying lead neurotoxicity.

Non-Human Toxicity Values:

>> LD50 Rat ip 150 mg/kg

National Toxicology Program Studies:

Reports from the National Toxicology Program, an interagency program supported by three government agencies (NIH, FDA, and CDC) within the Department of Health and Human Services. This program plays a critical role in generating, interpreting, and sharing toxicological information about chemicals of public health concerns.

>> Lead Acetate Trihydrate (PbA) was evaluated in this follow-up study as a possible reproductive toxicant using the RACB protocol. A previous study at the other RACB laboratory found significant toxicity at concns in the drinking water = or >0.5%. Thus, levels for this study were set at 0.125, 0.25, & 0.5% w/v in drinking water. The highest level of PbA caused a slight (nearly =10%) reduction in water consumption, though body weight was unaffected during Task 2. Based on measures of water consumption & body weights, these concns of PbA produced consumption estimates of nearly =200, 375, & 700 mg PbA/kg/day. In the first generation (Task 2), 1 control female, 1 low dose female, 4 middle dose females, & 7 females & 1 male at the high dose died during Task 2. These deaths were considered treatment-related, but the cause of death was not determined. F0 body weights were not affected by PbA consumption. There was a 7% decr in adjusted live pup weight at the high dose, though PbA did not alter the number of litters/pair or the number of pups/litter. Task 3 (the crossover study) was not conducted since there were no changes in pup number, & only small changes in pup weight which were expected to be difficult to replicate in the single-mating trial of Task 3. Thus, Task 4 was conducted with offspring from the control & 0.5% groups. Body weights to weaning were not collected during nursing of the second generation, though mortality in these mice was increased at 4 wks of age by 15% & 30% for males & females, respectively. At F1 mating, mating & fertility indices were equal between the two groups. F2 pup body weight was reduced by nearly equal to 16%, though litter size & pup viability were unaffected. After the F2 litters were evaluated, the F1 adults were killed & necropsied. Females consuming 0.5% PbA weighed nearly =12% less than controls, & brain weight was nearly =7% less than controls, while adjusted spleen weight was 2.2 times greater than controls. Ante-mortem estrous cycle evaluations were not performed. For treated males, body weight was reduced by nearly =11%, while absolute testis weight was nearly =9% less than controls. Absolute brain & relative kidney weights were reduced by nearly =5% & 13%, respectively, while relative spleen weight was increased 1.7-fold. Sperm measures were unaffected by PbA consumption. Thus, this study replicated the Task 2 mortality & pup body weight effects seen in the first study, while showing that lead acetate trihydrate caused reproductive toxicity only in the presence of adult mortality or systemic changes (spleen weight, brain weight changes).

12. Ecological Information

Resident Soil (mg/kg)

>> 2.60e+00

Industrial Soil (mg/kg)

>> 1.10e+01

Resident Air (ug/m3)

>> 3.50e-02

Industrial Air (ug/m3)

>> 1.50e-01

Tapwater (ug/L)

>> 3.70e-01

MCL (ug/L)

>> 5.00e+01

Risk-based SSL (mg/kg)

>> 7.5e-05

Oral Slope Factor (mg/kg-day)-1

>> 2.10e-01

Inhalation Unit Risk (ug/m3)-1

>> 8e-05

Volatile

>> Volatile

Mutagen

>> Mutagen

Fraction of Contaminant Absorbed in Gastrointestinal Tract

>> 1

Fraction of Contaminant Absorbed Dermally from Soil

>> 0.1

ICSC Environmental Data:

>> The substance is very toxic to aquatic organisms. This substance may be hazardous to the environment. Special attention should be given to birds, mammals, soil contamination and water quality. Bioaccumulation of this chemical may occur in plants and animals. It is strongly advised not to let the chemical enter into the environment because it is persistent.

13. Disposal Considerations

Spillage Disposal

>> Personal protection: particulate filter respirator adapted to the airborne concentration of the substance. Do NOT let this chemical enter the environment. Sweep spilled substance into covered containers. If appropriate, moisten first to prevent dusting. Carefully collect remainder. Then store and dispose of according to local regulations.

Disposal Methods

>> Generators of waste (equal to or greater than 100 kg/mo) containing this contaminant, EPA hazardous waste number U144, D008 must conform with USEPA regulations in storage, transportation, treatment and disposal of waste.

>> PRECAUTIONS FOR "CARCINOGENS": There is no universal method of disposal that has been proved satisfactory for all carcinogenic compounds & specific methods of chem destruction ... published have not been tested on all kinds of carcinogen-containing waste. ... Summary of avail methods & recommendations ... /given/ must be treated as guide only. /Chemical Carcinogens/

>> PRECAUTIONS FOR "CARCINOGENS": Total destruction ... by incineration may be only feasible method for disposal of contaminated laboratory waste from biological expt. However, not all incinerators are suitable for this purpose.The most efficient type ... is probably the gas-fired type, in which a first-stage combustion with a less than stoichiometric air:fuel ratio is followed by a second stage with excess air. Some ... are designed to accept ... aqueous & organic-solvent solutions, otherwise it is necessary ... to absorb soln onto suitable combustible material, such as sawdust. Alternatively, chem destruction may be used, esp when small quantities ... are to be destroyed in laboratory. /Chemical Carcinogens/

>> PRECAUTIONS FOR "CARCINOGENS": HEPA (high-efficiency particulate arrestor) filters ... can be disposed of by incineration. For spent charcoal filters, the adsorbed material can be stripped off at high temp & carcinogenic wastes generated by this treatment conducted to & burned in an incinerator. ... LIQUID WASTE: ... Disposal should be carried out by incineration at temp that ... ensure complete combustion. SOLID WASTE: Carcasses of lab animals, cage litter & misc solid wastes ... should be disposed of by incineration at temp high enough to ensure destruction of chem carcinogens or their metabolites. /Chemical Carcinogens/

>> For more Disposal Methods (Complete) data for LEAD ACETATE (7 total), please visit the HSDB record page.

14. Transport Information

DOT

Lead acetate
6.1
UN Pack Group: III
Reportable Quantity of 10 lb or 4

IATA

Lead acetate
6.1,
UN Pack Group: III

15. Regulatory Information

Federal Drinking Water Standards:

Federal drinking water standards (e.g. maximum containment level (MCL)) for this chemical. These standards are legally enforceable.

>> EPA 15 ug/L (Action Level) /Lead/

State Drinking Water Standards:

State drinking water standards (e.g. maximum containment level (MCL)) for this chemical. These standards are legally enforceable.

>> (AZ) ARIZONA 50 ug/L /Lead/

Clean Water Act Requirements:

The Clean Water Act (CWA) of 1972 establishes the basic structure for regulating discharges of pollutants into the waters of the United States and regulating quality standards for surface waters. Under CWA, the U.S. Environmental Protection Agency (EPA) developed the Toxic Pollutant List (40 CFR Part 401.15) and the Priority Pollutant List (40 CFR Part 423, Appendix A). These lists are to be used by EPA and States to develop the Effluent Guidelines regulations and ensure water quality criteria and standards.

>> Lead acetate is designated as a hazardous substance under section 311(b)(2)(A) of the Federal Water Pollution Control Act and further regulated by the Clean Water Act Amendments of 1977 and 1978. These regulations apply to discharges of this substance. This designation includes any isomers and hydrates, as well as any solutions and mixtures containing this substance.

Regulatory Information

The Australian Inventory of Industrial Chemicals

>> Chemical: Acetic acid, lead(2+) salt

REACH Registered Substance

>> Status: Active Update: 24-09-2021 https://echa.europa.eu/registration-dossier/-/registered-dossier/13113

REACH Restricted Substance

>> Restricted substance: Lead di(acetate)

>> EC: 206-104-4

REACH Substances of Very High Concern (SVHC)

>> Substance: Lead di(acetate)

>> EC: 206-104-4

>> Date of inclusion: >16-Dec-2013

>> Reason for inclusion: Toxic for reproduction (Article 57c)

REACH Restricted Substance

>> Restricted substance: Lead acetate

>> EC: 239-379-4

New Zealand EPA Inventory of Chemical Status

>> Lead (II) acetate: Does not have an individual approval but may be used under an appropriate group standard

16. Other Information

Toxic Combustion Products:

Toxic products (e.g., gases and vapors) produced from the combustion of this chemical.

>> Poisonous fumes of lead are produced in fire.

Other Safety Information

Chemical Assessment

>> IMAP assessments - Lead acetates: Health tier III assessment

>> IMAP assessments - Lead acetates: Human health tier II assessment

>> IMAP assessments - Water soluble lead(2+) salts: Environment tier II assessment

"The information provided is believed to be accurate but is not comprehensive and should be used as a reference. It reflects our current knowledge and is intended for safety guidance related to the product. This document does not constitute a warranty of the product's properties. Ionz is not responsible for any damages resulting from handling or contact with the product incorrectly."