

# Material Safety Data Sheet

HAZARD WARNINGS	RISK PHRASES	PROTECTIVE CLOTHING
	Irritating to skin, eyes, and the respiratory system. Harmful compound, minimize exposure. Hygroscopic -- keep container tightly sealed. Light sensitive. POSSIBLE MUTAGEN. MINIMIZE EXPOSURE.	

## Section I. Chemical Product and Company Identification

Chemical Name	<b>Gallic Acid Hydrate</b>		
Catalog Number	G0011	Supplier	TCI America 9211 N. Harborside St. Portland OR 1-800-423-8616
Synonym	3,4,5-Trihydroxybenzoic Acid		
Chemical Formula	C <sub>7</sub> H <sub>6</sub> O <sub>5</sub> •xH <sub>2</sub> O		
CAS Number	5995-86-8	In case of Emergency Call	<b>Chemtrec®</b> <b>(800) 424-9300 (U.S.)</b> <b>(703) 527-3887 (International)</b>

## Section II. Composition and Information on Ingredients

Chemical Name	CAS Number	Percent (%)	TLV/PEL	Toxicology Data
Gallic Acid Hydrate	5995-86-8	Min. 98.0 (HPLC, T)	This compound is classified as a possible mutagen. There is no acceptable exposure limit for a mutagen.	Rabbit LD <sub>50</sub> (oral) 5000 mg/kg Mouse LD <sub>50</sub> (intraperitoneal) 4300 mg/kg Mouse LD <sub>50</sub> (intravenous) 320 mg/kg

## Section III. Hazards Identification

Acute Health Effects	Irritating to eyes and skin on contact. Inhalation causes irritation of the lungs and respiratory system. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering. Harmful if ingested or inhaled. Minimize exposure to this material. Severe overexposure can result in injury or death. Follow safe industrial hygiene practices and always wear proper protective equipment when handling this compound.
Chronic Health Effects	<b>CARCINOGENIC EFFECTS</b> : Not available. <b>MUTAGENIC EFFECTS</b> : Not available. <b>TERATOGENIC EFFECTS</b> : Not available. <b>DEVELOPMENTAL TOXICITY</b> : Reproductive Effects. Rat TDLo Subcutaneous 5 mg/kg, female 1 day prior to mating TOXIC Effects: Maternal Effects - Ovaries, fallopian tubes

## Section IV. First Aid Measures

Eye Contact	Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention.
Skin Contact	In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.
Inhalation	If the victim is not breathing, perform mouth-to-mouth resuscitation. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, oxygen can be administered. Seek medical attention if respiration problems do not improve.
Ingestion	INDUCE VOMITING by sticking finger in throat. Lower the head so that the vomit will not reenter the mouth and throat. Loosen tight clothing such as a collar, tie, belt or waistband. If the victim is not breathing, perform mouth-to-mouth resuscitation. Examine the lips and mouth to ascertain whether the tissues are damaged, a possible indication that the toxic material was ingested; the absence of such signs, however, is not conclusive.

## Section V. Fire and Explosion Data

Flammability	May be combustible at high temperature.	Auto-Ignition	Not available.
Flash Points	250 °C (482 °F).	Flammable Limits	Not available.
Combustion Products	These products are toxic carbon oxides (CO, CO <sub>2</sub> ).		
Fire Hazards	Not available.		
Explosion Hazards	Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.		
Fire Fighting Media and Instructions	SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray, fog or foam. DO NOT use water jet. Consult with local fire authorities before attempting large scale fire-fighting operations.		

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Emergency phone number (800) 424-9300

**Section VI. Accidental Release Measures**

Spill Cleanup Instructions  
Irritating material. Harmful material. Hygroscopic material. Light sensitive material. Possibly mutagenic material. Use a shovel to put the material into a convenient waste disposal container. Finish cleaning the spill by rinsing any contaminated surfaces with copious amounts of water. Consult federal, state, and/or local authorities for assistance on disposal.

**Section VII. Handling and Storage**

Handling and Storage Information  
IRRITANT. HARMFUL. HYGROSCOPIC. LIGHT SENSITIVE. POSSIBLE MUTAGEN. Keep away from heat. Mechanical exhaust required. When not in use, tightly seal the container and store in a dry, cool place. Avoid excessive heat and light. DO NOT ingest. Do not breathe dust. If ingested, seek medical advice immediately and show the container or the label. Treat symptomatically and supportively. Always store away from incompatible compounds such as oxidizing agents, alkalis (bases).

**Section VIII. Exposure Controls/Personal Protection**

Engineering Controls  
Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Personal Protection  
Splash goggles. Lab coat. Dust respirator. Boots. Gloves. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product. Be sure to use a MSHA/NIOSH approved respirator or equivalent.



Exposure Limits  
This compound is classified as a possible mutagen. There is no acceptable exposure limit for a mutagen.

**Section IX. Physical and Chemical Properties**

Physical state @ 20°C	Solid. (White, Crystalline powder.)	Solubility	Soluble in Alcohol, acetone, glycerin. Slightly soluble in water, ether. Insoluble in benzene, chloroform.
Specific Gravity	Not available.		
Molecular Weight	170.12 (Anh)	Partition Coefficient	Log P <sub>ow</sub> : 0.70
Boiling Point	Not available.	Vapor Pressure	0.2 x 10 <sup>-4</sup> Pa @ 25°C
Melting Point	251 °C (483.8°F)	Vapor Density	Not available.
Refractive Index	Not available.	Volatility	Not available.
Critical Temperature	Not available.	Odor	Not available.
Viscosity	Not available.	Taste	Not available.

**Section X. Stability and Reactivity Data**

Stability	This material is stable if stored under proper conditions. (See Section VII for instructions)
Conditions of Instability	Avoid excessive heat and light. Moisture sensitive.
Incompatibilities	Reactive with strong oxidizing agents, strong alkalis (bases), acid chlorides, and acid anhydrides.

**Section XI. Toxicological Information**

RTECS Number	LW7525000
Routes of Exposure	Eye Contact. Ingestion. Inhalation.
Toxicity Data	Rabbit LD <sub>50</sub> (oral) 5000 mg/kg Mouse LD <sub>50</sub> (intraperitoneal) 4300 mg/kg Mouse LD <sub>50</sub> (intravenous) 320 mg/kg
Chronic Toxic Effects	<b>CARCINOGENIC EFFECTS</b> : Not available. <b>MUTAGENIC EFFECTS</b> : Not available. <b>TERATOGENIC EFFECTS</b> : Not available. <b>DEVELOPMENTAL TOXICITY</b> : Reproductive Effects. Rat TDLo Subcutaneous 5 mg/kg, female 1 day prior to mating TOXIC Effects: Maternal Effects - Ovaries, fallopian tubes
Acute Toxic Effects	Irritating to eyes and skin on contact. Inhalation causes irritation of the lungs and respiratory system. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering. Harmful if ingested or inhaled. Minimize exposure to this material. Severe overexposure can result in injury or death. Follow safe industrial hygiene practices and always wear proper protective equipment when handling this compound.

**Section XII. Ecological Information**

Ecotoxicity Not available.

Environmental Fate Gallic acid's production and use in photography, writing ink, dyeing, manufacture of pyrogallol, paper manufacture, pharmaceuticals, engraving of lithography, and as an analytical reagent may result in its release to the environment from its use. If released into the atmosphere, gallic acid will exist both in the vapor phase and particulate phase in the ambient atmosphere, based on an estimated vapor pressure of 1.2X10<sup>-7</sup> mm Hg at 25 deg C. Vapor phase gallic acid is degraded in the atmosphere by reaction with photochemically-produced hydroxyl radicals with a half-life of about 3.6 hours. An estimated Koc value of 57 suggests that gallic acid will have high mobility in soil. Volatilization from moist soil is not expected based upon an estimated Henry's Law constant of 8.5x10<sup>-20</sup> atm-cu m/mole. Volatilization from dry soil surfaces should not be important given the vapor pressure of this compound. Under both aerobic and anaerobic conditions, gallic acid is mineralized to methane and carbon dioxide in the presence of certain Rhodospirillaceae. Using an activated sludge inoculum, 90.5 percent gallic acid was biodegraded as measured by by COD removal. In water, gallic acid is expected to adsorb to sediment or particulate matter based on its Koc value. This compound is not expected to volatilize from water surfaces given its estimated Henry's Law constant. Bioconcentration in aquatic organisms should be low based upon an estimated BCF value of 2. Given the commercial uses of gallic acid, human exposure appears to be likely from occupational situations through dermal, ingestion, and inhalation routes. General population exposure may result from dermal contact with plants containing tannin and ingestion of tea.

**Section XIII. Disposal Considerations**

Waste Disposal Recycle to process, if possible. Consult your local regional authorities. You may be able to dissolve or mix material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber system. Observe all federal, state and local regulations when disposing of the substance.

**Section XIV. Transport Information**

DOT Classification Not a DOT controlled material (United States).

PIN Number Not applicable.

Proper Shipping Name Not applicable.

Packing Group (PG) Not applicable.

DOT Pictograms

**Section XV. Other Regulatory Information and Pictograms**

TSCA Chemical Inventory (EPA) This compound is **ON** the EPA Toxic Substances Control Act (TSCA) inventory list.

WHMIS Classification (Canada) On DSL

EINECS Number (EEC) 205-749-9

EEC Risk Statements R20/21/22- Harmful by inhalation, in contact with skin and if swallowed.  
R36/37/38- Irritating to eyes, respiratory system and skin.

Japanese Regulatory Data ENCS No.3-1629 ; 9-1351

**Section XVI. Other Information**

**Version 1.0**  
**Validated on 3/16/2009.**  
**Printed 2/25/2011.**

**Notice to Reader**

TCI laboratory chemicals are for research purposes only and are NOT intended for use as drugs, food additives, households, or pesticides. The information herein is believed to be correct, but does not claim to be all inclusive and should be used only as a guide. Neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All chemical reagents must be handled with the recognition that their chemical, physiological, toxicological, and hazardous properties have not been fully investigated or determined. All chemical reagents should be handled only by individuals who are familiar with their potential hazards and who have been fully trained in proper safety, laboratory, and chemical handling procedures. Although certain hazards are described herein, we can not guarantee that these are the only hazards which exist. Our MSDS sheets are based only on data available at the time of shipping and are subject to change without notice as new information is obtained. Avoid long storage periods since the product is subject to degradation with age and may become more dangerous or hazardous. It is the responsibility of the user to request updated MSDS sheets for products that are stored for extended periods. Disposal of unused product must be undertaken by qualified personnel who are knowledgeable in all applicable regulations and follow all pertinent safety precautions including the use of appropriate protective equipment (e.g. protective goggles, protective clothing, breathing equipment, facial mask, fume hood). For proper handling and disposal, always comply with federal, state, and local regulations.