

# Material Safety Data Sheet

HAZARD WARNINGS	RISK PHRASES	PROTECTIVE CLOTHING
 	<p>Flammable material; avoid heat and sources of ignition.                      Harmful compound, minimize exposure.                      Irritating to skin, eyes, and the respiratory system.                      This compound is a skin sensitizer.                      Moisture sensitive material.                      Handle and store under inert gas.                      This material is harmful to aquatic organisms and may cause long term adverse effects to the aquatic environment.</p>	   

## Section I. Chemical Product and Company Identification

Chemical Name	<b>Paraformaldehyde</b>		
Catalog Number	P0018	Supplier	TCl America 9211 N. Harborgate St. Portland OR 1-800-423-8616
Synonym	Formagene		
Chemical Formula	(CH <sub>2</sub> O) <sub>n</sub>		
CAS Number	30525-89-4	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
Paraformaldehyde	30525-89-4	Min. 90.0 (T)	Not available.	Rat LD <sub>50</sub> (oral) 800 mg/kg Rat LD <sub>50</sub> (inhalation) 1070 mg/m <sup>3</sup> /4H

## Section III. Hazards Identification

Acute Health Effects	<p>Harmful if ingested or inhaled. Minimize exposure to this material. Severe overexposure can result in injury or death. 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.</p> <p>Skin contact may result in sensitization. Always cover all exposed skin with an impermeable layer and use proper eye protection. A OSHA/MSHA approved dust and vapor respirator is required when working with this material.</p> <p>Follow safe industrial hygiene practices and always wear proper protective equipment when handling this compound.</p>
Chronic Health Effects	<p><b>CARCINOGENIC EFFECTS</b> : While Paraformaldehyde has not been identified as a carcinogen, it should be HANDLED WITH CAUTION since Formaldehyde (the monomer from which it is made) is a carcinogen.</p> <p><b>MUTAGENIC EFFECTS</b> : Not available.</p> <p><b>TERATOGENIC EFFECTS</b> : Not available.</p> <p><b>DEVELOPMENTAL TOXICITY</b>: Not available.</p> <p>Repeated or prolonged exposure to this compound is not known to aggravate existing medical conditions.</p>

## 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	Flammable.	Auto-Ignition	300°C (572°F)
Flash Points	70°C (158°F).	Flammable Limits	LOWER: 7% UPPER: 73%
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.		

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Emergency phone number (800) 424-9300

## Fire Fighting Media and Instructions

Flammable solid.  
**SMALL FIRE:** Use DRY chemical powder.  
**LARGE FIRE:** Use water spray or fog. Cool containing vessels with water jet in order to prevent pressure build-up, autoignition or explosion. Consult with local fire authorities before attempting large scale fire-fighting operations.

**Section VI. Accidental Release Measures**

## Spill Cleanup Instructions

Flammable material. Harmful material. Irritating material. Skin sensitizing material. Moisture sensitive material.  
 Stop leak if without risk. **DO NOT** touch spilled material. Use water spray curtain to divert vapor drift. Prevent entry into sewers, basements or confined areas; dike if needed. Eliminate all sources of ignition. Consult federal, state, and/or local authorities for assistance on disposal.

**Section VII. Handling and Storage**

## Handling and Storage Information

**FLAMMABLE. HARMFUL. IRRITANT. SKIN SENSITIZER. MOISTURE SENSITIVE.** Keep away from heat. Mechanical exhaust required. Avoid excessive heat and light. Do not breathe dust.  
 Always store away from incompatible compounds such as oxidizing agents, reducing agents, moisture.

**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

Not available.

**Section IX. Physical and Chemical Properties**

Physical state @ 20°C	Solid. (White crystalline powder - powder)	Solubility	Slowly soluble in cold water, more readily soluble in hot water.
Specific Gravity	1.46 @ 15°C (solid)		Soluble in fixed alkali hydroxide solution. Insoluble in alcohol, ether.
Molecular Weight	Not available.	Partition Coefficient	Not available.
Boiling Point	Not available.	Vapor Pressure	1.4 kPa @ 25°C
Melting Point	155 to 172°C (311 to 341.6°F) (freezing point)	Vapor Density	Not available.
Refractive Index	Not available.	Volatility	Not available.
Critical Temperature	Not available.	Odor	Pungent.
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 reducing agents, moisture, acid chlorides, and acid anhydrides, brass, steel, copper and copper alloys.

**Section XI. Toxicological Information**

## RTECS Number

RV0540000

## Routes of Exposure

Eye Contact. Ingestion. Inhalation.

## Toxicity Data

Rat LD<sub>50</sub> (oral) 800 mg/kg  
 Rat LD<sub>50</sub> (inhalation) 1070 mg/m<sup>3</sup>/4H

## Chronic Toxic Effects

**CARCINOGENIC EFFECTS** : While Paraformaldehyde has not been identified as a carcinogen, it should be **HANDLED WITH CAUTION** since Formaldehyde (the monomer from which it is made) is a carcinogen.  
**MUTAGENIC EFFECTS** : Not available.  
**TERATOGENIC EFFECTS** : Not available.  
**DEVELOPMENTAL TOXICITY**: Not available.  
 Repeated or prolonged exposure to this compound is not known to aggravate existing medical conditions.

## Acute Toxic Effects

Harmful if ingested or inhaled. Minimize exposure to this material. Severe overexposure can result in injury or death. 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.  
 Skin contact may result in sensitization. Always cover all exposed skin with an impermeable layer and use proper eye protection. A OSHA/MSHA approved dust and vapor respirator is required when working with this material.  
 Follow safe industrial hygiene practices and always wear proper protective equipment when handling this compound.

**Section XII. Ecological Information**

Ecotoxicity	Not available.
Environmental Fate	Not available.

**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.
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**Section XIV. Transport Information**

DOT Classification	DOT CLASS 4.1: Flammable solid.
PIN Number	UN2213
Proper Shipping Name	Paraformaldehyde
Packing Group (PG)	III
DOT Pictograms	

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

TSCA Chemical Inventory (EPA)	This compound is <b>ON</b> the EPA Toxic Substances Control Act (TSCA) inventory list.
WHMIS Classification (Canada)	CLASS B-4: Flammable solid. On DSL
EINECS Number (EEC)	Not available.
EEC Risk Statements	R10- Flammable. R18- In use, may form flammable/explosive vapor-air mixture. R20/21/22- Harmful by inhalation, in contact with skin and if swallowed. R36/37/38- Irritating to eyes, respiratory system and skin. R52- Harmful to aquatic organisms. R53- May cause long-term adverse effects in the aquatic environment.
Japanese Regulatory Data	ENCS No. 9-1941

**Section XVI. Other Information**

**Version 1.0**  
**Validated on 5/12/2009.**  
**Printed 5/12/2009.**

**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.