

### SECTION 1: Identification

#### 1.1. Identification

Product form	: Mixture
Trade name	: Hollandes Fixative
Product code	: 24354
Formula	: mixture

#### 1.2. Recommended use and restrictions on use

Recommended use	: Use as laboratory reagent, Manufacture of substances
-----------------	--

#### 1.3. Supplier

##### Supplier

Polysciences  
400 Valley Road  
Warrington, PA 18976 - United States  
T +1 215 343 6484 - F +1 215 343 0214  
[info@polysciences.com](mailto:info@polysciences.com) - [www.polysciences.com](http://www.polysciences.com)

#### 1.4. Emergency telephone number

Emergency number	: 24-hour emergency phone number ChemTel 1-800-255-3924
------------------	---

### SECTION 2: Hazard(s) identification

#### 2.1. Classification of the substance or mixture

##### GHS US classification

Acute toxicity (oral) Category 4	Harmful if swallowed
Acute toxicity (inhalation) Category 4	Harmful if inhaled
Skin corrosion/irritation Category 2	Causes skin irritation
Carcinogenicity Category 2	Suspected of causing cancer

#### 2.2. GHS Label elements, including precautionary statements

##### GHS US labeling

Hazard pictograms (GHS US)



Signal word (GHS US)

: Warning

Hazard statements (GHS US)

: Harmful if swallowed or if inhaled  
Causes skin irritation  
Suspected of causing cancer

Precautionary statements (GHS US)

: Obtain special instructions before use.  
Do not handle until all safety precautions have been read and understood.  
Avoid breathing dust/fume/gas/mist/vapors/spray.  
Wash hands, forearms and face thoroughly after handling.  
Do not eat, drink or smoke when using this product.  
Use only outdoors or in a well-ventilated area.

#### 2.3. Other hazards which do not result in classification

No additional information available

#### 2.4. Unknown acute toxicity (GHS US)

Not applicable

### SECTION 3: Composition/Information on ingredients

#### 3.1. Substances

Not applicable

#### 3.2. Mixtures

# Hollandes Fixative

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Name	Product identifier	%	GHS US classification
Acetic Acid (Glacial) Technical Grade	(CAS-No.) 64-19-7	0 – 5	Flam. Liq. 3, H226 Skin Corr. 1A, H314
Picric Acid	(CAS-No.) 88-89-1	0 – 5	Expl. 1.1, H201 Acute Tox. 3 (Oral), H301 Acute Tox. 3 (Dermal), H311 Acute Tox. 3 (Inhalation), H331
Methyl alcohol	(CAS-No.) 67-56-1	0 – 5	Flam. Liq. 2, H225 Acute Tox. 3 (Oral), H301 Acute Tox. 3 (Dermal), H311 Acute Tox. 3 (Inhalation), H331 Acute Tox. 3 (Inhalation:vapour), H331 STOT SE 1, H370
Acetic acid, copper(2+) salt	(CAS-No.) 142-71-2	0 – 5	Acute Tox. 4 (Oral), H302 Skin Corr. 1B, H314 Eye Dam. 1, H318 Aquatic Acute 1, H400 Aquatic Chronic 2, H411
Formaldehyde	(CAS-No.) 50-00-0	0 – 5	Acute Tox. 3 (Oral), H301 Acute Tox. 3 (Dermal), H311 Acute Tox. 3 (Inhalation), H331 Skin Corr. 1B, H314 Eye Dam. 1, H318 Skin Sens. 1, H317 Muta. 2, H341 Carc. 1A, H350 STOT SE 3, H336 Aquatic Acute 2, H401

Full text of hazard classes and H-statements : see section 16

### SECTION 4: First-aid measures

#### 4.1. Description of first aid measures

- First-aid measures general : IF exposed or concerned: Get medical advice/attention. Call a poison center/doctor/physician if you feel unwell.
- First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor/physician if you feel unwell.
- First-aid measures after skin contact : Rinse skin with water/shower. Remove/Take off immediately all contaminated clothing. If skin irritation or rash occurs: Get medical advice/attention.
- First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician immediately.
- First-aid measures after ingestion : Call a poison center/doctor/physician if you feel unwell. Rinse mouth.

#### 4.2. Most important symptoms and effects (acute and delayed)

- Symptoms/effects after skin contact : May cause an allergic skin reaction. Irritation.
- Symptoms/effects after eye contact : Serious damage to eyes.

#### 4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

### SECTION 5: Fire-fighting measures

#### 5.1. Suitable (and unsuitable) extinguishing media

- Suitable extinguishing media : Water spray. Dry powder. Foam. Carbon dioxide.

#### 5.2. Specific hazards arising from the chemical

- Fire hazard : Highly flammable liquid and vapor.
- Hazardous decomposition products in case of fire : Toxic fumes may be released.

#### 5.3. Special protective equipment and precautions for fire-fighters

- Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

# Hollandes Fixative

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

### SECTION 6: Accidental release measures

#### 6.1. Personal precautions, protective equipment and emergency procedures

##### 6.1.1. For non-emergency personnel

Emergency procedures : No open flames, no sparks, and no smoking. Only qualified personnel equipped with suitable protective equipment may intervene. Do not breathe dust/fume/gas/mist/vapors/spray.

##### 6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

#### 6.2. Environmental precautions

Avoid release to the environment. Notify authorities if product enters sewers or public waters.

#### 6.3. Methods and material for containment and cleaning up

For containment : Collect spillage.

Methods for cleaning up : Take up liquid spill into absorbent material. Notify authorities if product enters sewers or public waters.

Other information : Dispose of materials or solid residues at an authorized site.

#### 6.4. Reference to other sections

For further information refer to section 13.

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

Precautions for safe handling : Ensure good ventilation of the work station. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Ground/bond container and receiving equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Flammable vapors may accumulate in the container. Use explosion-proof equipment. Wear personal protective equipment. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Take all necessary technical measures to avoid or minimize the release of the product on the workplace. Limit quantities of product at the minimum necessary for handling and limit the number of exposed workers. Provide local exhaust or general room ventilation. Floors, walls and other surfaces in the hazard area must be cleaned regularly. Avoid contact with skin and eyes. Do not breathe dust/fume/gas/mist/vapors/spray.

Hygiene measures : Separate working clothes from town clothes. Launder separately. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

#### 7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Ground/bond container and receiving equipment.

Storage conditions : Store at room temp. Store in a well-ventilated place. Keep cool. Keep container tightly closed. Store locked up.

### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

<b>Hollandes Fixative</b>	
No additional information available	
<b>Acetic Acid (Glacial) Technical Grade (64-19-7)</b>	
No additional information available	
<b>Picric Acid (88-89-1)</b>	
<b>USA - ACGIH - Occupational Exposure Limits</b>	
Local name	Picric acid
ACGIH TWA (mg/m <sup>3</sup> )	0.1 mg/m <sup>3</sup>
Remark (ACGIH)	TLV® Basis: Skin sens; dermatitis; eye irr
Regulatory reference	ACGIH 2020
<b>USA - OSHA - Occupational Exposure Limits</b>	
Local name	Picric acid
OSHA PEL (TWA) (mg/m <sup>3</sup> )	0.1 mg/m <sup>3</sup>
Regulatory reference (US-OSHA)	OSHA Annotated Table Z-1

# Hollandes Fixative

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

<b>Acetic acid, copper(2+) salt (142-71-2)</b>	
No additional information available	
<b>Formaldehyde (50-00-0)</b>	
No additional information available	
<b>Methyl alcohol (67-56-1)</b>	
<b>USA - ACGIH - Occupational Exposure Limits</b>	
ACGIH TWA (ppm)	200 ppm
ACGIH STEL (ppm)	250 ppm
ACGIH chemical category	Skin - potential significant contribution to overall exposure by the cutaneous route
<b>USA - ACGIH - Biological Exposure Indices</b>	
Biological Exposure Indices (BEI)	15 mg/l Parameter: Methanol - Medium: urine - Sampling time: end of shift (background, nonspecific)
<b>USA - OSHA - Occupational Exposure Limits</b>	
OSHA PEL (TWA) (mg/m <sup>3</sup> )	260 mg/m <sup>3</sup>
OSHA PEL (TWA) (ppm)	200 ppm
<b>USA - IDLH - Occupational Exposure Limits</b>	
US IDLH (ppm)	6000 ppm
<b>USA - NIOSH - Occupational Exposure Limits</b>	
NIOSH REL (TWA) (mg/m <sup>3</sup> )	260 mg/m <sup>3</sup>
NIOSH REL TWA [ppm]	200 ppm
NIOSH REL (STEL) (mg/m <sup>3</sup> )	325 mg/m <sup>3</sup>
NIOSH REL STEL [ppm]	250 ppm
US-NIOSH chemical category	Potential for dermal absorption

### 8.2. Appropriate engineering controls

Appropriate engineering controls : Ensure good ventilation of the work station.  
Environmental exposure controls : Avoid release to the environment.

### 8.3. Individual protection measures/Personal protective equipment

#### Hand protection:

Protective gloves

#### Eye protection:

Safety glasses

#### Skin and body protection:

Wear suitable protective clothing

#### Respiratory protection:

[In case of inadequate ventilation] wear respiratory protection.

#### Personal protective equipment symbol(s):



## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state : Liquid  
Appearance : Liquid.  
Color : Mixture contains one or more component(s) which have the following colour(s):  
clear Colorless

# Hollandes Fixative

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Odor	: There may be no odour warning properties, odour is subjective and inadequate to warn of overexposure. Mixture contains one or more component(s) which have the following odour: alcohol-like
Odor threshold	: No data available
pH	: No data available
Melting point	: no data
Freezing point	: No data available
Boiling point	: no data
Flash point	: no data
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: Not applicable.
Vapor pressure	: no data
Relative vapor density at 20°C	: no data
Relative density	: No data available
Solubility	: No data available
Partition coefficient n-octanol/water (Log Pow)	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosion limits	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available

### 9.2. Other information

No additional information available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

Highly flammable liquid and vapor.

### 10.2. Chemical stability

Stable under normal conditions.

### 10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

### 10.4. Conditions to avoid

Avoid contact with hot surfaces. Heat. No flames, no sparks. Eliminate all sources of ignition.

### 10.5. Incompatible materials

No additional information available

### 10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity (oral)	: Harmful if swallowed.
Acute toxicity (dermal)	: Not classified
Acute toxicity (inhalation)	: Harmful if inhaled.

ATE US (oral)	500 mg/kg body weight
ATE US (gases)	4500 ppmV/4h
ATE US (vapors)	11 mg/l/4h
ATE US (dust, mist)	1.5 mg/l/4h

### Acetic acid, copper(2+) salt (142-71-2)

LD50 oral rat	501 mg/kg
---------------	-----------

# Hollandes Fixative

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

<b>Acetic acid, copper(2+) salt (142-71-2)</b>	
LD50 dermal rat	> 2000 mg/kg body weight Animal: rat, Guideline: OECD Guideline 402 (Acute Dermal Toxicity), Guideline: EU Method B.3 (Acute Toxicity (Dermal))

<b>Methyl alcohol (67-56-1)</b>	
LD50 oral rat	6200 mg/kg
LC50 Inhalation - Rat [ppm]	22500 ppm (Exposure time: 8 h)

Skin corrosion/irritation	: Causes skin irritation.
Serious eye damage/irritation	: Not classified
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Suspected of causing cancer.

<b>Formaldehyde (50-00-0)</b>	
IARC group	1 - Carcinogenic to humans
National Toxicity Program (NTP) Status	Known Human Carcinogens

Reproductive toxicity : Not classified

STOT-single exposure : Not classified

<b>Formaldehyde (50-00-0)</b>	
STOT-single exposure	May cause drowsiness or dizziness.

<b>Methyl alcohol (67-56-1)</b>	
STOT-single exposure	Causes damage to organs.

STOT-repeated exposure : Not classified

Aspiration hazard	: Not classified
Viscosity, kinematic	: No data available
Symptoms/effects after skin contact	: May cause an allergic skin reaction. Irritation.
Symptoms/effects after eye contact	: Serious damage to eyes.

## SECTION 12: Ecological information

### 12.1. Toxicity

Ecology - general : The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment. Harmful to aquatic life.

<b>Methyl alcohol (67-56-1)</b>	
LC50 fish 1	28200 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through])
LC50 fish 2	> 100 mg/l (Exposure time: 96 h - Species: Pimephales promelas [static])

### 12.2. Persistence and degradability

No additional information available

### 12.3. Bioaccumulative potential

<b>Methyl alcohol (67-56-1)</b>	
BCF fish 1	< 10
Partition coefficient n-octanol/water (Log Pow)	-0.77

### 12.4. Mobility in soil

No additional information available

# Hollandes Fixative

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

### 12.5. Other adverse effects

No additional information available

## SECTION 13: Disposal considerations

### 13.1. Disposal methods

Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.  
Additional information : Flammable vapors may accumulate in the container.

## SECTION 14: Transport information

### Department of Transportation (DOT)

In accordance with DOT

Not applicable

### Transportation of Dangerous Goods

Not applicable

### Transport by sea

Not applicable

### Air transport

Not applicable

## SECTION 15: Regulatory information

### 15.1. US Federal regulations

#### Acetic Acid (Glacial) Technical Grade (64-19-7)

Listed on the United States TSCA (Toxic Substances Control Act) inventory  
Not subject to reporting requirements of the United States SARA Section 313

CERCLA RQ	5000 lb
-----------	---------

#### Picric Acid (88-89-1)

Listed on the United States TSCA (Toxic Substances Control Act) inventory  
Subject to reporting requirements of United States SARA Section 313

#### Acetic acid, copper(2+) salt (142-71-2)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

CERCLA RQ	100 lb
-----------	--------

#### Formaldehyde (50-00-0)

Listed on the United States TSCA (Toxic Substances Control Act) inventory  
Subject to reporting requirements of United States SARA Section 313  
Listed on EPA Hazardous Air Pollutant (HAPS)

CERCLA RQ	100 lb
-----------	--------

RQ (Reportable quantity, section 304 of EPA's List of Lists)	100 lb
--	--------

SARA Section 302 Threshold Planning Quantity (TPQ)	500 lb
--	--------

#### Methyl alcohol (67-56-1)

Listed on the United States TSCA (Toxic Substances Control Act) inventory  
Subject to reporting requirements of United States SARA Section 313  
Listed on EPA Hazardous Air Pollutant (HAPS)

CERCLA RQ	5000 lb
-----------	---------

### 15.2. International regulations

# Hollandes Fixative

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

### CANADA

<b>Acetic Acid (Glacial) Technical Grade (64-19-7)</b>
Listed on the Canadian DSL (Domestic Substances List)
<b>Picric Acid (88-89-1)</b>
Listed on the Canadian DSL (Domestic Substances List)
<b>Acetic acid, copper(2+) salt (142-71-2)</b>
Listed on the Canadian DSL (Domestic Substances List)
<b>Formaldehyde (50-00-0)</b>
Listed on the Canadian DSL (Domestic Substances List)
<b>Methyl alcohol (67-56-1)</b>
Listed on the Canadian DSL (Domestic Substances List)

### EU-Regulations

<b>Acetic acid, copper(2+) salt (142-71-2)</b>
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)
<b>Methyl alcohol (67-56-1)</b>
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

### National regulations

<b>Acetic acid, copper(2+) salt (142-71-2)</b>
Listed introduction on Australian Industrial Chemicals Introduction Scheme (AICIS Inventory) Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China) Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory Listed on the Japanese ISHL (Industrial Safety and Health Law) Listed on KECL/KECI (Korean Existing Chemicals Inventory) Listed on NZIoC (New Zealand Inventory of Chemicals) Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances) Japanese Poisonous and Deleterious Substances Control Law Japanese Pollutant Release and Transfer Register Law (PRTR Law) Listed on INSQ (Mexican National Inventory of Chemical Substances) Listed on the TCSI (Taiwan Chemical Substance Inventory)
<b>Formaldehyde (50-00-0)</b>
Listed on IARC (International Agency for Research on Cancer) Listed as carcinogen on NTP (National Toxicology Program)
<b>Methyl alcohol (67-56-1)</b>
Listed introduction on Australian Industrial Chemicals Introduction Scheme (AICIS Inventory) Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China) Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory Listed on the Japanese ISHL (Industrial Safety and Health Law) Listed on KECL/KECI (Korean Existing Chemicals Inventory) Listed on NZIoC (New Zealand Inventory of Chemicals) Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances) Japanese Poisonous and Deleterious Substances Control Law Listed on INSQ (Mexican National Inventory of Chemical Substances) Listed on CICR (Turkish Inventory and Control of Chemicals) Listed on the TCSI (Taiwan Chemical Substance Inventory)

### 15.3. US State regulations

<b>Formaldehyde (50-00-0)</b>					
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)	Maximum allowable dose level (MADL)
Yes	No	No	No	40 µg/day	



# Hollandes Fixative

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Methyl alcohol (67-56-1)					
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)	Maximum allowable dose level (MADL)
No	Yes	No	No		47000 µg/day inhalation

Component	State or local regulations
Acetic Acid (Glacial) Technical Grade(64-19-7)	U.S. - Massachusetts - Right To Know List; U.S. - New Jersey - Right to Know Hazardous Substance List; U.S. - Pennsylvania - RTK (Right to Know) List
Picric Acid(88-89-1)	U.S. - Massachusetts - Right To Know List; U.S. - New Jersey - Right to Know Hazardous Substance List; U.S. - Pennsylvania - RTK (Right to Know) List
Methyl alcohol(67-56-1)	U.S. - Massachusetts - Right To Know List; U.S. - New Jersey - Right to Know Hazardous Substance List; U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List; U.S. - Pennsylvania - RTK (Right to Know) List
Acetic acid, copper(2+) salt(142-71-2)	U.S. - Massachusetts - Right To Know List; U.S. - New Jersey - Right to Know Hazardous Substance List; U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List; U.S. - Pennsylvania - RTK (Right to Know) List
Formaldehyde(50-00-0)	U.S. - Massachusetts - Right To Know List; U.S. - New Jersey - Right to Know Hazardous Substance List; U.S. - Pennsylvania - RTK (Right to Know) List

### SECTION 16: Other information

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

#### Hazard Rating

- Health : 3 Serious Hazard - Major injury likely unless prompt action is taken and medical treatment is given
- Flammability : 1 Slight Hazard - Materials that must be preheated before ignition will occur. Includes liquids, solids and semi solids having a flash point above 200 F. (Class IIIB)
- Physical : 1 Slight Hazard - Materials that are normally stable but can become unstable (self-react) at high temperatures and pressures. Materials may react non-violently with water or undergo hazardous polymerization in the absence of inhibitors.

SDS US (GHS HazCom 2012)

*POLYSCIENCES, INC. provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. Individuals receiving this information must exercise their independent judgment in determining its appropriateness for a particular purpose. POLYSCIENCES, INC. makes no representations or warranties, either expressed or implied of merchantability, fitness for particular purposes with respect to the information set forth herein or to which the information refers. Accordingly, POLYSCIENCES, INC. will not be responsible for damages resulting from the use of or reliance upon this information.*