



Neutron®Pharmachemical Co.  
Manufacturer of Laboratory Chemical & Pharmaceutical Materials

## SAFETY DATA SHEET

In Accordance with ISO/DIS 11014

Page 1/11

Review Date 01/30/2018

Revision Date 01/30/2018

### 1 Identification of the Substance/Mixture and Company

**Product Name:** Hollande's Fixative

**Product Code:** 1.7090

**Product Description:** Tissue Fixative

**Manufacturer/Supplier:**

NEUTRON PHARMACHEMICAL CO

98, 9th Floor, Borjsaz Building, Azadi Ave, Tehran, Iran.T 021-66906732-3 -F 021-66581408

info@neutronco.com www.neutronco.com

**Emergency Telephone Number:**125

### 2 Hazards Identification

**Classification of the substance or mixture**



GHS08 Health hazard

Muta. 2 H341 Suspected of causing genetic defects.

Carc. 1A H350 May cause cancer.



GHS07

Acute Tox. 4 H302 Harmful if swallowed.

Skin Irrit. 2 H315 Causes skin irritation.

Eye Irrit. 2A H319 Causes serious eye irritation.

Skin Sens. 1 H317 May cause an allergic skin reaction.

**Label elements**

**GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).

**Hazard pictograms**



GHS07



GHS08

**Signal word** Danger

**Hazard-determining components of labeling:**

formaldehyde

2,4,6-trinitrophenol

# SAFETY DATA SHEET

## In Accordance with ISO/DIS 11014

Review Date 01/30/2018

Revision Date 01/30/2018

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**Product Name: Hollande's Fixative**


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Cupric Acetate

**Hazard statements**

Harmful if swallowed.

Causes skin irritation.

Causes serious eye irritation.

May cause an allergic skin reaction.

Suspected of causing genetic defects.

May cause cancer.

**Precautionary statements**

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 thoroughly after handling.

Do not eat, drink or smoke when using this product.

Contaminated work clothing must not be allowed out of the workplace.

Wear protective gloves/protective clothing/eye protection/face protection.

If swallowed: Call a poison center/doctor if you feel unwell.

If on skin: Wash with plenty of water.

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

If exposed or concerned: Get medical advice/attention.

Specific treatment (see on this label).

Rinse mouth.

If skin irritation or rash occurs: Get medical advice/attention.

If eye irritation persists: Get medical advice/attention.

Take off contaminated clothing and wash it before reuse.

Wash contaminated clothing before reuse.

Store locked up.

Dispose of contents/container in accordance with local/regional/national/international regulations.

**Classification system:****NEPA ratings (scale 0 - 4)**

Health = 3

Fire = 2

Reactivity = 0

**HMIS-ratings (scale 0 - 4)**

Health = 3

Fire = 2

Reactivity = 0

**Other hazards****Results of PBT and vPvB assessment****PBT:** Not applicable.**vPvB:** Not applicable.

### 3 Composition

**Chemical characterization: Mixtures****Description:** Mixture of the substances listed below with nonhazardous additions.

| <b>Dangerous components:</b> |                |            |
|------------------------------|----------------|------------|
| 50-00-0                      | formaldehyde   | ≥5-≤10%    |
| 6046-93-1                    | Cupric Acetate | ≥0.1-≤2.5% |

# SAFETY DATA SHEET

## In Accordance with ISO/DIS 11014

Review Date 01/30/2018

Revision Date 01/30/2018

**Product Name: Hollande's Fixative**

|         |                      |            |
|---------|----------------------|------------|
| 88-89-1 | 2,4,6-trinitrophenol | ≥0.1-≤2.5% |
| 64-19-7 | acetic acid          | ≥0.1-≤2.5% |

### 4 First Aid Measures

#### Description of first aid measures

##### General information:

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

##### After inhalation:

Supply fresh air and to be sure call for a doctor.

In case of unconsciousness place patient stably in side position for transportation.

**After skin contact:** Immediately wash with water and soap and rinse thoroughly.

**After eye contact:** Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

**After swallowing:** Immediately call a doctor.

##### Information for doctor:

**Most important symptoms and effects, both acute and delayed:** No further relevant information available.

##### Indication of any immediate medical attention and special treatment needed:

No further relevant information available.

### 5 Firefighting Measures

#### Extinguishing media

**Suitable extinguishing agents:** Use fire fighting measures that suit the environment.

**Special hazards arising from the substance or mixture:** No further relevant information available.

#### Advice for firefighters

**Protective equipment:** No special measures required.

### 6 Accidental Release Measures

**Personal precautions, protective equipment and emergency procedures:** Not required.

#### Environmental precautions:

Dilute with plenty of water.

Do not allow to enter sewers/ surface or ground water.

#### Methods and material for containment and cleaning up:

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

#### Reference to other sections

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

#### Protective Action Criteria for Chemicals

##### PAC-1:

|           |                      |                       |
|-----------|----------------------|-----------------------|
| 50-00-0   | formaldehyde         | 0.90 ppm              |
| 6046-93-1 | Cupric Acetate       | 9.4 mg/m <sup>3</sup> |
| 88-89-1   | 2,4,6-trinitrophenol | 0.3 mg/m <sup>3</sup> |
| 64-19-7   | acetic acid          | 5 ppm                 |

# SAFETY DATA SHEET

## In Accordance with ISO/DIS 11014

Review Date 01/30/2018

Revision Date 01/30/2018

**Product Name: Hollande's Fixative**

|               |                      |                       |
|---------------|----------------------|-----------------------|
| <b>PAC-2:</b> |                      |                       |
| 50-00-0       | formaldehyde         | 14 ppm                |
| 6046-93-1     | Cupric Acetate       | 23 mg/m <sup>3</sup>  |
| 88-89-1       | 2,4,6-trinitrophenol | 17 mg/m <sup>3</sup>  |
| 64-19-7       | acetic acid          | 35 ppm                |
| <b>PAC-3:</b> |                      |                       |
| 50-00-0       | formaldehyde         | 56 ppm                |
| 6046-93-1     | Cupric Acetate       | 140 mg/m <sup>3</sup> |
| 88-89-1       | 2,4,6-trinitrophenol | 100 mg/m <sup>3</sup> |
| 64-19-7       | acetic acid          | 250 ppm               |

## 7 Handling and Storage

**Handling:****Precautions for safe handling:** Ensure good ventilation/exhaustion at the workplace.**Information about protection against explosions and fires:** No special measures required.**Conditions for safe storage, including any incompatibilities****Storage:****Requirements to be met by storerooms and receptacles:** No special requirements.**Information about storage in one common storage facility:** Not required.**Further information about storage conditions:** Keep receptacle tightly sealed.**Specific end use(s):** No further relevant information available.

## 8 Exposure Controls/Personal Protection

**Additional information about design of technical systems:** No further data; see item 7.**Control parameters****Components with limit values that require monitoring at the workplace:**

The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit.

At this time, the remaining constituent has no known exposure limits.

|                             |                                                                                                                       |
|-----------------------------|-----------------------------------------------------------------------------------------------------------------------|
| <b>50-00-0 formaldehyde</b> |                                                                                                                       |
| PEL                         | Short-term value: 2 ppm<br>Long-term value: 0.75 ppm<br>see 29 CFR 1910.1048(c)                                       |
| REL                         | Long-term value: 0.016 ppm<br>Ceiling limit value: 0.1* ppm<br>*15-min; See Pocket Guide App. A                       |
| TLV                         | Short-term value: 0.37 mg/m <sup>3</sup> , 0.3 ppm<br>Long-term value: 0.12 mg/m <sup>3</sup> , 0.1 ppm<br>DSEN; RSEN |

# SAFETY DATA SHEET

## In Accordance with ISO/DIS 11014

Review Date 01/30/2018

Revision Date 01/30/2018

**Product Name: Hollande's Fixative**

| <b>88-89-1 2,4,6-trinitrophenol</b> |                                                                                                   |
|-------------------------------------|---------------------------------------------------------------------------------------------------|
| PEL                                 | Long-term value: 0.1 mg/m <sup>3</sup><br>Skin                                                    |
| REL                                 | Short-term value: 0.3 mg/m <sup>3</sup><br>Long-term value: 0.1 mg/m <sup>3</sup><br>Skin         |
| TLV                                 | Long-term value: 0.1 mg/m <sup>3</sup>                                                            |
| <b>64-19-7 acetic acid</b>          |                                                                                                   |
| PEL                                 | Long-term value: 25 mg/m <sup>3</sup> , 10 ppm                                                    |
| REL                                 | Short-term value: 37 mg/m <sup>3</sup> , 15 ppm<br>Long-term value: 25 mg/m <sup>3</sup> , 10 ppm |
| TLV                                 | Short-term value: 37 mg/m <sup>3</sup> , 15 ppm<br>Long-term value: 25 mg/m <sup>3</sup> , 10 ppm |

**Additional information:** The lists that were valid during the creation were used as basis.

**Exposure controls:****Personal protective equipment:****General protective and hygienic measures:**

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing.

Wash hands before breaks and at the end of work.

Store protective clothing separately.

Avoid contact with the eyes and skin.

**Breathing equipment:**

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

**Protection of hands:**

Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

**Material of gloves:**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

**Penetration time of glove material:**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

**Eye protection:** Tightly sealed goggles

## 9 Physical and Chemical Properties

**Information on basic physical and chemical properties****General Information****Appearance**

|               |                           |
|---------------|---------------------------|
| <b>Form:</b>  | Liquid                    |
| <b>Color:</b> | Dark green                |
| <b>Odor:</b>  | Pungent, makes eyes water |

# SAFETY DATA SHEET

## In Accordance with ISO/DIS 11014

Review Date 01/30/2018

Revision Date 01/30/2018

---

**Product Name: Hollande's Fixative**


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|                                                 |                                                                                                     |
|-------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| <b>Odor threshold:</b>                          | Not determined.                                                                                     |
| <b>pH-value:</b>                                | Not determined.                                                                                     |
| <b>Change in condition</b>                      |                                                                                                     |
| <b>Melting point/Melting range:</b>             | Undetermined.                                                                                       |
| <b>Boiling point/Boiling range:</b>             | Undetermined.                                                                                       |
| <b>Flash point:</b>                             | Not applicable.                                                                                     |
| <b>Flammability (solid, gaseous):</b>           | Not applicable.                                                                                     |
| <b>Ignition temperature:</b>                    | ~300 °C (~572 °F)                                                                                   |
| <b>Decomposition temperature:</b>               | Not determined.                                                                                     |
| <b>Auto igniting:</b>                           | Product is not selfigniting.                                                                        |
| <b>Danger of explosion:</b>                     | Product does not present an explosion hazard.<br>Forms very sensitive explosive metallic compounds. |
| <b>Explosion limits:</b>                        |                                                                                                     |
| <b>Lower:</b>                                   | Not determined.                                                                                     |
| <b>Upper:</b>                                   | Not determined.                                                                                     |
| <b>Vapor pressure at 20 °C (68 °F):</b>         | 23 hPa (17.3 mm Hg)                                                                                 |
| <b>Density:</b>                                 | Not determined.                                                                                     |
| <b>Relative density:</b>                        | Not determined.                                                                                     |
| <b>Vapour density:</b>                          | Not determined.                                                                                     |
| <b>Evaporation rate:</b>                        | Not determined.                                                                                     |
| <b>Solubility in / Miscibility with Water:</b>  | Fully miscible.                                                                                     |
| <b>Partition coefficient (n-octanol/water):</b> | Not determined.                                                                                     |
| <b>Dynamic:</b>                                 | Not determined.                                                                                     |
| <b>Kinematic:</b>                               | Not determined.                                                                                     |
| <b>Other information:</b>                       | No further relevant information available.                                                          |

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## 10 Stability and Reactivity

**Reactivity:** No further relevant information available.**Chemical stability:****Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.**Possibility of hazardous reactions:** No dangerous reactions known.**Conditions to avoid:** No further relevant information available.**Incompatible materials:** No further relevant information available.**Hazardous decomposition products:** No dangerous decomposition products known.

# SAFETY DATA SHEET

## In Accordance with ISO/DIS 11014

Review Date 01/30/2018

Revision Date 01/30/2018

Product Name: Hollande's Fixative

## 11 Toxicology Information

### Information on toxicological effects

#### Acute toxicity:

|                                                             |      |                  |
|-------------------------------------------------------------|------|------------------|
| <b>LD/LC50 values that are relevant for classification:</b> |      |                  |
| <b>50-00-0 formaldehyde</b>                                 |      |                  |
| Oral                                                        | LD50 | >200 mg/kg (rat) |

#### Primary irritant effect:

**On the skin:** Irritant to skin and mucous membranes.

**On the eye:** Irritating effect.

**Sensitization:** Sensitization possible through skin contact.

#### Additional toxicological information:

The product shows the following dangers according to internally approved calculation methods for preparations:

Harmful

Irritant

#### Carcinogenic categories

##### IARC (International Agency for Research on Cancer)

|         |              |   |
|---------|--------------|---|
| 50-00-0 | formaldehyde | 1 |
|---------|--------------|---|

##### NTP (National Toxicology Program)

|         |              |   |
|---------|--------------|---|
| 50-00-0 | formaldehyde | K |
|---------|--------------|---|

##### OSHA-Ca (Occupational Safety & Health Administration)

|         |              |  |
|---------|--------------|--|
| 50-00-0 | formaldehyde |  |
|---------|--------------|--|

## 12 Ecological Information

### Toxicity:

**Aquatic toxicity:** No further relevant information available.

**Persistence and degradability:** No further relevant information available.

### Behavior in environmental systems:

**Bioaccumulative potential:** No further relevant information available.

**Mobility in soil:** No further relevant information available.

### Additional ecological information:

#### General notes:

Water hazard class 2 (Self-assessment): hazardous for water

Do not allow product to reach ground water, water course or sewage system.

Danger to drinking water if even small quantities leak into the ground.

### Results of PBT and vPvB assessment

**PBT:** Not applicable.

**vPvB:** Not applicable.

**Other adverse effects:** No further relevant information available.

## 13 Disposal Considerations

### Uncleaned packagings:

**Recommendation:** Disposal must be made according to official regulations.

# SAFETY DATA SHEET

## In Accordance with ISO/DIS 11014

Review Date 01/30/2018

Revision Date 01/30/2018

**Product Name: Hollande's Fixative**
**Recommended cleansing agent:** Water, if necessary with cleansing agents.

### 14 Transport Information

|                                                                                       |                 |
|---------------------------------------------------------------------------------------|-----------------|
| <b>UN-Number</b><br><b>DOT, ADR, ADN, IMDG, IATA</b>                                  | Not applicable  |
| <b>UN proper shipping name</b><br><b>DOT, ADR, ADN, IMDG, IATA</b>                    | Not applicable  |
| <b>Transport hazard class(es)</b><br><b>DOT, ADR, ADN, IMDG, IATA</b><br><b>Class</b> | Not applicable  |
| <b>Packing group</b><br><b>DOT, ADR, IMDG, IATA</b>                                   | Not applicable  |
| <b>Environmental hazards</b><br><b>Marine pollutant:</b>                              | No              |
| <b>Special precautions for user:</b>                                                  | Not applicable. |
| <b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code:</b>       | Not applicable. |
| <b>UN "Model Regulation":</b>                                                         | Not applicable  |

### 15 Regulatory Information

**Safety, health and environmental regulations/legislation specific for the substance or mixture**  
**SARA**

|                                                            |                                                     |
|------------------------------------------------------------|-----------------------------------------------------|
| <b>Section 355 (extremely hazardous substances):</b>       |                                                     |
| 50-00-0                                                    | formaldehyde                                        |
| <b>Section 313 (Specific toxic chemical listings):</b>     |                                                     |
| 50-00-0                                                    | formaldehyde                                        |
| 88-89-1                                                    | 2,4,6-trinitrophenol                                |
| <b>TSCA (Toxic Substances Control Act):</b>                |                                                     |
| 50-00-0                                                    | formaldehyde                                        |
| 88-89-1                                                    | 2,4,6-trinitrophenol                                |
| 64-19-7                                                    | acetic acid                                         |
| 7732-18-5                                                  | water, distilled, conductivity or of similar purity |
| <b>TSCA new (21st Century Act) (Substances not listed)</b> |                                                     |
| 6046-93-1                                                  | Cupric Acetate                                      |
| 88-89-1                                                    | 2,4,6-trinitrophenol                                |
| <b>Proposition 65</b>                                      |                                                     |
| <b>Chemicals known to cause cancer:</b>                    |                                                     |
| 50-00-0                                                    | formaldehyde                                        |

# SAFETY DATA SHEET

## In Accordance with ISO/DIS 11014

Review Date 01/30/2018

Revision Date 01/30/2018

**Product Name: Hollande's Fixative****Chemicals known to cause reproductive toxicity for females:**

None of the ingredients are listed.

**Chemicals known to cause reproductive toxicity for males:**

None of the ingredients are listed.

**Chemicals known to cause developmental toxicity:**

None of the ingredients are listed.

**Carcinogenic categories****EPA (Environmental Protection Agency)**

50-00-0 formaldehyde

B1

**TLV (Threshold Limit Value established by ACGIH)**

50-00-0 formaldehyde

A2

**NIOSH-Ca (National Institute for Occupational Safety and Health)**

50-00-0 formaldehyde

**GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).**Hazard pictograms**

GHS07 GHS08

**Signal word** Danger**Hazard-determining components of labeling:**

formaldehyde

2,4,6-trinitrophenol

Cupric Acetate

**Hazard statements**

Harmful if swallowed.

Causes skin irritation.

Causes serious eye irritation.

May cause an allergic skin reaction.

Suspected of causing genetic defects.

May cause cancer.

**Precautionary statements**

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 thoroughly after handling.

Do not eat, drink or smoke when using this product.

Contaminated work clothing must not be allowed out of the workplace.

Wear protective gloves/protective clothing/eye protection/face protection.

If swallowed: Call a poison center/doctor if you feel unwell.

If on skin: Wash with plenty of water.

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

If exposed or concerned: Get medical advice/attention.

Specific treatment (see on this label).

Rinse mouth.

# SAFETY DATA SHEET

## In Accordance with ISO/DIS 11014

Review Date 01/30/2018

Revision Date 01/30/2018

---

**Product Name: Hollande's Fixative**


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If skin irritation or rash occurs: Get medical advice/attention.  
 If eye irritation persists: Get medical advice/attention.  
 Take off contaminated clothing and wash it before reuse.  
 Wash contaminated clothing before reuse.  
 Store locked up.  
 Dispose of contents/container in accordance with local/regional/national/international regulations.

**National regulations:****Additional classification according to Decree on Hazardous Materials:**

Carcinogenic hazardous material group III (dangerous).

**Information about limitation of use:**

Workers are not allowed to be exposed to the hazardous carcinogenic materials contained in this preparation. Exceptions can be made by the authorities in certain cases.

**Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

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## 16 Other Information

This information contained herein is believed to be accurate but is not warranted to be so. Data and calculations are based on information furnished by the manufacturer of the product and manufacturers of the components of the product. Users are advised to confirm in advance of need that information is current, applicable and suited to the circumstances of use. Vendor assumes no responsibility for injury to vendee or third persons proximately caused by the material if reasonable safety procedures are not adhered to as stipulated in the data sheet. Furthermore, vendor assumes no responsibility for injury caused by abnormal use of the material even if reasonable safety procedures are followed. Any questions regarding this product should be directed to the manufacturer of the product as described in Section 1.

**Department issuing SDS:** Regulatory Department

**Contact:** Phone (800) 860-4073

**Date of preparation / last revision** 01/30/2018 / -

**Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)  
 IMDG: International Maritime Code for Dangerous Goods  
 DOT: US Department of Transportation  
 IATA: International Air Transport Association  
 ACGIH: American Conference of Governmental Industrial Hygienists  
 EINECS: European Inventory of Existing Commercial Chemical Substances  
 ELINCS: European List of Notified Chemical Substances  
 CAS: Chemical Abstracts Service (division of the American Chemical Society)  
 NFPA: National Fire Protection Association (USA)  
 HMIS: Hazardous Materials Identification System (USA)  
 LC50: Lethal concentration, 50 percent  
 LD50: Lethal dose, 50 percent  
 PBT: Persistent, Bioaccumulative and Toxic  
 vPvB: very Persistent and very Bioaccumulative  
 NIOSH: National Institute for Occupational Safety  
 OSHA: Occupational Safety & Health  
 TLV: Threshold Limit Value  
 PEL: Permissible Exposure Limit  
 REL: Recommended Exposure Limit  
 Acute Tox. 4: Acute toxicity – Category 4  
 Skin Irrit. 2: Skin corrosion/irritation – Category 2  
 Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A  
 Skin Sens. 1: Skin sensitisation – Category 1  
 Muta. 2: Germ cell mutagenicity – Category 2  
 Carc. 1A: Carcinogenicity – Category 1A

**SAFETY DATA SHEET**  
**In Accordance with ISO/DIS 11014**

Review Date 01/30/2018

Revision Date 01/30/2018

---

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