

# Material Safety Data Sheet

Product name

Collodion solution

## 1. Identification of the substance/mixture and of the company/undertaking

1.1. Product name	Collodion solution
1.2. CAS-No.	9004-70-0
1.3. Relevant identified uses of the substance or mixture and uses advised against	
Identified uses	Laboratory chemicals, Synthesis of substances
1.4. Details of the supplier of the safety data sheet	
Company	Glory Global CO.,LTD
Address	C-208, 10, Nowon-ro 15-gil, Nowon-gu, Seoul, Korea
Emergency Phone	+82 2 6223 0862

## 2. Hazards identification

2.1. Classification of the substance or mixture GHS	- Flammable liquids (Category 1), H224
Classification in accordance with 29 CFR 1910 (OSHA HCS)	- Eye irritation (Category 2A), H319 - Specific target organ toxicity – single exposure (Category 3), Central nervous system, H336 - For the full text of the H-Statements mentioned in this Section, see Section 16.

### 2.2. GHS Label elements, including precautionary

Pictogram



Signal word

Danger

H224

Extremely flammable liquid and vapour.

H319

Causes serious eye irritation.

H336

May cause drowsiness or dizziness.

### 2.3. Precautionary statement(s)

P210

Keep away from heat/sparks/open flames/hot surfaces. No smoking.

P233

Keep container tightly closed.

P240

Ground/bond container and receiving equipment.

P241

Use explosion-proof electrical/ ventilating/ lighting equipment.

P242

Use only non-sparking tools.

P243

Take precautionary measures against static discharge.

P261

Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.

P264

Wash skin thoroughly after handling.

P271

Use only outdoors or in a well-ventilated area.

P280

Wear protective gloves/ eye protection/ face protection.

P303 + P361 + P353

IF ON SKIN (or hair): Take off immediately all contaminated clothing.

P304 + P340 + P312

IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P305 + P351 + P338

IF IN EYES: Rinse cautiously with water for several minutes.

P337 + P313

Remove contact lenses, if present and easy to do. Continue rinsing.

P370 + P378

If eye irritation persists: Get medical advice/ attention.

P403 + P233

In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

P403 + P235

Store in a well-ventilated place. Keep container tightly closed.

P405

Store in a well-ventilated place. Keep cool.

P501

Store locked up.

Dispose of contents/ container to an approved waste disposal plant.

### 2.4. Hazards not otherwise classified (HNOC) or not covered by GHS

- Explosive when dry., May form explosive peroxides.,
- Repeated exposure may cause skin dryness or cracking.

## 3. Composition/information on ingredients

### 3.1. Substances

Synonyms

Cellulose nitrate

Formula

C6H12O2

Molecular weight 116.16 g/mol  
 CAS No 123-86-4  
 EC-No. 204-658-1

Component	Classification	Concentration
<b>Diethyl ether</b>		
CAS-No.: 60-29-7 EC-No.: 200-467-2	Flam. Liq. 1; Acute Tox. 4; STOT SE 3: H224, H302, H336 Concentration limits: >= 20 %: STOT SE 3, H336;	≥50 – ≤70 %
<b>Ethanol</b>		
CAS-No.: 64-17-5 EC-No.: 200-578-6	Flam. Liq. 2; Eye Irrit. 2A; H225, H319	≥30 – ≤50 %

Additional Information

For the full text of the H-Statements mentioned in this Section, see Section 16.

#### 4. First aid measures

##### 4.1. Description of first aid measures

General advice

- Consult a physician. Show this safety data sheet to the doctor in attendance.
- Move out of dangerous area.

If inhaled

- If breathed in, move person into fresh air. If not breathing, give artificial respiration.
- Consult a physician.

In case of skin contact

- Wash off with soap and plenty of water. Consult a physician.

In case of eye contact

- Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed

- Do NOT induce vomiting. Never give anything by mouth to an unconscious person.
- Rinse mouth with water. Consult a physician.

##### 4.2. Most important symptoms and effects, both acute and delayed

- The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

##### 4.3. Indication of any immediate medical attention and special treatment needed

- No data available

#### 5. Firefighting measures

##### 5.1. Extinguishing media

Suitable extinguishing media

- Dry powder Dry sand

Unsuitable extinguishing media

- Do NOT use water jet.

##### 5.2. Special hazards arising from the substance or mixture

- Carbon oxides, Nitrogen oxides (NOx)

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

- Wear self-contained breathing apparatus for firefighting if necessary.

##### 5.4. Further information

- Use water spray to cool unopened containers.

#### 6. Accidental release measures

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

- Use personal protective equipment. Avoid breathing vapours, mist or gas.
- Ensure adequate ventilation. Remove all sources of ignition. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.
- For personal protection see section 8.

##### 6.2. Environmental precautions

- Prevent further leakage or spillage if safe to do so.
- Do not let product enter drains. Discharge into the environment must be avoided.

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

- Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to

##### 6.4. Reference to other sections

- For disposal see section 13.

#### 7. Handling and storage

##### 7.1. Precautions for safe handling

- Avoid inhalation of vapour or mist.
- Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.
- For precautions see section 2.2.

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

- Keep container tightly closed in a dry and well-ventilated place.
- Containers which are opened must be carefully resealed and kept upright to prevent leakage.
- Storage class (TRGS 510): 3: Flammable liquids

##### 7.3. Specific end use(s)

- Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

#### 8. Exposure controls/personal protection

##### 8.1. Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Diethyl ether	60-29-7	TWA	400 ppm	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Central Nervous System impairment Upper Respiratory Tract irritation		
		STEL	500 ppm	USA. ACGIH Threshold Limit Values (TLV)
		Central Nervous System impairment Upper Respiratory Tract irritation		
		See Appendix D – Substances with No Established RELs		
		TWA	400 ppm 1,200 mg/m <sup>3</sup>	USA. Occupational Exposure Limits (OSHA) – Table Z-1 Limits for Air Contaminants
		The value in mg/m <sup>3</sup> is approximate.		
		PEL	400 ppm 1,200 mg/m <sup>3</sup>	USA. Occupational Exposure Limits (OSHA) – Table Z-1 Limits for Air Contaminants
		STEL	500 ppm 1,500 mg/m <sup>3</sup>	California permissible exposure limits for chemical contaminants (Title 8, Article 107)
Ethanol	64-17-5	TWA	1,000 ppm 1,900 mg/m <sup>3</sup>	USA. OSHA – TABLE Z-1 Limits for Air Contaminants – 1910.1000
		TWA	1,000 ppm 1,900 mg/m <sup>3</sup>	USA. Occupational Exposure Limits (OSHA) – Table Z-1 Limits for Air Contaminants
		The value in mg/m <sup>3</sup> is approximate.		
		STEL	1,000 ppm	USA. ACGIH Threshold Limit Values (TLV)
		Upper Respiratory Tract irritation Confirmed animal carcinogen with unknown relevance to humans		
		TWA	1,000 ppm 1,900 mg/m <sup>3</sup>	USA. NIOSH Recommended Exposure Limits
		PEL	1,000 ppm 1,900 mg/m <sup>3</sup>	California permissible exposure limits for chemical contaminants (Title 8, Article 107)

## 8.2. Exposure controls

Appropriate engineering controls

– Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

a) Eye/face protection

– Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

b) Skin protection

– Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product.

c) Body Protection

– Dispose of contaminated gloves after use in accordance with applicable laws and  
– Impervious clothing, Flame retardant antistatic protective clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

d) Respiratory protection

– Where risk assessment shows air-purifying respirators are appropriate use a fullface respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or

e) Control of environmental exposure

– Prevent further leakage or spillage if safe to do so. Do not let product enter drains.  
– Discharge into the environment must be avoided.

## 9. Physical and chemical properties

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

Appearance	Form: liquid
Odour	No data available
Odour Threshold	No data available
pH	No data available
Melting / freezing point	No data available
Initial Boiling Point and Boiling Range	34 °C 93 °F
Flash point	-52 °C (-62 °F) – closed cup
Evaporation rate	No data available
Flammability (solid, gas)	No data available

Upper/lower flammability or explosive limits	Upper explosion limit: 36 %(V) Lower explosion limit: 1.7 %(V)
Vapour pressure	576 hPa at 20 °C (68 °F)
Vapour density	No data available
Relative Density	No data available
Water solubility	insoluble
Partition coefficient n-octanol/water	No data available
Auto-ignition temperature	ca.170 °C (ca.338 °F)
Decomposition temperature	No data available
Viscosity	No data available
Explosive properties	No data available
Oxidizing properties	No data available
9.2. Other safety information	No data available

## 10. Stability and reactivity

10.1. Reactivity	– No data available
10.2. Chemical stability	– Stable under recommended storage conditions.
10.3. Possibility of hazardous reactions	– Vapours may form explosive mixture with air.
10.4. Conditions to avoid	– Heat, flames and sparks.
10.5. Incompatible materials	– Strong oxidizing agents, Strong reducing agents, Strong bases
10.6. Hazardous decomposition products	– Hazardous decomposition products formed under fire conditions.: Carbon oxides – Other decomposition products: No data available – In the event of fire: see section 5

## 11. Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity	No data available Inhalation: No data available Dermal: No data available No data available
Skin corrosion/irritation	No data available
Serious eye damage/eye irritation	No data available
Respiratory or skin sensitisation	No data available
Germ cell mutagenicity	No data available

### 11.2. Carcinogenicity

IARC	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
NTP	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA	No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

11.3. Reproductive toxicity	No data available
11.4. Specific target organ toxicity – single exposure	No data available
11.5. Specific target organ toxicity – repeated exposure	No data available
11.6. Aspiration hazard	No data available
11.7. Additional Information	RTECS: Not available

## 12. Ecological information

12.1. Toxicity	– No data available
12.2. Persistence and degradability	– No data available
12.3. Bioaccumulative potential	– No data available
12.4. Mobility in soil	– No data available
12.5. Results of PBT and vPvB assessment	– PBT/vPvB assessment not available as chemical safety assessment not required/not conducted
12.6 Other adverse effects	– No data available

## 13. Disposal considerations

### 13.1 Waste treatment methods

Product	– Offer surplus and non-recyclable solutions to a licensed disposal company. – Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. – Contact a licensed professional waste disposal service to dispose of this material.
Contaminated packaging	– Dispose of as unused product.

## 14. Transport information

14.1. DOT (US)

- UN number: 1993
- Class: 3
- Packing group: I
- Proper shipping name: Flammable liquids, n.o.s. (Diethyl ether)
- Reportable Quantity (RQ): 200 lbs
- Reportable Quantity (RQ): 100 lbs
- Poison Inhalation Hazard: No

14.2. IMDG

- UN number: 1993
- Class: 3
- Packing group: I
- EMS-No: F-E, S-E
- Proper shipping name: FLAMMABLE LIQUID, N.O.S. (Diethyl ether)

14.3. IATA (Country variations may apply)

- UN number: 1993
- Class: 3
- Packing group: I
- Proper shipping name: Flammable liquid, n.o.s. (Diethyl ether)

15. Regulatory information

15.1. SARA 302 Components

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

15.2. SARA 313 Components

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section

15.3. SARA 311/312 Hazards

Fire Hazard, Acute Health Hazard, Chronic Health Hazard

15.4. Reportable Quantity

F003 lbs

15.4. Massachusetts Right To Know Components

No components are subject to the Massachusetts Right to Know Act.

15.5. Pennsylvania Right To Know Components

- Diethyl ether
- CAS-No.: 60-29-7
- Revision Date: 1993-02-16
- Ethanol
- CAS-No.: 64-17-5
- Revision Date: 1993-02-16
- Cellulose nitrate
- CAS-No.: 9004-70-0
- Revision Date: 1989-08-11

16. Other information

16.1. Further information

- Always work safely around open hatches on bulk tanks. The low density makes flotation difficult for immersed person.

