

# SAFETY DATA SHEET

(GHS, Appendix 4)

## SECTION 1 : IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

### 1.1. Product identifier

Product name : Furaneol  
EC N° : 222-908-8  
CAS N° : 3658-77-3

### 1.2. Relevant identified uses of the substance or mixture and uses advised against

Industrial-grade aromatic raw material, not intended for retail sale

### 1.3. Details of the supplier of the safety data sheet

Registered company name : Aromatics Original Material Co., Ltd.  
Address : 3/8 1st floor Bangwaek Rd, Bangpai, Bangkae, Bangkok 10160 Thailand.

## SECTION 2 : HAZARDS IDENTIFICATION

### 2.1. Classification of the substance or mixture

#### GHS compliant.

Acute oral toxicity, Category 4 (Acute Tox. 4, H302).  
Skin corrosion, Category 1B (Skin Corr. 1B, H314).  
Serious eye damage, Category 1 (Eye Dam. 1, H318).  
Skin sensitisation, Category 1A (Skin Sens. 1A, H317).  
Hazardous to the aquatic environment - Acute hazard, Category 2 (Aquatic Acute 2, H401).  
This substance does not present a physical hazard. Refer to the recommendations regarding the other products present on the site.

### 2.2. Label elements

#### GHS compliant.

Hazard pictograms :



GHS05



GHS07

Signal Word :

DANGER

Product identifiers (list of classified components) :

CAS 3658-77-3      4-HYDROXY-2,5-DIMETHYL-3(2H)-FURANONE

Hazard statements :

H302      Harmful if swallowed.  
H314      Causes severe skin burns and eye damage.

H317	May cause an allergic skin reaction.
H401	Toxic to aquatic life.
Precautionary statements - Prevention :	
P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/ ...
Precautionary statements - Response :	
P302 + P352	IF ON SKIN: Wash with plenty of water/...
P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER/doctor/...
P363	Wash contaminated clothing before reuse.
Precautionary statements - Disposal :	
P501	Dispose of contents/container in accordance with local regulation.

### 2.3. Other hazards

## SECTION 3 : COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1. Substances

#### Composition :

Identification	Classification GHS	Note	%
CAS: 3658-77-3 EC: 222-908-8 4-HYDROXY-2,5-DIMETHYL-3(2H)-FURANONE	GHS05, GHS07 Dgr Acute Tox. 4, H302 Skin Corr. 1B, H314 Skin Sens. 1A, H317 Eye Dam. 1, H318 Aquatic Acute 2, H401		100%

## SECTION 4 : FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.

NEVER induce swallowing by an unconscious person.

### 4.1. Description of first aid measures

#### In the event of splashes or contact with eyes :

Wash thoroughly with fresh, clean water for 15 minutes holding the eyelids open.

Regardless of the initial state, refer the patient to an ophthalmologist and show him the label.

If there is any redness, pain or visual impairment, consult an ophthalmologist.

#### In the event of splashes or contact with skin :

Remove contaminated clothing and wash the skin thoroughly with soap and water or a recognised cleaner.

Remove any soiled or splashed clothing immediately.

Watch out for any remaining product between skin and clothing, watches, shoes, etc.

In the event of an allergic reaction, seek medical attention.

If the contaminated area is widespread and/or there is damage to the skin, a doctor must be consulted or the patient transferred to hospital.

#### In the event of swallowing :

Do not give the patient anything orally.

In the event of swallowing, if the quantity is small (no more than one mouthful), rinse the mouth with water, administer activated medical charcoal and consult a doctor.

Keep the person exposed at rest. Do not force vomiting.

Seek medical attention immediately, showing the label.

If swallowed accidentally, call a doctor to ascertain whether observation and hospital care will be necessary. Show the label.

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

No data available.

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

No data available.

### **SECTION 5 : FIREFIGHTING MEASURES**

Non-flammable.

#### **5.1. Extinguishing media**

##### **Suitable methods of extinction**

In the event of a fire, use :

- sprayed water or water mist
- foam
- multipurpose ABC powder
- BC powder
- carbon dioxide (CO<sub>2</sub>)

##### **Unsuitable methods of extinction**

In the event of a fire, do not use :

- water jet

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

A fire will often produce a thick black smoke. Exposure to decomposition products may be hazardous to health.

Do not breathe in smoke.

In the event of a fire, the following may be formed :

- carbon monoxide (CO)
- carbon dioxide (CO<sub>2</sub>)

#### **5.3. Advice for firefighters**

No data available.

### **SECTION 6 : ACCIDENTAL RELEASE MEASURES**

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

Consult the safety measures listed under headings 7 and 8.

##### **For non first aid worker**

Avoid any contact with the skin and eyes.

##### **For first aid worker**

First aid workers will be equipped with suitable personal protective equipment (See section 8).

#### **6.2. Environmental precautions**

Contain and control the leaks or spills with non-combustible absorbent materials such as sand, earth, vermiculite, diatomaceous earth in drums for waste disposal.

Prevent any material from entering drains or waterways.

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

Retrieve the product by mechanical means (sweeping/vacuuming).

#### **6.4. Reference to other sections**

No data available.

## SECTION 7 : HANDLING AND STORAGE

Requirements relating to storage premises apply to all facilities where the substance is handled.

Individuals with a history of skin sensitisation should not, under any circumstance, handle this substance.

### 7.1. Precautions for safe handling

Always wash hands after handling.

Remove and wash contaminated clothing before re-using.

Ensure that there is adequate ventilation, especially in confined areas.

Provide emergency showers and eye wash stations will be required in facilities where the substance is handled constantly.

### Fire prevention :

Handle in well-ventilated areas.

Prevent access by unauthorised personnel.

### Recommended equipment and procedures :

For personal protection, see section 8.

Observe precautions stated on label and also industrial safety regulations.

Do not breathe in dust.

Packages which have been opened must be reclosed carefully and stored in an upright position.

### Prohibited equipment and procedures :

No smoking, eating or drinking in areas where the substance is used.

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

No data available.

### Storage

Keep the container tightly closed in a dry, well-ventilated place.

Keep away from food and drink, including those for animals.

The floor must be impermeable and form a collecting basin so that, in the event of an accidental spillage, the liquid cannot spread beyond this area.

### Packaging

Always keep in packaging made of an identical material to the original.

### 7.3. Specific end use(s)

No data available.

## SECTION 8 : EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1. Control parameters

No data available.

### 8.2. Exposure controls

#### Personal protection measures, such as personal protective equipment

Pictogram(s) indicating the obligation of wearing personal protective equipment (PPE) :



Use personal protective equipment that is clean and has been properly maintained.

Store personal protective equipment in a clean place, away from the work area.

Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

**- Eye / face protection**

Avoid contact with eyes.

Use eye protectors designed to protect against liquid splashes

Before handling, wear safety goggles with protective sides accordance with standard EN166.

Before handling powders or dust emission, wear mask goggles in accordance with standard EN166.

Prescription glasses are not considered as protection.

Individuals wearing contact lenses should wear prescription glasses during work where they may be exposed to irritant vapours.

Provide eyewash stations in facilities where the product is handled constantly.

**- Hand protection**

Use suitable protective gloves that are resistant to chemical agents in accordance with standard EN ISO 374-1.

Gloves must be selected according to the application and duration of use at the workstation.

Protective gloves need to be selected according to their suitability for the workstation in question : other chemical products that may be handled, necessary physical protections (cutting, pricking, heat protection), level of dexterity required.

Type of gloves recommended :

- PVA (Polyvinyl alcohol)

- Butyl Rubber (Isobutylene-isoprene copolymer)

**- Body protection**

Avoid skin contact.

Wear suitable protective clothing.

Suitable type of protective clothing :

In the event of substantial spatter, wear liquid-tight protective clothing against chemical risks (type 3) in accordance with EN14605/A1 to prevent skin contact.

Wear protective clothing against solid chemicals and particles suspended in the air (type 5) in accordance with standard EN13982-1/A1 to prevent skin contact.

In the event of a risk of splashing, wear protective clothing against chemical risks (type 6) in accordance with EN13034/A1 to prevent skin contact.

Wear suitable protective clothing and, in particular, an apron and boots. These items of clothing shall be maintained in good condition and cleaned after use.

Work clothing worn by personnel shall be laundered regularly.

After contact with the product, all parts of the body that have been soiled must be washed.

**- Respiratory protection**

Avoid inhaling dust.

Type of FFP mask :

Wear a disposable half-mask dust filter in accordance with standard EN149/A1.

**SECTION 9 : PHYSICAL AND CHEMICAL PROPERTIES****9.1. Information on basic physical and chemical properties**

No data available.

**Physical state**

Physical state : Solid.

**Colour**

Unspecified

**Odour**

Odour threshold : Not stated.

**Melting point**

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Melting point/melting range :	Not specified.
<b>Freezing point</b>	
Freezing point / Freezing range :	Not stated.
<b>Boiling point or initial boiling point and boiling range</b>	
Boiling point/boiling range :	Not specified.
<b>Flammability</b>	
Flammability (solid, gas) :	Not stated.
<b>Lower and upper explosion limit</b>	
Explosive properties, lower explosivity limit (%) :	Not stated.
Explosive properties, upper explosivity limit (%) :	Not stated.
<b>Flash point</b>	
Flash Point :	102.00 °C. Method for determining the flash point: ASTM D 93-15 (Standard Test Methods for Flash Point by Pensky-Martens Closed Cup Tester).
<b>Auto-ignition temperature</b>	
Self-ignition temperature :	Not specified.
<b>Decomposition temperature</b>	
Decomposition point/decomposition range :	Not specified.
<b>pH</b>	
pH :	Not relevant.
pH (aqueous solution) :	Not stated.
<b>Kinematic viscosity</b>	
Viscosity :	Not stated.
<b>Solubility</b>	
Water solubility :	Insoluble.
Fat solubility :	Not stated.
<b>Partition coefficient n-octanol/water (log value)</b>	
Partition coefficient: n-octanol/water :	Not stated.
<b>Vapour pressure</b>	
Vapour pressure (50°C) :	Not stated.
<b>Density and/or relative density</b>	
Density :	NA Method for determining the density : NF ISO 279:1999 (T75-111)
<b>Relative vapour density</b>	
Vapour density :	Not stated.
<b>9.2. Other information</b>	

Index of refraction :

NA

Method of determining the refractive index :

NF ISO 280:1999 (T75-112)

#### 9.2.1. Information with regard to physical hazard classes

No data available.

#### 9.2.2. Other safety characteristics

No data available.

### SECTION 10 : STABILITY AND REACTIVITY

#### 10.1. Reactivity

No data available.

#### 10.2. Chemical stability

This substance is stable under the recommended handling and storage conditions in section 7.

#### 10.3. Possibility of hazardous reactions

When exposed to high temperatures, the substance can release hazardous decomposition products, such as carbon monoxide and dioxide, fumes and nitrogen oxide.

#### 10.4. Conditions to avoid

Avoid :

- formation of dusts

Dusts can form an explosive mixture with air.

#### 10.5. Incompatible materials

No data available.

#### 10.6. Hazardous decomposition products

The thermal decomposition may release/form :

- carbon monoxide (CO)

- carbon dioxide (CO<sub>2</sub>)

### SECTION 11 : TOXICOLOGICAL INFORMATION

#### 11.1. Information on toxicological effects

Exposure to vapours from this solvent in excess of the stated occupational exposure limit may result in adverse health effects such as mucous membrane and respiratory system irritation and adverse effects on kidney, liver and central nervous system.

Harmful if swallowed.

May cause irreversible damage to the skin; namely, visible necrosis through the epidermis and into the dermis, following exposure between three minutes and one hour.

Corrosive reactions are typified by ulcers, bleeding, bloody scabs, and, by the end of observation at 14 days, by discolouration due to blanching of the skin, complete areas of alopecia, and scars.

Repeated or prolonged contact with the substance may cause removal of natural oil from the skin resulting in non-allergic contact dermatitis and absorption through the skin.

May cause an allergic reaction by skin contact.

##### 11.1.1. Substances

#### Acute toxicity :

4-HYDROXY-2,5-DIMETHYL-3(2H)-FURANONE (CAS:  
3658-77-3)

Oral route :

LD50 = 1608 mg/kg bodyweight/day

##### 11.1.2 Complex substance

No toxicological data available for the substances.

#### 11.2. Information on other hazards

##### Monograph(s) from the IARC (International Agency for Research on Cancer) :

CAS 64-17-5 : IARC Group 1 : The agent is carcinogenic to humans.

### SECTION 12 : ECOLOGICAL INFORMATION

Toxic to aquatic organisms.

The product must not be allowed to run into drains or waterways.

#### 12.1. Toxicity

##### 12.1.2 Complex substance

No aquatic toxicity data available for the substances.

#### 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

No data available.

#### 12.6. Endocrine disrupting properties

No data available.

#### 12.7. Other adverse effects

No data available.

### SECTION 13 : DISPOSAL CONSIDERATIONS

The appropriate waste management of the substance and/or its container must be determined in accordance with local regulations.

#### 13.1. Waste treatment methods

Do not pour into drains or waterways.

##### Waste :

Waste management is carried out without endangering human health, without harming the environment and, in particular without risk to water, air, soil, plants or animals.

Recycle or dispose of waste in compliance with current legislation, via a certified collector or company.

Do not contaminate the ground or water with waste, do not dispose of waste into the environment.

##### Soiled packaging :

Empty container completely. Keep label(s) on container.

Give to a certified disposal contractor.

### SECTION 14 : TRANSPORT INFORMATION

Transport product in compliance with provisions of the ADR for road, RID for rail, IMDG for sea and ICAO/IATA for air transport (ADR 2023 - IMDG 2022 [41-22] - ICAO/IATA 2023 [64]).

#### 14.1. UN number

1759

#### 14.2. UN proper shipping name

UN1759=CORROSIVE SOLID, N.O.S.

(4-hydroxy-2,5-dimethyl-3(2h)-furanone)

#### 14.3. Transport hazard class(es)





- Classification :

8

#### 14.4. Packing group

II

#### 14.5. Environmental hazards

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#### 14.6. Special precautions for user

ADR/RID	Class	Code	Pack gr.	Label	Ident.	LQ	Provis.	EQ	Cat.	Tunnel
	8	C10	II	8	80	1 kg	274	E2	2	E
IMDG	Class	2°Label	Pack gr.	LQ	EMS	Provis.	EQ	Stowage Handling	Segregation	
	8	-	II	1 kg	F-A. S-B	274	E2	Category A		
IATA	Class	2°Label	Pack gr.	Passager	Passager	Cargo	Cargo	note	EQ	
	8	-	II	859	15 kg	863	50 kg	A3 A803	E2	
	8	-	II	Y844	5 kg	-	-	A3 A803	E2	

For limited quantities, see part 2.7 of the OACI/IATA and chapter 3.4 of the ADR and IMDG.

For excepted quantities, see part 2.6 of the OACI/IATA and chapter 3.5 of the ADR and IMDG.

#### 14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

No data available.

### SECTION 15 : REGULATORY INFORMATION

#### 15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

The following regulations have been used:

- Globally Harmonized System of Classification and Labelling of Chemicals (GHS), review no. 8 (2019)

#### Container information:

No data available.

#### Particular provisions :

No data available.

#### 15.2. Chemical safety assessment

No data available.

### SECTION 16 : OTHER INFORMATION

Since the user's working conditions are not known by us, the information supplied on this safety data sheet is based on our current level of knowledge and on national and community regulations.

It is at all times the responsibility of the user to take all necessary measures to comply with legal requirements and local regulations.

The information in this safety data sheet must be regarded as a description of the safety requirements relating to the substance and not as a guarantee of the properties thereof.

#### Wording of the phrases mentioned in section 3 :

H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H401	Toxic to aquatic life.

**Abbreviations and acronyms :**

LD50 : The dose of a test substance resulting in 50% lethality in a given time period.  
STEL : Short-term exposure limit  
TWA : Time Weighted Averages  
TMP : French Occupational Illness table  
TLV : Threshold Limit Value (exposure)  
AEV : Average Exposure Value.  
ADR : European agreement concerning the international carriage of dangerous goods by Road.  
IMDG : International Maritime Dangerous Goods.  
IATA : International Air Transport Association.  
ICAO : International Civil Aviation Organisation  
RID : Regulations concerning the International carriage of Dangerous goods by rail.  
GHS05 : Corrosion  
GHS07 : Exclamation mark  
PBT: Persistent, bioaccumulable and toxic.  
vPvB : Very persistent, very bioaccumulable.