

## 4-HYDROXYCOUMARIN

Version No:2.0  
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GHS SAFETY DATA SHEET

### Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

#### PRODUCT NAME

4-HYDROXYCOUMARIN

#### OTHER NAMES

C9-H6-O3, "coumarin, 4-hydroxy-", 4-hydroxy-oxo-chromene, 4-oxycoumarin, "2H-1-benzopyran, 4-hydroxy-2-oxo-", "2H-1-benzopyren-2-one, 4-hydroxy-", 4-hydroxy-2-oxo-2H-1-benzopyran, 4-hydroxy-2H-1-benzopyran-2-one

#### PRODUCT USE

Reagent.

#### SUPPLIER

Company: S D FINE- CHEM LIMITED

Address:

315- 317, T.V. INDUSTRIAL ESTATE,  
248, WORLI,  
MUMBAI- 400030.INDIA.

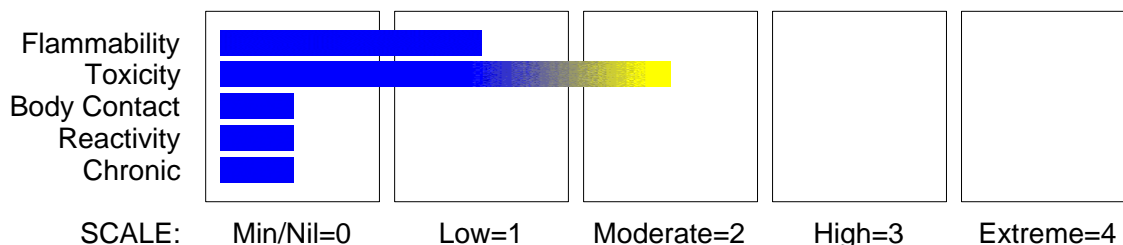
technical@sdfine.com

Telephone: 91- 22- 24959898

Telephone: 91- 22- 24959899

Fax: 91- 22- 24937232

#### HAZARD RATINGS



### Section 2 - HAZARDS IDENTIFICATION

#### GHS Classification

Acute Toxicity (Oral) Category 4

continued...

# 4-HYDROXYCOUMARIN



## EMERGENCY OVERVIEW

### HAZARD

#### WARNING

Determined by using GHS criteria:

H302

Harmful if swallowed

### PRECAUTIONARY STATEMENTS

#### Prevention

Wash hands thoroughly after handling.

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

#### Response

Specific treatment: refer to Label or MSDS.

#### Storage

Store locked up.

#### Disposal

Dispose of contents and container in accordance with relevant legislation.

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## Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
4- hydroxycoumarin	1076-38-6	>98

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## Section 4 - FIRST AID MEASURES

### SWALLOWED

- Immediately give a glass of water.
- First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.

### EYE

If this product comes in contact with the eyes:

- Immediately hold eyelids apart and flush the eye continuously with running water.
- Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.
- Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes.

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- Transport to hospital or doctor without delay.
- Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

## SKIN

If skin or hair contact occurs:

- Immediately flush body and clothes with large amounts of water, using safety shower if available.
- Quickly remove all contaminated clothing, including footwear.
- Wash skin and hair with running water. Continue flushing with water until advised to stop by the Poisons Information Centre.
- Transport to hospital, or doctor.

## INHALED

- If dust is inhaled, remove from contaminated area.
- Encourage patient to blow nose to ensure clear passage of breathing.
- If irritation or discomfort persists seek medical attention.

## NOTES TO PHYSICIAN

Treat symptomatically.

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## Section 5 - FIRE FIGHTING MEASURES

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### EXTINGUISHING MEDIA

- Foam.
- Dry chemical powder.
- BCF (where regulations permit).
- Carbon dioxide.
- Water spray or fog - Large fires only.

### FIRE FIGHTING

Alert Fire Brigade and tell them location and nature of hazard.

- Wear full body protective clothing with breathing apparatus.
- Prevent, by any means available, spillage from entering drains or water courses.

Cool fire exposed containers with water spray from a protected location.

DO NOT approach containers suspected to be hot.

If safe to do so, remove containers from path of fire.

### FIRE/EXPLOSION HAZARD

- Solid which exhibits difficult combustion or is difficult to ignite.
- Avoid generating dust, particularly clouds of dust in a confined or unventilated space as dusts may form an explosive mixture with air, and any source of ignition, i.e. flame or spark, will cause fire or explosion. Dust clouds generated by the fine grinding of the solid are a particular hazard; accumulations of fine dust may burn rapidly and fiercely if ignited.
- Dry dust can also be charged electrostatically by turbulence, pneumatic transport, pouring, in exhaust ducts and during transport.
- Build-up of electrostatic charge may be prevented by bonding and grounding.
- Powder handling equipment such as dust collectors, dryers and mills may require additional protection measures such as explosion venting.
- All movable parts coming in contact with this material should have a speed of less than 1-metre/sec.

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Combustion products include: carbon monoxide (CO).

## FIRE INCOMPATIBILITY

Avoid contamination with strong oxidising agents, particularly peroxides, perchlorates, etc. as violent decomposition / detonation may result.

## Section 6 - ACCIDENTAL RELEASE MEASURES

### EMERGENCY PROCEDURES

#### MINOR SPILLS

- Clean up all spills immediately.
- Avoid contact with skin and eyes.
- Wear protective clothing, gloves, safety glasses and dust respirator.
- Use dry clean up procedures and avoid generating dust.
- Sweep up or
- Vacuum up (consider explosion-proof machines designed to be grounded during storage and use).
- Place in clean drum then flush area with water.

#### MAJOR SPILLS

- Minor hazard.
- Clear area of personnel.
  - Alert Fire Brigade and tell them location and nature of hazard.
  - Control personal contact by using protective equipment as required.
  - Prevent spillage from entering drains or water ways.
  - Contain spill with sand, earth or vermiculite.
  - Collect recoverable product into labelled containers for recycling.
  - Absorb remaining product with sand, earth or vermiculite and place in appropriate containers for disposal.
  - Wash area and prevent runoff into drains or waterways.
  - If contamination of drains or waterways occurs, advise emergency services.

### SAFE STORAGE WITH OTHER CLASSIFIED CHEMICALS



- +: May be stored together  
O: May be stored together with specific preventions  
X: Must not be stored together

Personal Protective Equipment advice is contained in Section 8 of the MSDS.

## Section 7 - HANDLING AND STORAGE

### PROCEDURE FOR HANDLING

- Limit all unnecessary personal contact.

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- Wear protective clothing when risk of exposure occurs.
- Use in a well-ventilated area.
- Avoid contact with incompatible materials.
- When handling, DO NOT eat, drink or smoke.
- Keep containers securely sealed when not in use.
- Avoid physical damage to containers.
- Always wash hands with soap and water after handling.
- Work clothes should be laundered separately.
- Use good occupational work practice.
- Observe manufacturer's storing and handling recommendations.
- Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained.

## SUITABLE CONTAINER

- Check that containers are clearly labelled.
- Packaging as recommended by manufacturer.

## STORAGE INCOMPATIBILITY

Avoid reaction with oxidising agents.

## STORAGE REQUIREMENTS

Observe manufacturer's storing and handling recommendations.  
Store in original containers.  
Store in a cool area and away from sunlight.  
Keep dry.  
Store in a well-ventilated area.  
Store away from incompatible materials.  
Protect containers against physical damage.  
Keep containers securely sealed.  
Check regularly for spills and leaks.

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## Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

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### EXPOSURE CONTROLS

The following materials had no OELs on our records

- 4- hydroxycoumarin: CAS:1076- 38- 6

### MATERIAL DATA

These "dusts" have little adverse effect on the lungs and do not produce toxic effects or organic disease. Although there is no dust which does not evoke some cellular response at sufficiently high concentrations, the cellular response caused by P.N.O.C.s has the following characteristics:

- the architecture of the air spaces remain intact,
- scar tissue (collagen) is not synthesised to any degree,
- tissue reaction is potentially reversible.

Extensive concentrations of P.N.O.C.s may:

- seriously reduce visibility,
- cause unpleasant deposits in the eyes, ears and nasal passages,
- contribute to skin or mucous membrane injury by chemical or mechanical action, per se, or by the rigorous skin cleansing procedures necessary for their removal. [ACGIH]

This limit does not apply:

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## Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

- to brief exposures to higher concentrations
- nor does it apply to those substances that may cause physiological impairment at lower concentrations but for which a TLV has as yet to be determined.

This exposure standard applies to particles which

- are insoluble or poorly soluble\* in water or, preferably, in aqueous lung fluid (if data is available) and
- have a low toxicity (i.e.. are not cytotoxic, genotoxic, or otherwise chemically reactive with lung tissue, and do not emit ionizing radiation, cause immune sensitization, or cause toxic effects other than by inflammation or by a mechanism of lung overload).

### PERSONAL PROTECTION



#### EYE

- Chemical goggles.
- Full face shield may be required for supplementary but never for primary protection of eyes
- Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lens or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59].

#### HANDS/FEET

- Barrier cream.
- Wear chemical protective gloves, eg. PVC.
- Wear safety footwear.

#### OTHER

- Overalls.
- Eyewash unit.

#### RESPIRATOR

Protection Factor	Half- Face Respirator	Full- Face Respirator	Powered Air Respirator
10 x ES	P1 Air- line*	- -	PAPR- P1 -
50 x ES	Air- line**	P2	PAPR- P2
100 x ES	-	P3	-
		Air- line*	-
100+ x ES	-	Air- line**	PAPR- P3

\* - Negative pressure demand \*\* - Continuous flow.

The local concentration of material, quantity and conditions of use determine the type of

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personal protective equipment required.  
For further information consult your  
Occupational Health and Safety Advisor.

## ENGINEERING CONTROLS

Use in a well-ventilated area.

General exhaust is adequate under normal operating conditions. Local exhaust ventilation may be required in special circumstances. If risk of overexposure exists, wear approved respirator. Supplied-air type respirator may be required in special circumstances.

Correct fit is essential to ensure adequate protection. Provide adequate ventilation in warehouses and enclosed storage areas. Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to effectively remove the contaminant.

Type of Contaminant:	Air Speed:
solvent, vapours, degreasing etc., evaporating from tank (in still air).	0.25- 0.5 m/s (50- 100 f/min)
aerosols, fumes from pouring operations, intermittent container filling, low speed conveyer transfers, welding, spray drift, plating acid fumes, pickling (released at low velocity into zone of active generation)	0.5- 1 m/s (100- 200 f/min.)
direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts, gas discharge (active generation into zone of rapid air motion)	1- 2.5 m/s (200- 500 f/min.)
grinding, abrasive blasting, tumbling, high speed wheel generated dusts (released at high initial velocity into zone of very high rapid air motion)	2.5- 10 m/s (500- 2000 f/min.)

Within each range the appropriate value depends on:

Lower end of the range	Upper end of the range
1: Room air currents minimal or favourable to capture	1: Disturbing room air currents
2: Contaminants of low toxicity or of nuisance value only.	2: Contaminants of high toxicity
3: Intermittent, low production.	3: High production, heavy use
4: Large hood or large air mass in motion	4: Small hood- local control only

Simple theory shows that air velocity falls rapidly with distance away from the opening of a simple extraction pipe. Velocity generally decreases with the square of distance from the extraction point (in simple cases). Therefore the air speed at the extraction point should be adjusted, accordingly, after reference to distance from the contaminating source. The air velocity at the extraction fan, for example, should be a minimum of 1-2 m/s (200-400 f/min) for extraction of solvents generated in a tank 2 meters distant from the extraction point. Other mechanical considerations, producing performance deficits within the extraction apparatus, make it essential that theoretical air velocities are multiplied by factors of 10 or more when extraction systems are installed or used.

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## Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

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### APPEARANCE

White to off-white powder; does not mix well with water.

### PHYSICAL PROPERTIES

Solid.

Does not mix with water.

Molecular Weight: 162.14

Melting Range (°C): 216 (dec)

Solubility in water (g/L): Partly miscible

pH (1% solution): Not available

Volatile Component (%vol): Negligible

Relative Vapour Density (air=1): Not applicable

Lower Explosive Limit (%): Not available

Autoignition Temp (°C): Not available

State: Divided solid

Boiling Range (°C): Not applicable.

Specific Gravity (water=1): Not available.

pH (as supplied): Not applicable

Vapour Pressure (kPa): Negligible

Evaporation Rate: Not applicable

Flash Point (°C): Not available

Upper Explosive Limit (%): Not available

Decomposition Temp (°C): 216

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## Section 10 - CHEMICAL STABILITY AND REACTIVITY INFORMATION

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### CONDITIONS CONTRIBUTING TO INSTABILITY

- Presence of incompatible materials.
- Product is considered stable.
- Hazardous polymerisation will not occur.

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## Section 11 - TOXICOLOGICAL INFORMATION

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### POTENTIAL HEALTH EFFECTS

#### ACUTE HEALTH EFFECTS

##### SWALLOWED

Accidental ingestion of the material may be damaging to the health of the individual.

Ingestion may result in nausea, abdominal irritation, pain and vomiting.

Of the same family as heparin, coumarin (generally 4-hydroxy-) and indan-1,3-dione derivatives are often used as rodenticides and as anticoagulant drugs. They cause spontaneous and lethal hemorrhage in the rodents that ingest them. Under the general name antivitamin K they block the hepatic synthesis of prothrombin at the expense of vitamin K (coumarin itself produces little antiprothrombin activity). Under normal conditions of use they present little danger to man although they may produce hemorrhagic accidents if they are absorbed in large or repeated doses or by certain persons with a natural or acquired sensitivity. Poisonings may produce nausea and vomiting - effects may be delayed for several days. Other symptoms include bleeding gums, an increased tendency to bruise, blood in the urine and faeces and excessive bleeding from minor cuts or scratches. Severe poisonings may result in haemorrhagic shock, coma and death. In rare cases kidney, liver or lymphatic lesions have been seen.

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## Section 11 - TOXICOLOGICAL INFORMATION

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### EYE

Although the material is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may produce transient discomfort characterised by tearing or conjunctival redness (as with windburn).

### SKIN

The material is not thought to produce adverse health effects or skin irritation following contact (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting.

### INHALED

The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting.

Persons with impaired respiratory function, airway diseases and conditions such as emphysema or chronic bronchitis, may incur further disability if excessive concentrations of particulate are inhaled.

### CHRONIC HEALTH EFFECTS

Principal routes of exposure are usually by skin contact/absorption and inhalation of generated dust.

As with any chemical product, contact with unprotected bare skin; inhalation of vapour, mist or dust in work place atmosphere; or ingestion in any form, should be avoided by observing good occupational work practice.

## TOXICITY AND IRRITATION

### TOXICITY

Oral (mouse) LD50: 2000 mg/kg  
Intraperitoneal (mouse) LD50: 2000 mg/kg  
Subcutaneous (mouse) LD50: 750 mg/kg

### IRRITATION

Nil Reported

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## Section 12 - ECOLOGICAL INFORMATION

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No data for 4-hydroxycoumarin.

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## Section 13 - DISPOSAL CONSIDERATIONS

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- Consult manufacturer for recycling options and recycle where possible .
- Consult State Land Waste Management Authority for disposal.
- Incinerate residue at an approved site.
- Recycle containers if possible, or dispose of in an authorised landfill.

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## Section 14 - TRANSPORTATION INFORMATION

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HAZCHEM: None

NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS:UN, IATA,  
IMDG

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## Section 14 - TRANSPORTATION INFORMATION

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## Section 15 - REGULATORY INFORMATION

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### REGULATIONS

No regulations applicable

No data available for 4-hydroxycoumarin as CAS: 1076-38-6.

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## Section 16 - OTHER INFORMATION

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The above information is believed to be accurate and represent the best information currently available to us, but does not represent any warranty expressed or implied of the properties of the product. User should make their own investigation to determine the suitability of the information for their particular purpose.

Issue Date: 12-May-2018