

# NINHYDRIN

GHS Safety Data Sheet

Version No: 2.0

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## Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

### PRODUCT NAME

NINHYDRIN

### OTHER NAMES

C9-H6-O4, "1, 3-indandione, "2, 2-dihydroxy-1, 3-indandione", "2, 2-dihydroxy-1H-indene -1, 3(2H)-dione", "1, 2, 3-indantrione, 2-hydrate", "1, 2, 3-indantrione monohydrate", "1, 2, 3-indantrione monohydrate", "indantrione hydrate", dihydroxyindandione, "triketohydrindene hydrate", "ninhydrin hydrate"

### PRODUCT USE

Used as chemical intermediate, reagent for determination of amines, amino acids, ascorbic acid.  
Dusting powder for development of fingerprints at crime scene.

### SUPPLIER

Company: S D FINE- CHEM LIMITED

Address:

315- 317, T.V. INDUSTRIAL ESTATE,

248, WORLI,

MUMBAI- 400030.INDIA.

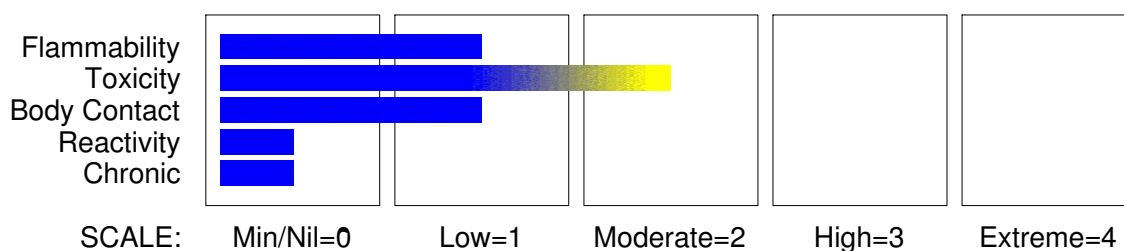
technical@sdfine.com

Telephone: 91- 22- 24959898

Telephone: 91- 22- 24959899

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### HAZARD RATINGS



## Section 2 - HAZARDS IDENTIFICATION

### EMERGENCY OVERVIEW

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## Section 2 - HAZARDS IDENTIFICATION

### HAZARD

Not hazardous  
No hazards determined by using GHS criteria

### PRECAUTIONARY STATEMENTS

## Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

| NAME                                     | CAS RN   | %   |
|------------------------------------------|----------|-----|
| ninhydrin<br>(triketohydrindene hydrate) | 485-47-2 | 100 |

## Section 4 - FIRST AID MEASURES

### SWALLOWED

For advice, contact a Poisons Information Centre or a doctor.  
· IF SWALLOWED, REFER FOR MEDICAL ATTENTION, WHERE POSSIBLE, WITHOUT DELAY.  
· For advice, contact a Poisons Information Centre or a doctor.  
Where Medical attention is not immediately available or where the patient is more than 15 minutes from a hospital or unless instructed otherwise:  
· Induce vomiting with fingers down the back of the of the throat, ONLY IF CONSCIOUS.  
· Lean patient forward or place on left side (head-down position if possible) to maintain open airway and prevent aspiration.  
NOTE: Wear a protective glove when inducing vomiting by mechanical means.  
· In the mean time, qualified first-aid personnel should treat the patient following observation and employing supportive measures as indicated by the patient's condition.  
· If the services of a medical officer or medical doctor are readily available, the patient should be placed in his/her care and a copy of the MSDS should be provided.  
Further action will be the responsibility of the medical specialist.  
· If medical attention is not available on the worksite or surroundings send the patient to a hospital together with a copy of the MSDS.

### EYE

If this product comes in contact with the eyes:  
· Wash out immediately with fresh 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.  
· If pain persists or recurs seek medical attention.  
· Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

### SKIN

If skin contact occurs:  
· Immediately remove all contaminated clothing, including footwear.  
· Flush skin and hair with running water (and soap if available).  
· Seek medical attention in event of irritation.

### INHALED

· If fumes or combustion products are inhaled remove from contaminated area.  
· Lay patient down. Keep warm and rested.  
· Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.  
· Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.  
· Transport to hospital, or doctor.

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Section 4 - FIRST AID MEASURES

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## NOTES TO PHYSICIAN

Treat symptomatically.

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## Section 5 - FIRE FIGHTING MEASURES

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### EXTINGUISHING MEDIA

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

### FIRE FIGHTING

- Alert Fire Brigade and tell them location and nature of hazard.
- Wear breathing apparatus plus protective gloves for fire only.
- Prevent, by any means available, spillage from entering drains or water courses.
- Use fire fighting procedures suitable for surrounding area.
- DO NOT approach containers suspected to be hot.
- Cool fire exposed containers with water spray from a protected location.
- If safe to do so, remove containers from path of fire.
- Equipment should be thoroughly decontaminated after use.

### FIRE/EXPLOSION HAZARD

- Combustible.
  - Slight fire hazard when exposed to heat or flame.
  - Heating may cause expansion or decomposition leading to violent rupture of containers.
  - On combustion, may emit toxic fumes of carbon monoxide (CO).
  - May emit acrid smoke.
  - Mists containing combustible materials may be explosive.
- Other combustion products include: carbon dioxide (CO<sub>2</sub>).
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## Section 6 - ACCIDENTAL RELEASE MEASURES

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### EMERGENCY PROCEDURES

#### MINOR SPILLS

- Remove all ignition sources.
- Clean up all spills immediately.
- Avoid contact with skin and eyes.
- Control personal contact by using protective equipment.
- Use dry clean up procedures and avoid generating dust.
- Place in a suitable labelled container for waste disposal.

#### MAJOR SPILLS

Minor hazard.

- Clear area of personnel and move upwind.
- Alert Fire Brigade and tell them location and nature of hazard.
- Wear breathing apparatus plus protective gloves.
- Prevent, by any means available, spillage from entering drains or water course.
- No smoking, naked lights or ignition sources.
- Increase ventilation.
- Stop leak if safe to do so.
- Contain spill with sand, earth or vermiculite.
- Collect recoverable product into labelled containers for recycling.
- Absorb remaining product with sand, earth or vermiculite.

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### Section 6 - ACCIDENTAL RELEASE MEASURES

- Collect solid residues and seal in labelled drums for disposal.
- Wash area and prevent runoff into drains.
- 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 precautions*

*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

Avoid generating and breathing dust.

- Avoid all personal contact, including inhalation.
- Wear protective clothing when risk of exposure occurs.
- Use in a well-ventilated area.
- Prevent concentration in hollows and sumps.
- DO NOT enter confined spaces until atmosphere has been checked.
- Avoid smoking, naked lights or ignition sources.
- 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.

#### SUITABLE CONTAINER

Glass container or Plastic container.

Multi-ply woven plastic or paper bag with sealed plastic liner

NOTE: Bags should be stacked, blocked, interlocked, and limited in height so that they are stable and secure against sliding or collapse.

- Check that containers are clearly labelled.

Packaging as recommended by manufacturer.

#### STORAGE INCOMPATIBILITY

Avoid storage with amines, caustic soda and alkalis.

#### STORAGE REQUIREMENTS

- Store in original containers.
- Keep containers securely sealed.
- No smoking, naked lights or ignition sources.
- Store in a cool, dry, well-ventilated area.
- Store away from incompatible materials and foodstuff containers.
- Protect containers against physical damage and check regularly for leaks.

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## Section 7 - HANDLING AND STORAGE

- Observe manufacturer's storing and handling recommendations.

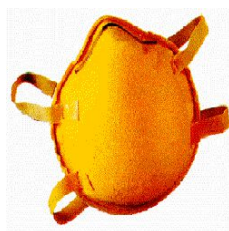
## Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

### EXPOSURE CONTROLS

The following materials had no OELs on our records

- ninhydrin: CAS:485- 47- 2

### PERSONAL PROTECTION



#### EYE

- Safety glasses with side shields
- Chemical goggles.
- 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

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

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## ENGINEERING CONTROLS

Use in a well-ventilated area.

- Local exhaust ventilation is required where solids are handled as powders or crystals; even when particulates are relatively large, a certain proportion will be powdered by mutual friction.
- Exhaust ventilation should be designed to prevent accumulation and recirculation of particulates in the workplace.
- If in spite of local exhaust an adverse concentration of the substance in air could occur, respiratory protection should be considered. Such protection might consist of:
  - (a): particle dust respirators, if necessary, combined with an absorption cartridge;
  - (b): filter respirators with absorption cartridge or canister of the right type;
  - (c): fresh-air hoods or masks
- Build-up of electrostatic charge on the dust particle, 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.

Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to efficiently remove the contaminant.

Type of Contaminant:

direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts, gas discharge (active generation into zone of rapid air motion)  
grinding, abrasive blasting, tumbling, high speed wheel generated dusts (released at high initial velocity into zone of very high rapid air motion).

Air Speed:

1- 2.5 m/s (200- 500 f/min.)

2.5- 10 m/s (500- 2000 f/min.)

Within each range the appropriate value depends on:

Lower end of the range

- 1: Room air currents minimal or favourable to capture
- 2: Contaminants of low toxicity or of nuisance value only
- 3: Intermittent, low production.
- 4: Large hood or large air mass in motion

Upper end of the range

- 1: Disturbing room air currents
- 2: Contaminants of high toxicity
- 3: High production, heavy use
- 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 4-10 m/s (800-2000 f/min) for extraction of crusher dusts generated 2 metres 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 brownish white crystals or fine powder with slight odour.  
Soluble in water and alcohol. Slightly soluble in ether and chloroform.

### PHYSICAL PROPERTIES

Solid.  
Mixes with water.

Molecular Weight: 178.15  
Melting Range (°C): 241 (Decomposes)  
Solubility in water (g/L): Miscible  
pH (1% solution): Not available.  
Volatile Component (%vol): Not applicable  
Relative Vapour Density (air=1): Not applicable  
Lower Explosive Limit (%): Not applicable  
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): Not applicable  
Evaporation Rate: Not applicable  
Flash Point (°C): Not applicable  
Upper Explosive Limit (%): Not applicable  
Decomposition Temp (°C): 241

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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. Considered an unlikely route of entry in commercial/industrial environments. 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

### 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).

The dust may produce eye discomfort causing transient smarting, blinking.

### 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 with the material 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 (rat) LDLo: 250 mg/kg

### IRRITATION

Nil Reported

## Section 12 - ECOLOGICAL INFORMATION

Toxicity Fish: LC50(96)9.6mg/L

## Section 13 - DISPOSAL CONSIDERATIONS

- 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.

## Section 14 - TRANSPORTATION INFORMATION

HAZCHEM: None

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

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## Section 15 - REGULATORY INFORMATION

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### REGULATIONS

No regulations applicable

No data available for ninhydrin as CAS: 485-47-2.

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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: 30-Mar-2018