

BARBITURIC ACID

Version No:2.0

Page 1 of 11

Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME

BARBITURIC ACID

OTHER NAMES

C4-H4-N2-O3, 6-hydroxyhydrouracil, 6-hydroxyhydrouracil, 6-hydroxyuracil, 6-hydroxyuracil, malonylurea, pyrimidinetriol, "2, 4, 6-pyrimidinetrione", "2, 4, 6-pyrimidinetrione", "2, 4, 6-trioxohexahydropyrimidine", "2, 4, 6-trioxohexahydropyrimidine", "N, N'-malonylurea", "N, N'-malonylurea"

PRODUCT USE

Used in laboratory as reagent; intermediate for plastics and pharmaceutical manufacture. Inactive precursor of barbiturates.

SUPPLIER

Company: S D FINE- CHEM LIMITED

Address:

315- 317, T.V. INDUSTRIAL ESTATE,

248, WORLI,

MUMBAI- 400030.INDIA.

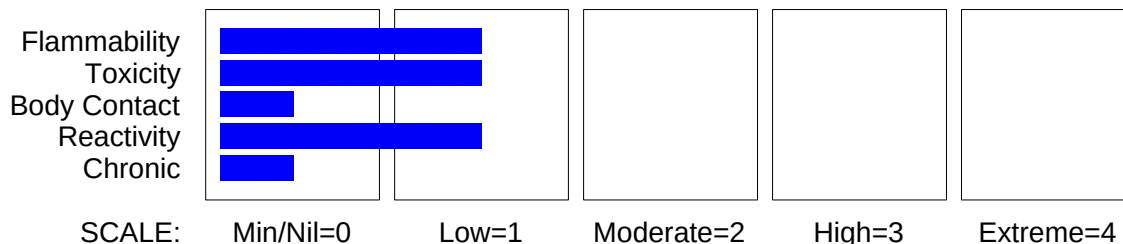
technical@sdfine.com

Telephone: 91- 22- 24959898

Telephone: 91- 22- 24959899

Fax: 91- 22- 24937232

HAZARD RATINGS



Section 2 - HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

continued...

BARBITURIC ACID

Version No:2.0

Page 2 of 11

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	%
barbituric acid	67-52-7	>99

Section 4 - FIRST AID MEASURES

SWALLOWED

- For advice, contact a Poisons Information Centre or a doctor at once.
- Urgent hospital treatment is likely to be needed.
- If swallowed do NOT induce vomiting.
- If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.
- Observe the patient carefully.
- Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious.
- Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink.
- Transport to hospital or doctor without delay.

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.

continued...

BARBITURIC ACID

Version No:2.0

Page 3 of 11

Section 4 - FIRST AID MEASURES

NOTES TO PHYSICIAN

Treat as for ingestion of long acting barbiturates.

For acute intoxication by barbiturates:

- If the patient is awake and loss of consciousness is not imminent, give by mouth Syrup of Ipecac or a slurry of activated charcoal.
- Gastric lavage with warm water or saline as soon as practical. Precautions against aspiration are essential especially if the patient is comatose.
- Leave in the stomach 15 to 30 gm of sodium sulfate in water as a saline cathartic.
- If sensory stimuli (e.g. pinching) arouse the patient even briefly from coma and if respirations are full and regular further treatment may not be required. Nevertheless keep under observation until fully conscious.
- Monitor (continuously if possible) the ECG and the following vital signs; respiratory rate, pulse rate, blood pressure and body temperature. Observe frequently and record skin colour, pupillary size and light reflex, corneal and gag reflexes, response to pain, and tendon reflexes.
- Correct airway obstruction. Insertion of oropharyngeal airway is usually advisable in comatose patients with no gag reflex. Suction frequently to remove saliva and mucus.
- At the slightest suspicion of hypoxia, continuous or intermittent oxygen therapy is warranted.
- Sometimes the inhalation of oxygen causes an arrest of spontaneous breathing. Artificial respiration is then essential. DO NOT wait for respiratory arrest; give mechanical assistance whenever the rate or depth of breathing is clearly inadequate.
- The threat of cardiovascular collapse often disappears when hypoxia is corrected. If not an infusion of plasma or human serum albumin is useful to expand blood volume and raise the blood pressure. Vasoconstrictor drugs are generally not helpful. A rapidly acting cardiac glycoside (e.g. ouabain) is recommended only if central venous pressure is elevated.
- Correct dehydration by the cautious administration of replacement fluids. In the treatment of barbital and phenobarbital poisoning diuretics have a legitimate role but diuresis is not beneficial in pentobarbitone or secobarbital poisoning. Alkalinisation of the urine does not speed excretion significantly except in phenobarbital poisoning. Perhaps the urinary bladder should be catheterised to prevent retention. Measure and record urinary output.
- In the rare patient with signs of intracranial pressure treat for brain oedema.
- In severe poisonings haemodialysis or haemoperfusion may prove life-saving by shortening coma thus preventing lethal complications. These measures are normally reserved for massive poisonings by those barbiturates that are only slowly detoxified (e.g. barbital, phenobarbital), but they may be helpful with short-acting agents if begun promptly.
- Good nursing is essential. The body temperature should be maintained if possible. Antibiotic therapy is necessary if pneumonia or other infections arise. By repeatedly changing the patient's posture, hypostatic pneumonia, thrombophlebitis and decubitis ulcers are avoided. GOSSELIN, SMITH HODGE: Clinical Toxicology of Commercial Products. 5th Ed.

Section 5 - FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

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

continued...

BARBITURIC ACID

Version No:2.0

Page 4 of 11

Section 5 - FIRE FIGHTING MEASURES

- 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

- 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.
- Combustion products include: carbon monoxide (CO) and nitrogen oxides (NO_x).

FIRE INCOMPATIBILITY

Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result.

Section 6 - ACCIDENTAL RELEASE MEASURES

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

Moderate 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.

continued...

BARBITURIC ACID

Version No:2.0

Page 5 of 11

Section 6 - ACCIDENTAL RELEASE MEASURES

- Contain spill with sand, earth or vermiculite.
- Collect recoverable product into labelled containers for recycling.
- Absorb remaining product with sand, earth or vermiculite.
- Collect solid residues and seal in labelled drums for disposal.
- Wash area and prevent runoff into drains.
- After clean up operations, decontaminate and launder all protective clothing and equipment before storing and re-using.
- If contamination of drains or waterways occurs, advise emergency services.

EMERGENCY RESPONSE PLANNING GUIDELINES (ERPG)

The maximum airborne concentration below which it is believed that nearly all individuals could be exposed for up to one hour WITHOUT experiencing or developing

life-threatening health effects is:

barbituric acid 200 mg/m³

irreversible or other serious effects or symptoms which could impair an individual's ability to take protective action is:

barbituric acid 40 mg/m³

other than mild, transient adverse effects without perceiving a clearly defined odour is:

barbituric acid 10 mg/m³

The threshold concentration below which most people will experience no appreciable risk of health effects:

barbituric acid 10 mg/m³

American Industrial Hygiene Association (AIHA)

Ingredients considered according to the following cutoffs

Very Toxic (T+)	>= 0.1%	Toxic (T)	>= 3.0%
R50	>= 0.25%	Corrosive (C)	>= 5.0%
R51	>= 2.5%		
else	>= 10%		

where percentage is percentage of ingredient found in the mixture

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

continued...

BARBITURIC ACID

Version No:2.0

Page 6 of 11

Section 7 - HANDLING AND STORAGE

- Avoid contact with skin and eyes.
- Wear nominated personal protective equipment when handling.
- Use in a well-ventilated area.
- Use good occupational work practices.
- Observe manufacturer's storing and handling recommendations.

SUITABLE CONTAINER

Glass container.

Packaging as recommended by manufacturer.

- Check that containers are clearly labelled.

STORAGE INCOMPATIBILITY

Avoid reaction with oxidising agents.

Avoid strong acids, bases.

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.
 - Observe manufacturer's storing and handling recommendations.
- Keep locked up.

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE CONTROLS

The following materials had no OELs on our records

- barbituric acid:

CAS:67- 52- 7 CAS:253678- 06- 7 CAS:408335- 37- 5
CAS:253678- 08- 9 CAS:223674- 02- 0
CAS:160336- 60- 7 CAS:158217- 19- 7 CAS:154254- 45- 2
CAS:118738- 52- 6 CAS:117491- 80- 2
CAS:63896- 95- 7 CAS:53853- 41- 1 CAS:51159- 18- 3
CAS:465532- 08- 5 CAS:32267- 40- 6 CAS:20964- 57- 2
CAS:16564- 27- 5 CAS:42910- 84- 9
CAS:774592- 06- 2 CAS:860760- 03- 8 CAS:477705- 05- 8
CAS:678184- 94- 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,

continued...

BARBITURIC ACID

Version No:2.0

Page 7 of 11

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

or by the rigorous skin cleansing procedures necessary for their removal. [ACGIH]

This limit does not apply:

- 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

- Safety glasses with side shields; or as required,
- 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.

continued...

BARBITURIC ACID

Version No:2.0

Page 8 of 11

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

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.

ENGINEERING CONTROLS

Local exhaust ventilation usually required. If risk of overexposure exists, wear approved respirator. Correct fit is essential to obtain adequate protection. Supplied-air type respirator may be required in special circumstances. Correct fit is essential to ensure adequate protection.

An approved self contained breathing apparatus (SCBA) may be required in some situations. Provide adequate ventilation in warehouse or closed storage area. 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.

continued...

BARBITURIC ACID

Version No:2.0

Page 9 of 11

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE

White crystalline powder with a weak odour; mixes with water.
Soluble in boiling water. Some decomposition at melting temperature.
Behaves as strong acid. Forms salts with metals.
Unsubstituted acid has no hypnotic properties.

PHYSICAL PROPERTIES

Solid.
Mixes with water.

Molecular Weight: 128.10
Melting Range (°C): 252- 255
Solubility in water (g/L): Miscible
pH (1% solution): <7 (sat. soln.)
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 available.
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): Not available.

log Kow (Prager 1995): 1.47

Section 10 - CHEMICAL STABILITY AND REACTIVITY INFORMATION

CONDITIONS CONTRIBUTING TO INSTABILITY

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

Section 11 - TOXICOLOGICAL INFORMATION

POTENTIAL HEALTH EFFECTS

ACUTE HEALTH EFFECTS

SWALLOWED

Although ingestion is not thought to produce harmful effects (as classified under EC Directives), the material may still be damaging to the health of the individual, following ingestion, especially where pre-existing organ (e.g liver, kidney) damage is evident. Present definitions of harmful or toxic substances are generally based on doses producing mortality rather than those producing morbidity (disease, ill-health). Gastrointestinal tract discomfort may produce nausea and vomiting. In an occupational setting however, ingestion of insignificant quantities is not thought to be cause for concern.

continued...

BARBITURIC ACID

Version No:2.0

Page 10 of 11

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).

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.
Open cuts, abraded or irritated skin should not be exposed to this material.

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 by accidental skin and eye contact and inhalation of generated dusts.
Derivatives are narcotic and addictive although the unsubstituted free acid is not. Alcohol has pronounced synergistic effect with barbiturates.

TOXICITY AND IRRITATION

TOXICITY

Oral (rat) LD50: > 5000 mg/kg

IRRITATION

Nil Reported

Section 12 - ECOLOGICAL INFORMATION

log Kow (Prager 1995): 1.47

No data for barbituric acid.

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.
- Puncture containers to prevent re-use.

Section 14 - TRANSPORTATION INFORMATION

HAZCHEM: None

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

continued...

BARBITURIC ACID

Version No:2.0

Page 11 of 11

Section 14 - TRANSPORTATION INFORMATION

Section 15 - REGULATORY INFORMATION

REGULATIONS

No regulations applicable

No data available for barbituric acid as CAS: 67-52-7, CAS: 253678-06-7, CAS: 408335-37-5, CAS: 253678-08-9, CAS: 223674-02-0, CAS: 160336-60-7, CAS: 158217-19-7, CAS: 154254-45-2, CAS: 118738-52-6, CAS: 117491-80-2, CAS: 63896-95-7, CAS: 53853-41-1, CAS: 51159-18-3, CAS: 465532-08-5, CAS: 32267-40-6, CAS: 20964-57-2, CAS: 16564-27-5, CAS: 42910-84-9, CAS: 774592-06-2, CAS: 860760-03-8, CAS: 477705-05-8, CAS: 678184-94-6.

Section 16 - OTHER INFORMATION

INGREDIENTS WITH MULTIPLE CAS NUMBERS

Ingredient Name
barbituric acid

CAS
67- 52- 7, 253678- 06- 7, 408335- 37- 5, 253678- 08- 9, 223674- 02- 0, 160336- 60- 7, 158217- 19- 7, 154254- 45- 2, 118738- 52- 6, 117491- 80- 2, 63896- 95- 7, 53853- 41- 1, 51159- 18- 3, 465532- 08- 5, 32267- 40 - 6, 20964- 57- 2, 16564- 27- 5, 42910- 84- 9, 774592- 06- 2, 860760- 03- 8, 477705- 05- 8, 678184- 94- 6

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: 5-Apr-2018