



INDOLE-3-ACETIC ACID (IAA)

GHS Safety Data Sheet

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Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME

INDOLE-3-ACETIC ACID

OTHER NAMES

C₁₀H₉N-O₂, C₁₀H₉N-O₂, "indol-3-ylacetic acid", "acetic acid, indolyl", Heteroauxin, "beta-indoleacetic acid", "beta-indole-3-acetic acid", "3-indoleacetic acid", "alpha-indol3-yl-acetic acid", "beta-indolylacetic acid", "indolyl-3-acetic acid", "3-indolylacetic acid", "kyselina 3-indolyloctova", Rhizopin, "Rhizopon A", "omega-skatole carboxylic acid"

PRODUCT USE

When suitably diluted with an inert material, as a plant growth regulator.

SUPPLIER

Company: S D FINE- CHEM LIMITED

Address:

315- 317, T.V. INDUSTRIAL ESTATE,

248, WORLI,

MUMBAI- 400030.INDIA.

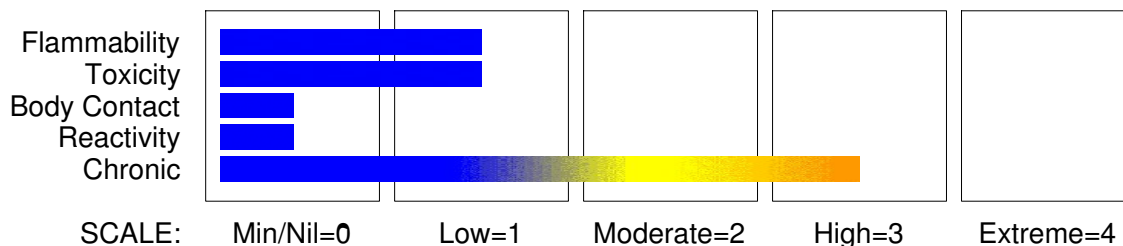
technical@sdfine.com

Telephone: 91- 22- 24959898

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HAZARD RATINGS



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Section 2 - HAZARDS IDENTIFICATION

GHS Classification

Reproductive Toxicity Category 1B



EMERGENCY OVERVIEW

HAZARD

DANGER

Determined by using GHS criteria:

H360

May damage the unborn child

PRECAUTIONARY STATEMENTS

Prevention

Do not handle until all safety precautions have been read and understood.

Use personal protective equipment as required.

Obtain special instructions before use.

Response

If exposed or concerned: Get medical attention advice.

Storage

Store locked up.

Disposal

Dispose of contents and container in accordance with relevant legislation.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
indole- 3- acetic acid	87-51-4	> 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

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Section 4 - FIRST AID MEASURES

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:

- 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.
- 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 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.

NOTES TO PHYSICIAN

Treat symptomatically.

Section 5 - FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

Water spray or fog.

Foam.

Dry agent.

Carbon dioxide.

FIRE FIGHTING

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 courses.
- Use fire fighting procedures suitable for surrounding area.
Use water delivered as a fine spray to control the fire and cool adjacent area.
DO NOT approach containers suspected to be hot.

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Section 5 - FIRE FIGHTING MEASURES

If safe to do so, remove containers from path of fire.
Equipment should be thoroughly decontaminated after use.

FIRE/EXPLOSION HAZARD

Combustible.

Emits toxic fumes if involved in fire.

May emit clouds of acrid smoke.

Decomposes on heating and produces toxic fumes of: nitrogen oxides (NO_x), carbon monoxide (CO) and carbon dioxide (CO₂).

FIRE INCOMPATIBILITY

Avoid reaction with oxidising agents, bases and strong reducing agents.

Section 6 - ACCIDENTAL RELEASE MEASURES

EMERGENCY PROCEDURES

MINOR SPILLS

Clean up all spills immediately.

Control personal contact by using protective equipment.

Shut off all possible sources of ignition and increase ventilation.

Use dry clean up procedures and avoid generating dust.

Sweep up.

Place in suitable containers for disposal.

MAJOR SPILLS

Clear area of personnel and move upwind.

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

Pollutant - contain spillage.

- Wear breathing apparatus plus protective gloves.

- Prevent, by any means available, spillage from entering drains or water courses.

Shut off all possible sources of ignition and increase ventilation.

Use dry clean up procedures and avoid generating dust.

Stop leak if safe to do so.

Collect recoverable product into labelled containers for recycling.

Collect residues and seal in labelled drums for disposal.

If contamination of drains or waterways occurs, advise emergency services.

After clean up operations, decontaminate and launder all protective clothing and equipment before storing and re-using.

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.

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Section 7 - HANDLING AND STORAGE

PROCEDURE FOR HANDLING

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.
Avoid all personal contact.
Avoid generating and breathing dust.
Wear protective clothing when risk of exposure occurs.
Use in a well-ventilated area.
Avoid contact with incompatible materials.
DO NOT spray directly on humans, exposed food or food utensils.
When handling, DO NOT eat, drink or smoke.
Keep containers securely sealed when not in use.
Always wash hands with soap and water after handling. Work clothes should be laundered separately.
Launder contaminated clothing before re-use.

SUITABLE CONTAINER

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

STORAGE INCOMPATIBILITY

Avoid contamination of water, foodstuffs, feed or seed.
Segregate from oxidising agents, alkalies and strong reducing agents.

STORAGE REQUIREMENTS

- Keep dry.
- 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.
- Protect containers against physical damage.
- Check regularly for leaks.
- Observe manufacturer's storing and handling recommendations.

Store away from foodstuff containers.

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE CONTROLS

The following materials had no OELs on our records

- indole- 3- acetic acid: CAS:87- 51- 4 CAS:54692- 39- 6

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Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

PERSONAL PROTECTION



EYE

- Chemical goggles.
- Safety glasses.
- Full face shield.
- 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

- Impervious gloves.
- PVC gloves.
- Rubber gloves.
- Rubber boots.
- Protective footwear.

OTHER

- Overalls.
- Impervious protective clothing.
- Eyewash unit.
- Ensure there is ready access to a safety shower.
- Overalls.
- PVC Apron.
- PVC protective suit may be required if exposure severe.
- Eyewash unit.
- Ensure there is ready access to a safety shower.

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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Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

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

ENGINEERING CONTROLS

General exhaust is adequate under normal operating conditions. Local exhaust ventilation may be required in specific circumstances. If risk of overexposure exists, wear approved respirator. Correct fit is essential to obtain adequate protection. Provide adequate ventilation in warehouse or closed 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

APPEARANCE

White crystals or powder; sparingly soluble in water.

PHYSICAL PROPERTIES

Solid.

Does not mix with water.

Molecular Weight: 175.18

Melting Range (°C): 168- 170

Solubility in water (g/L): Immiscible

pH (1% solution): Not applicable

Volatile Component (%vol): Not applicable

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): Not applicable

Evaporation Rate: Not applicable

Flash Point (°C): Not available

Upper Explosive Limit (%): Not available

Decomposition Temp (°C): Not available

Section 10 - CHEMICAL STABILITY AND REACTIVITY INFORMATION

CONDITIONS CONTRIBUTING TO INSTABILITY

Presence of incompatible materials.

Product is considered stable under normal handling conditions.

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.

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

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).

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Section 11 - TOXICOLOGICAL INFORMATION

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.

CHRONIC HEALTH EFFECTS

Principal routes of exposure are usually by skin contact / eye contact 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.

There is limited information in the literature regarding the effects of both acute and chronic overexposure.

TOXICITY AND IRRITATION

Not available.

unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances

Section 12 - ECOLOGICAL INFORMATION

Toxicity Fish: LD50(60)70.33mg/L

Section 13 - DISPOSAL CONSIDERATIONS

Recycle wherever possible.

Consult manufacturer for recycling options.

Consult State Land Waste Management Authority for disposal.

DO NOT discharge into sewer or waterways.

Bury or incinerate residue at an approved site.

Decontaminate empty containers with water.

Puncture containers to prevent re-use.

Bury empty containers at 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

REGULATIONS

No regulations applicable

No data available for indole-3-acetic acid as CAS: 87-51-4, CAS: 54692-39-6.

Section 16 - OTHER INFORMATION

INGREDIENTS WITH MULTIPLE CAS NUMBERS

Ingredient Name	CAS
indole- 3- acetic acid	87- 51- 4, 54692- 39- 6

REPRODUCTIVE HEALTH GUIDELINES

Established occupational exposure limits frequently do not take into consideration reproductive end points that are clearly below the thresholds for other toxic effects. Occupational reproductive guidelines (ORGs) have been suggested as an additional standard. These have been established after a literature search for reproductive no -observed-adverse effect-level (NOAEL) and the lowest-observed-adverse-effect-level (LOAEL). In addition the US EPA's procedures for risk assessment for hazard identification and dose-response assessment as applied by NIOSH were used in the creation of such limits. Uncertainty factors (UFs) have also been incorporated.

Ingredient	ORG	UF	Endpoi nt	CR	Adeq TLV
indole- 3- acetic acid	6 mg/m3	100	D	NA	-

These exposure guidelines have been derived from a screening level of risk assessment and should not be construed as unequivocally safe limits. ORGS represent an 8-hour time -weighted average unless specified otherwise.

CR = Cancer Risk/10000; UF = Uncertainty factor:

TLV believed to be adequate to protect reproductive health:

LOD: Limit of detection

Toxic endpoints have also been identified as:

D = Developmental; R = Reproductive; TC = Transplacental carcinogen

Jankovic J., Drake F.: A Screening Method for Occupational Reproductive
American Industrial Hygiene Association Journal 57: 641-649 (1996).

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.

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