

PARALDEHYDE

GHS Safety Data Sheet

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Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME

PARALDEHYDE

OTHER NAMES

C6-H12-O3, paraacetaldehyde, PCHO, paracetaldehyde, triacetaldehyde, "2, 4, 6-trimethyl-s-trioxane"

PROPER SHIPPING NAME

PARALDEHYDE

PRODUCT USE

Substitute for acetaldehyde, rubber accelerators, rubber antioxidants, synthetic organic chemicals, dyestuff intermediates, solvent for fats, oils, waxes, gums, resins; leather, solvent mixture for cellulose derivatives, sedative (hypnotic).

SUPPLIER

Company: S D FINE- CHEM LIMITED

Address:

315- 317, T.V. INDUSTRIAL ESTATE,

248, WORLI,

MUMBAI- 400030.INDIA.

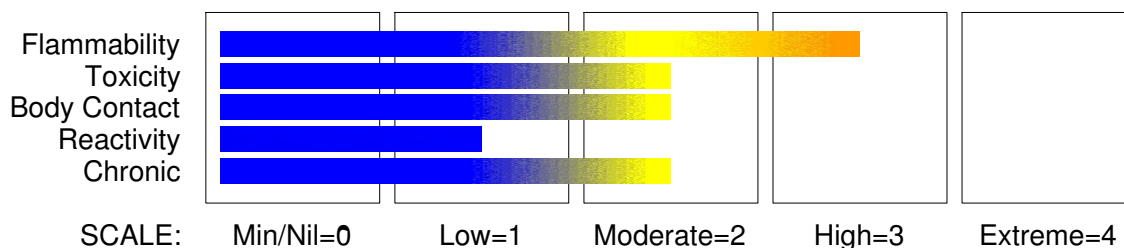
technical@sdfine.com

Telephone: 91- 22- 24959898

Telephone: 91- 22- 24959899

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HAZARD RATINGS



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Section 2 - HAZARDS IDENTIFICATION

GHS Classification

Acute Toxicity (Oral) Category 4
Eye Irritation Category 2A
Flammable Liquid Category 3
Reproductive Toxicity Category 2
Respiratory Irritation Category 3



EMERGENCY OVERVIEW

HAZARD

WARNING
Determined by using GHS criteria:
H335 H226 H302 H319 H361
May cause respiratory irritation
Flammable liquid and vapour
Harmful if swallowed
Causes serious eye irritation
Suspected of damaging the unborn child

PRECAUTIONARY STATEMENTS

Prevention

Wash hands thoroughly after handling.
Do not eat, drink or smoke when using this product.
Ground/bond container and receiving equipment.
Use personal protective equipment as required.
Do not handle until all safety precautions have been read and understood.
Obtain special instructions before use.
Use only non-sparking tools.
Wear protective gloves and eye/face protection.
Keep container tightly closed.
Keep away from heat/sparks/open flame - No smoking.
Take precautionary measures against static discharge
Use explosion-proof electrical/ventilating/lighting/equipment

Response

If eye irritation persists, get medical advice/attention.
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
Wear eye/face protection.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If on skin or hair: remove/take off immediately all contaminated clothing. Rinse with water/shower.
Specific treatment: refer to Label or MSDS.
If exposed or concerned: Get medical attention advice.

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Section 2 - HAZARDS IDENTIFICATION

Storage

Store locked up.

Disposal

Dispose of contents and container in accordance with relevant legislation.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
paraldehyde	123-63-7	>99
decomposes on standing or in water/moisture to acetaldehyde	75-07-0	

Section 4 - FIRST AID MEASURES

SWALLOWED

For advice, contact a Poisons Information Centre or a doctor.

- 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.
- Seek medical advice.

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.

NOTES TO PHYSICIAN

Treat symptomatically.

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Section 5 - FIRE FIGHTING MEASURES

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.
- May be violently or explosively reactive.
- Wear breathing apparatus plus protective gloves.
- Prevent, by any means available, spillage from entering drains or water course.
- Consider evacuation (or protect in place).
- Fight fire from a safe distance, with adequate cover.
- If safe, switch off electrical equipment until vapour fire hazard removed.
- Use water delivered as a fine spray to control the fire and cool adjacent area.
- Avoid spraying water onto liquid pools.
- 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.

FIRE/EXPLOSION HAZARD

- Liquid and vapour are flammable.
 - Moderate fire hazard when exposed to heat or flame.
 - Vapour forms an explosive mixture with air.
 - Moderate explosion hazard when exposed to heat or flame.
 - Vapour may travel a considerable distance to source of ignition.
 - Heating may cause expansion or decomposition leading to violent rupture of containers.
 - On combustion, may emit toxic fumes of carbon monoxide (CO).
- Other combustion products include: carbon dioxide (CO₂).

FIRE INCOMPATIBILITY

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

Personal Protective Equipment

Gloves, boots (chemical resistant).
Breathing apparatus.

Section 6 - ACCIDENTAL RELEASE MEASURES

EMERGENCY PROCEDURES

MINOR SPILLS

- Remove all ignition sources.
- Clean up all spills immediately.
- Avoid breathing vapours and contact with skin and eyes.
- Control personal contact by using protective equipment.
- Contain and absorb small quantities with vermiculite or other absorbent material.
- Wipe up.
- Collect residues in a flammable waste container.

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Section 6 - ACCIDENTAL RELEASE MEASURES

MAJOR SPILLS

- Clear area of personnel and move upwind.
- Alert Fire Brigade and tell them location and nature of hazard.
- May be violently or explosively reactive.
- 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.
- Water spray or fog may be used to disperse / absorb vapour.
- Contain spill with sand, earth or vermiculite.
- Use only spark-free shovels and explosion proof equipment.
- 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.
- 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:

paraldehyde 500 mg/m³

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

paraldehyde 50 mg/m³

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

paraldehyde 30 mg/m³

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

paraldehyde 10 mg/m³

American Industrial Hygiene Association (AIHA)

Ingredients considered according to the following cutoffs

Very Toxic (T+)	$\geq 0.1\%$	Toxic (T)	$\geq 3.0\%$
R50	$\geq 0.25\%$	Corrosive (C)	$\geq 5.0\%$
R51	$\geq 2.5\%$		
else	$\geq 10\%$		

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 preventions

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

- Avoid all personal contact, including inhalation.
- Wear protective clothing when risk of overexposure 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 generation of static electricity.
- DO NOT use plastic buckets.
- Earth all lines and equipment.
- Use spark-free tools when handling.
- 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.

- Packing as supplied by manufacturer.
- Plastic containers may only be used if approved for flammable liquid.
- Check that containers are clearly labelled and free from leaks.

STORAGE INCOMPATIBILITY

Avoid reaction with oxidising agents.
Avoid strong acids.

STORAGE REQUIREMENTS

- Rotate all stock to prevent ageing. Use on FIFO (First In-First Out) basis.
- Store in original containers in approved flammable liquid storage area.
- DO NOT store in pits, depressions, basements or areas where vapours may be trapped.
- No smoking, naked lights, heat or ignition sources.
- Keep containers securely sealed.
- Store away from incompatible materials in a cool, dry, well-ventilated area.
- Protect containers against physical damage and check regularly for leaks.
- Observe manufacturer's storing and handling recommendations.

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE CONTROLS

The following materials had no OELs on our records

- paraldehyde: CAS:123- 63- 7 CAS:51289- 71- 5
- acetaldehyde: CAS:75- 07- 0

EMERGENCY EXPOSURE LIMITS

Material	Revised IDLH Value (mg/m3)	Revised IDLH Value (ppm)
acetaldehyde		2, 000

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Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

ODOUR SAFETY FACTOR (OSF)

OSF=4E2 (ACETALDEHYDE)

MATERIAL DATA

No exposure limits set by NOHSC or ACGIH.

Exposed individuals are reasonably expected to be warned, by smell, that the Exposure Standard is being exceeded.

Odour Safety Factor (OSF) is determined to fall into either Class A or B.

The Odour Safety Factor (OSF) is defined as:

OSF= Exposure Standard (TWA) ppm/ Odour Threshold Value (OTV) ppm

Classification into classes follows:

Class	OSF	Description
A	550	Over 90% of exposed individuals are aware by smell that the Exposure Standard (TLV- TWA for example) is being reached, even when distracted by working activities
B	26- 550	As " A" for 50- 90% of persons being distracted
C	1- 26	As " A" for less than 50% of persons being distracted
D	0.18- 1	10- 50% of persons aware of being tested perceive by smell that the Exposure Standard is being reached
E	<0.18	As " D" for less than 10% of persons aware of being tested

OEL STEL (Russia): 5 mg/m³

INGREDIENT DATA

ACETALDEHYDE:

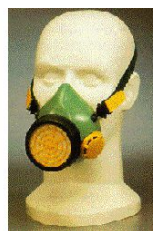
Odour Threshold Value: 0.067 ppm (detection)

NOTE:Detection tubes for acetaldehyde, measuring in excess of 5 ppm, are commercially available.

Exposure at or below the recommended TLV is thought to prevent excessive eye irritation and potential injury to the respiratory tract.

The US EPA has assigned an upper limit unit risk estimate of 4×10^{-3} per ppm inhaled and a relative potency for tumour formation of 1/250 of that for formaldehyde. The US EPA also reported that for chronic exposure at 2 ppm with limited daily exposure at 10-40 ppm, the estimated risks of a tumourigenic response are 10^{-4} to 10^{-5} .

PERSONAL PROTECTION



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Section 8 - EXPOSURE CONTROLS / 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.
- PVC Apron.
- PVC protective suit may be required if exposure severe.
- Eyewash unit.
- Ensure there is ready access to a safety shower.

RESPIRATOR

Selection of the Class and Type of respirator will depend upon the level of breathing zone contaminant and the chemical nature of the contaminant. Protection Factors (defined as the ratio of contaminant outside and inside the mask) may also be important.

Breathing Zone Level ppm (volume)	Maximum Protection Factor	Half- face Respirator	Full- Face Respirator
1000	10	AX- AUS	-
1000	50	-	AX- AUS
5000	50	Airline *	-
5000	100	-	AX- 2
10000	100	-	AX- 3
	100+		Airline**

* - Continuous Flow

** - Continuous-flow or positive pressure demand.

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

No special equipment needed when handling small quantities.
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:
solvent, vapours, degreasing etc., evaporating
from tank (in still air).

Air Speed:
0.25- 0.5 m/s (50- 100 f/min)

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Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

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.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE

Colourless liquid with an agreeable odour; mixes with water, most organic solvents and volatile oils. Disagreeable taste. Decomposes on standing.

PHYSICAL PROPERTIES

Liquid.

Molecular Weight: 132.18	Boiling Range (°C): 124.5
Melting Range (°C): 12.6	Specific Gravity (water=1): 0.99
Solubility in water (g/L): Reacts	pH (as supplied): Not applicable
pH (1% solution): Not available	Vapour Pressure (kPa): 3.37 @ 20C.
Volatile Component (%vol): Not available	Evaporation Rate: Not available
Relative Vapour Density (air=1): 4.5	Flash Point (°C): 25
Lower Explosive Limit (%): 1.3	Upper Explosive Limit (%): Not available
Autoignition Temp (°C): 237	Decomposition Temp (°C): Not available
State: Liquid	Viscosity: Not available

log Kow: 0.59-0.95
log Kow (Prager 1995): 0.43, - 0.34
log Kow (Sangster 1997): 0.45

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Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

log Kow: -0.4

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

Accidental ingestion of the material may be harmful; animal experiments indicate that ingestion of less than 150 gram may be fatal or may produce serious damage to the health of the individual.

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

In an occupational setting, incidental exposure to the material may produce identical effects to those produced in therapy. Individual workers are expected to exhibit the same range of responses as those receiving the drug under supervision. Because individuals with a history of psychiatric disorders of addiction to, or abuse of, drugs and alcohol are at increased risk of habituation and dependence, they should be under surveillance when receiving any hypnotic drug. The most common side-effects of sleep medicines include drowsiness, dizziness, lightheadedness and difficult coordination. Alcohol may increase the side-effects of these drugs. Sleep medicines may also cause a special type of memory loss or "amnesia". When this occurs an individual may not remember events occurring several hours after taking the drug. When taking sleep drugs every night for several weeks, tolerance may develop and may lead to the individual increasing the dose to elicit earlier effects. When used at high doses for several weeks, dependence or "addiction" may also occur. Withdrawal symptoms may include unpleasant feelings in mild cases, whilst in more severe cases there may be abdominal and muscle cramps, vomiting, sweating, shakiness, and rarely, seizures. Rebound insomnia may also occur after withdrawal of the drug; an individual may have more trouble sleeping the first few nights after the drug is stopped than before starting treatment. Less common amongst individuals using hypnotic drugs are behavioural changes: these include loss of personal identity, confusion, strange behaviour, agitation, hallucinations, worsening of depression and suicidal thoughts. Sleep drugs may also cause sedation of the unborn baby when used during the last weeks of pregnancy.

EYE

Evidence exists, or practical experience predicts, that the material may cause eye irritation in a substantial number of individuals and/or may produce significant ocular lesions which are present twenty-four hours or more after instillation into the eye(s) of experimental animals.

Repeated or prolonged eye contact may cause inflammation characterised by temporary redness (similar to windburn) of the conjunctiva (conjunctivitis); temporary impairment of vision and/or other transient eye damage/ulceration may occur.

The material may produce severe irritation to the eye causing pronounced inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.

PARALDEHYDE

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.

The material may cause skin irritation after prolonged or repeated exposure and may produce a contact dermatitis (nonallergic). This form of dermatitis is often characterised by skin redness (erythema) and swelling epidermis. Histologically there may be intercellular oedema of the spongy layer (spongiosis) and intracellular oedema of the epidermis.

INHALED

Limited evidence exists, or practical experience predicts, that the material produces irritation of the respiratory system in a significant number of individuals following inhalation.

Inhalation hazard is increased at higher temperatures.

Inhalation of vapour may aggravate a pre-existing respiratory condition.

Exposure to the simple aldehydes may result in central nervous system effects including headache, vertigo, seizures, depression and coma. Cardiovascular involvement may result in tachycardia, cardiovascular collapse and hypotension whilst respiratory tract involvement may result in irritation, upper airway oedema and laryngospasm, cough, dysphagia, pulmonary oedema, bronchial constriction, and asthma-like reactive airway disease. Gastrointestinal effects include nausea, vomiting (haematemesis), diarrhoea, severe mucosal necrosis and abdominal pain. Massive exposures may produce kidney and liver damage. Animals exposed to aldehyde vapours often show damage to the respiratory tract and pulmonary oedema. Multiple haemorrhages and alveolar exudate may also be present. In general, the aldehydes appear to be free of the actions that lead to cumulative organic damage to tissues. Intolerable irritant properties of these compounds preclude substantial worker exposure under normal conditions although these products may cause olfactory fatigue at lower concentrations and therefore may not provide adequate warning of overexposure based on smell alone. Rapid metabolic conversion to innocuous compounds probably limits those critical reactions necessary to initiate or promote tumourigenesis, although tissue irritation even at low exposure may promote tumour formation by other compounds. Caution is therefore mandatory. Development of short-term tolerance to aldehyde vapours has been reported. This may be related to reaction with catecholamines leading to depletion of the catecholamine stores in the smooth muscle of the respiratory tract. Such depletion may cause the sensory nerve endings of the upper respiratory tract to exhibit reduced activity thus lessening the initial respiratory distress. Although a number of aldehydes produce narcosis, this effect is rarely observed because the irritation that accompanies exposure generally serves as a sufficient warning property.

CHRONIC HEALTH EFFECTS

Principal routes of exposure are by accidental skin and eye contact and by inhalation of vapours especially at higher temperatures.

Children borne of mothers taking sedative/ hypnotic drugs may be at risk for withdrawal symptoms from the drug during the postnatal period. In addition, neonatal flaccidity has been reported in infants born of mothers who receive sedative/hypnotic drugs during pregnancy.

Abuse may lead to habituation or addiction.

TOXICITY AND IRRITATION

TOXICITY

Oral (rat) LD50: 1530 mg/kg

Inhalation (rat) LCLo: 2000 ppm/4h

Dermal (rabbit) LD50: 14000 mg/kg

IRRITATION

Skin (rabbit): 500 mg Open Mild

Eye (rabbit): 5 mg SEVERE

ACETALDEHYDE:
TOXICITY

IRRITATION

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Section 11 - TOXICOLOGICAL INFORMATION

Oral (rat) LD50: 661 mg/kg
Inhalation (human) TCLO: 134 ppm/30m
Inhalation (rat) LC50: 37000 mg/m³/30m
Dermal (rabbit) LD50: 3540 mg/kg
Eye (human): 50 ppm/15min
Eye (rabbit): 40 mg SEVERE
Skin (rabbit): 500 mg Open Mild
WARNING: This substance has been classified by the IARC as Group 2B: Possibly Carcinogenic to Humans.
Tenth Annual Report on Carcinogens: Substance anticipated to be Carcinogen
[National Toxicology Program: U.S. Dep. of Health & Human Services 2002].

Section 12 - ECOLOGICAL INFORMATION

log Pow (Verschueren 1983): 059/0.95

log Kow: 0.59-0.95

Toxicity Fish: LC50(96)0.32mg/L

Refer to data for ingredients, which follows:

ACETALDEHYDE:

Hazardous Air Pollutant: Yes

Fish LC50 (96hr.) (mg/l): 30.8

log Kow (Prager 1995): 0.43, - 0.34

log Kow (Sangster 1997): 0.45

DO NOT discharge into sewer or waterways.

log Kow: -0.4

BOD 5 if unstated: 1.27-1.3

ThOD: 1.82

Toxicity Fish: TLm(96)70mg/L

Toxicity invertebrate: cell mult. inhib. 57mg/L

Anaerobic effects: sig degrad

Degradation Biological: sig

processes Abiotic: photol

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



Labels Required: FLAMMABLE LIQUID
HAZCHEM: 2[Y]

UNDG:

Dangerous Goods Class: 3
UN Number: 1264

Subrisk:
Packing Group:

None
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Section 14 - TRANSPORTATION INFORMATION

Shipping Name:PARALDEHYDE

Air Transport IATA:

ICAO/IATA Class:	3	ICAO/IATA Subrisk:	None
UN/ID Number:	1264	Packing Group:	III
ERG Code:	3L		
Shipping name:PARALDEHYDE			

Maritime Transport IMDG:

IMDG Class:	3	IMDG Subrisk:	None
UN Number:	1264	Packing Group:	III
EMS Number:	F- E, S- D		
Shipping name:PARALDEHYDE			

Section 15 - REGULATORY INFORMATION

REGULATIONS

paraldehyde (CAS: 123-63-7) is found on the following regulatory lists;
IMO MARPOL 73/78 (Annex II) - List of Noxious Liquid Substances Carried in Bulk

No data available for paraldehyde as CAS: 51289-71-5.

Section 16 - OTHER INFORMATION

INGREDIENTS WITH MULTIPLE CAS NUMBERS

Ingredient Name	CAS
paraldehyde	123- 63- 7, 51289- 71- 5

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
acetaldehyde	14.4 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

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Section 16 - OTHER INFORMATION

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.

Issue Date: 27-Oct-2017