

**JASOL D-STAIN**Hazard Alert Code:  
HIGH

Chemwatch Material Safety Data Sheet

Revision No: 3

Chemwatch 4614-60

Issue Date: 22-Jan-2006

CD 2009/3

**Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION****PRODUCT NAME**

Jasol D-Stain

**SYNONYMS**

"general purpose stain remover", "pre-soak for stainless steel cutlery"

**PRODUCT USE**

General purpose stain remover &amp; pre-soak for stainless steel cutlery.

**SUPPLIER**

Company: Jasol Australia

Address:

41-45 Tarnard Drive

Braeside VIC 3195

Telephone: +613 9580 5722

Emergency Tel: 1 800 629 953

Fax: +613 9580 9902

Company: Jasol New Zealand

Address:

151B Marua Road

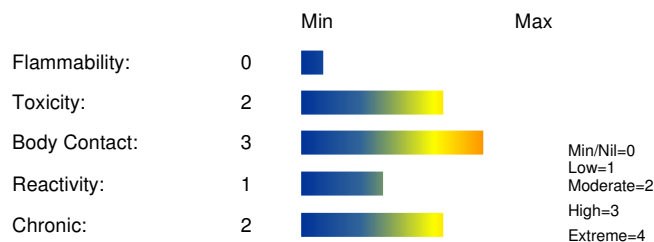
Auckland

Telephone: +64 9580 2105

Emergency Tel: 0800 243 622 (Chemcall)

Emergency Tel: 0800 764 766 (National Poisons Dunedin)

Fax: +64 9571 4388

**HAZARD RATINGS****Section 2 - HAZARDS IDENTIFICATION****STATEMENT OF HAZARDOUS NATURE****HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS. According to the Criteria of NOHSC, and the ADG Code.****POISONS SCHEDULE**

None

**RISK**

- Harmful by inhalation and if swallowed.
- Irritating to respiratory system and skin.
- Risk of serious damage to eyes.
- Cumulative effects may result following exposure\*.
- Possible skin sensitiser\*.

\* (limited evidence).

**SAFETY**

- Do not breathe dust.
- Wear suitable protective clothing.
- Use only in well ventilated areas.
- Keep container in a well ventilated place.
- To clean the floor and all objects contaminated by this material use water.
- Keep away from food drink and animal feeding stuffs.
- If swallowed IMMEDIATELY contact Doctor or Poisons Information Centre (show this container or label).

**Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS**

NAME	CAS RN	%
additives nonhazardous		30-60
<a href="#">sodium carbonate</a>	497-19-8	10-30

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[sodium percarbonate](#)

4452-58-8

10-30

surfactants, nonhazardous

0-10

[alkaline salts](#)

Not avail.

0-10

**Section 4 - FIRST AID MEASURES****SWALLOWED**

- 
- 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:
- 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, without delay.

**NOTES TO PHYSICIAN**

- For acute or short-term repeated exposures to highly alkaline materials:
- Respiratory stress is uncommon but present occasionally because of soft tissue edema.
- Unless endotracheal intubation can be accomplished under direct vision, cricothyroidotomy or tracheotomy may be necessary.
- Oxygen is given as indicated.
- The presence of shock suggests perforation and mandates an intravenous line and fluid administration.
- Damage due to alkaline corrosives occurs by liquefaction necrosis whereby the saponification of fats and solubilisation of proteins allow deep penetration into the tissue.

Alkalis continue to cause damage after exposure.

**INGESTION:**

- Milk and water are the preferred diluents
- No more than 2 glasses of water should be given to an adult.
- Neutralising agents should never be given since exothermic heat reaction may compound injury.
- \* Catharsis and emesis are absolutely contra-indicated.  
 \* Activated charcoal does not absorb alkali.  
 \* Gastric lavage should not be used.

Supportive care involves the following:

- Withhold oral feedings initially.
- If endoscopy confirms transmucosal injury start steroids only within the first 48 hours.
- Carefully evaluate the amount of tissue necrosis before assessing the need for surgical intervention.
- Patients should be instructed to seek medical attention whenever they develop difficulty in swallowing (dysphagia).

**SKIN AND EYE:**

- Injury should be irrigated for 20-30 minutes.
- Eye injuries require saline. [Ellenhorn & Barceloux: Medical Toxicology].

**Section 5 - FIRE FIGHTING MEASURES****EXTINGUISHING MEDIA**

- 
- There is no restriction on the type of extinguisher which may be used.

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- Use extinguishing media suitable for surrounding area.

**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**

- - Non combustible.
  - Not considered a significant fire risk, however containers may burn.
- Decomposition may produce toxic fumes of: carbon dioxide (CO<sub>2</sub>), phosphorus oxides (PO<sub>x</sub>), other pyrolysis products typical of burning organic material.  
May emit poisonous fumes.  
May emit corrosive fumes.

**FIRE INCOMPATIBILITY**

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

**HAZCHEM**

None

**Personal Protective Equipment**

Gas tight chemical resistant suit.

**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.
- CAUTION: Advise personnel in area.
- Alert Emergency Services and tell them location and nature of hazard.
- Control personal contact by wearing protective clothing.
- Prevent, by any means available, spillage from entering drains or water courses.
- Recover product wherever possible.
- IF DRY: Use dry clean up procedures and avoid generating dust. Collect residues and place in sealed plastic bags or other containers for disposal. IF WET: Vacuum/shovel up and place in labelled containers for disposal.
- ALWAYS: Wash area down with large amounts of water and prevent runoff into drains.
- If contamination of drains or waterways occurs, advise Emergency Services.

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

**Section 7 - HANDLING AND STORAGE****PROCEDURE FOR HANDLING**

- 
- DO NOT use aluminium, galvanised or tin-plated containers
- 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.
- DO NOT allow material to contact humans, exposed food or food utensils.
- Avoid contact with incompatible materials.
- When handling, DO NOT eat, drink or smoke.

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- 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. Launder contaminated clothing before re-use.
- 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**

- Polyethylene or polypropylene container.
- Check all containers are clearly labelled and free from leaks.

**STORAGE INCOMPATIBILITY**

- Contact with water can cause heating and decomposition
- In presence of moisture, the material is corrosive to aluminium, zinc and tin producing highly flammable hydrogen gas.
- Reacts with aluminium / zinc producing flammable, explosive hydrogen gas.
- Avoid strong acids, acid chlorides, acid anhydrides and chloroformates.
- Avoid reaction with oxidising agents

**STORAGE REQUIREMENTS**

- Store in original containers.
- Keep containers securely sealed.
- Store in a cool, dry area protected from environmental extremes.
- 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

For major quantities:

- Consider storage in bunded areas - ensure storage areas are isolated from sources of community water (including stormwater, ground water, lakes and streams).
- Ensure that accidental discharge to air or water is the subject of a contingency disaster management plan; this may require consultation with local authorities.

**SAFE STORAGE WITH OTHER CLASSIFIED CHEMICALS**

+

X

+

X

X

+

*X: Must not be stored together**O: May be stored together with specific preventions**+: May be stored together***Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION****EXPOSURE CONTROLS**

The following materials had no OELs on our records

- sodium carbonate: CAS:497-19-8
- sodium percarbonate: CAS:4452-58-8 CAS:15630-89-4

**MATERIAL DATA**

JASOL D-STAIN:

Not available

SODIUM CARBONATE:

■ It is the goal of the ACGIH (and other Agencies) to recommend TLVs (or their equivalent) for all substances for which there is evidence of health effects at airborne concentrations encountered in the workplace.

At this time no TLV has been established, even though this material may produce adverse health effects (as evidenced in animal experiments or clinical experience). Airborne concentrations must be maintained as low as is practically possible and occupational exposure must be kept to a minimum.

NOTE: The ACGIH occupational exposure standard for Particles Not Otherwise Specified (P.N.O.S) does NOT apply.

Sensory irritants are chemicals that produce temporary and undesirable side-effects on the eyes, nose or throat. Historically occupational exposure standards for these irritants have been based on observation of workers' responses to various airborne concentrations. Present day expectations require that nearly every individual should be protected against even minor sensory irritation and exposure standards are established using uncertainty factors or safety factors of 5 to 10 or more. On occasion animal no-observable-effect-levels (NOEL) are used to determine these limits where human results are unavailable. An additional approach, typically used by the TLV committee (USA) in determining respiratory standards for this group of chemicals, has been to

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assign ceiling values (TLV C) to rapidly acting irritants and to assign short-term exposure limits (TLV STELs) when the weight of evidence from irritation, bioaccumulation and other endpoints combine to warrant such a limit. In contrast the MAK Commission (Germany) uses a five-category system based on intensive odour, local irritation, and elimination half-life. However this system is being replaced to be consistent with the European Union (EU) Scientific Committee for Occupational Exposure Limits (SCOEL); this is more closely allied to that of the USA.

OSHA (USA) concluded that exposure to sensory irritants can:

- cause inflammation
- cause increased susceptibility to other irritants and infectious agents
- lead to permanent injury or dysfunction
- permit greater absorption of hazardous substances and
- acclimate the worker to the irritant warning properties of these substances thus increasing the risk of overexposure.

OEL STEL: (Russia) 5 mg/m<sup>3</sup>

SODIUM PERCARBONATE:

- for hydrogen peroxide

NOTE: Detector tubes for hydrogen peroxide, measuring in excess of 0.1 ppm, are available commercially.

Exposure at or below the TLV-TWA is thought to minimise irritation and bleaching of hair.

**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 or safety gumboots, eg. Rubber

NOTE:

- The material may produce skin sensitisation in predisposed individuals. Care must be taken, when removing gloves and other protective equipment, to avoid all possible skin contact.
- Contaminated leather items, such as shoes, belts and watch-bands should be removed and destroyed.

**OTHER**

- 
- Overalls.
- P.V.C. apron.
- Barrier cream.
- Skin cleansing cream.
- Eye wash 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 site specific CHEMWATCH data (if available), or 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.

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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.

**Section 9 - PHYSICAL AND CHEMICAL PROPERTIES****APPEARANCE**

White, granular powder; mixes with water.

**PHYSICAL PROPERTIES**

Mixes with water.

Alkaline.

Molecular Weight: Not Applicable	Boiling Range (°C): Not Available	Melting Range (°C): Not Available
Specific Gravity (water=1): Not Available	Solubility in water (g/L): Miscible	pH (as supplied): 10.8-11.2
pH (1% solution): Not Available	Vapour Pressure (kPa): Not Applicable	Volatile Component (%vol): Not Applicable
Evaporation Rate: Not Applicable	Relative Vapour Density (air=1): Not Applicable	Flash Point (°C): Not Applicable
Lower Explosive Limit (%): Not Applicable	Upper Explosive Limit (%): Not Applicable	Autoignition Temp (°C): Not Applicable
Decomposition Temp (°C): Not Available	State: Divided Solid	Viscosity: Not Applicable

Material	Value
log Kow	-1.36

**Section 10 - CHEMICAL STABILITY****CONDITIONS CONTRIBUTING TO INSTABILITY**

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

For incompatible materials - refer to Section 7 - Handling and Storage.

**Section 11 - TOXICOLOGICAL INFORMATION****POTENTIAL HEALTH EFFECTS****ACUTE HEALTH EFFECTS  
SWALLOWED**

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

The material is not thought to produce adverse health effects following ingestion (as classified by EC Directives using animal models). Nevertheless, adverse systemic effects have been produced following exposure of animals by at least one other route and good hygiene practice requires that exposure be kept to a minimum.

**EYE**

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

**SKIN**

- The material may accentuate any pre-existing dermatitis condition.

Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.

The material may cause skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin.

**INHALED**

- Inhalation of dusts, generated by the material, during the course of normal handling, may be harmful.

The material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage.

**CHRONIC HEALTH EFFECTS**

- Principal routes of exposure are by accidental skin and eye contact and inhalation of generated dusts.

Long term exposure to high dust concentrations may cause changes in lung function i.e. pneumoconiosis; caused by particles less than 0.5 micron penetrating and remaining in the lung. Prime symptom is breathlessness; lung shadows show on X-ray.

Prolonged or continuous skin contact with the liquid may cause defatting with drying, cracking, irritation and dermatitis following.

There is limited evidence that, skin contact with this product is more likely to cause a sensitisation reaction in some persons compared to the general population.

Chronic inhalation exposure may result in nasal ulceration and/or perforation of nasal septum.

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**

- Not available. Refer to individual constituents.

**SODIUM CARBONATE:**

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

**TOXICITY**

Oral (rat) LD50: 4090 mg/kg

Inhalation (rat) LC50: 2300 mg/m<sup>3</sup>/2h**IRRITATION**

Skin (rabbit): 500 mg/24h Mild

Eye (rabbit): 100 mg/24h Moderate

Eye (rabbit): 100 mg/30s Mild

Eye (rabbit): 50 mg SEVERE

- Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a non-allergenic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound. Key criteria for the diagnosis of RADS include the absence of preceding respiratory disease, in a non-atopic individual, with abrupt onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. A reversible airflow pattern, on spirometry, with the presence of moderate to severe bronchial hyperreactivity on methacholine challenge testing and the lack of minimal lymphocytic inflammation, without eosinophilia, have also been included in the criteria for diagnosis of RADS. RADS (or asthma) following an irritating inhalation is an infrequent disorder with rates related to the concentration of and duration of exposure to the irritating substance. Industrial bronchitis, on the other hand, is a disorder that occurs as result of exposure due to high concentrations of irritating substance (often particulate in nature) and is completely reversible after exposure ceases. The disorder is characterised by dyspnea, cough and mucus production.

The material may cause skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin.

**SODIUM PERCARBONATE:**

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

**TOXICITY**

Oral (rat) LD50: 2400 mg/kg

Oral (mouse) LD50: 2200 mg/kg

**IRRITATION**

Nil Reported

- For sodium percarbonate:

Sodium percarbonate is an inorganic, water soluble solid of relatively low molecular weight. Dermal absorption is assumed to be low due to the hydrophilic character and the ionic structure of the substance. When sodium percarbonate is getting into contact with body fluids it will dissociate into hydrogen peroxide, carbonate and sodium ions which are all naturally present in the human body. For hydrogen peroxide a high degradation capacity is present in the blood and tissues, making it unlikely that hydrogen peroxide is systemically available. As carbonate is a part of the natural buffer systems in the organism it is unlikely that it is absorbed through sodium percarbonate exposure in amounts that would disturb the normal acid/base balance of the body. Similarly for sodium percarbonate exposure is not expected to contribute significantly to the sodium load of the body. The mode of action is characterized by the local irritation potential in particular to mucous membranes. No systemic effects are anticipated because it is unlikely that the substance is systemically available.

Acute oral LD50 values ranged between 1034 and 2200 mg/kg bw, while the acute dermal LD50 was > 2000 mg/kg bw. The existing animal data on acute toxicity show that sodium percarbonate has a local effect and that systemic effects are not to be expected. In animal tests a slight irritating effect on the skin was reported for solid sodium percarbonate and it was highly irritating to the rabbit eye (not rinsed). Sodium percarbonate did not have sensitising properties in a test with guinea pigs. The acute

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studies indicate that most of the acute and local effects can be explained by the release of hydrogen peroxide.

Although a repeated dose study is not available for sodium percarbonate, effects can be predicted based on the release of hydrogen peroxide, carbonate and sodium. As it is expected that repeated dose toxicity of sodium percarbonate will mainly be mediated by hydrogen peroxide, no observed adverse effect levels can be defined on the basis of its hydrogen peroxide content. Based on the 90-day drinking water study according to OECD guidelines and GLP with hydrogen peroxide and catalase deficient mice, the predicted NOAEL of sodium percarbonate would be 308 ppm (81 to 115 mg/kg bw/day for males and females, respectively).

Data on the mutagenicity will be similar to those of hydrogen peroxide due to the release of hydrogen peroxide in aqueous media. The available studies on hydrogen peroxide, most of them, in particular the in vivo studies, were performed according to OECD guidelines and GLP, are not in support of significant genotoxicity/mutagenicity under in vivo conditions. Therefore sodium percarbonate is also unlikely to have any in vivo genotoxic potential.

Carcinogenicity studies with animals and sodium percarbonate are not available. The only component that could give rise to some concerns with regard to this endpoint is hydrogen peroxide. A local carcinogenic effect was observed in the duodenum of a catalase-deficient mouse strain administered 0.4 % hydrogen peroxide in drinking water. Although an underlying genotoxic mechanism cannot be excluded, the weight of evidence at this time does not suggest that the carcinogenic properties of hydrogen peroxide should be regarded as practically significant.

Neither an animal study on toxicity to reproduction nor a study on developmental toxicity is available for sodium percarbonate. A developmental toxicity study with sodium carbonate, which was well documented and meets basic scientific principles, revealed no substance related foetotoxic, embryotoxic or teratogenic effects. From the nature of the substance it is to be anticipated that neither sodium percarbonate nor hydrogen peroxide and sodium carbonate will be systemically available under human exposure conditions and are thus unlikely to reach the gonads and the developing embryo or fetus. Therefore the substance is unlikely to have any relevant potential for toxicity to reproduction or developmental toxicity.

**ALKALINE SALTS:**

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

for sodium carbonate:

Oral (rat) LD50: 4090 mg/kg

Skin (rabbit): 500 mg/24h Mild

for potassium carbonate:

Oral (rat) LD50: 1870 mg/kg

for sodium metasilicate:

Oral (rat) LD50: 1153 mg/kg

Skin (human): 250 mg/24h - SEVERE

for trisodium phosphate dodecahydrate

Oral (rat) LD50: 6500 mg/kg

Skin (rabbit): FSHA 3.3 / 8.0

Dermal (rat) LD50: 7940 mg/kg

Eye (rabbit): FSHA CORROSIVE

**Section 12 - ECOLOGICAL INFORMATION**

■ DO NOT discharge into sewer or waterways.

Refer to data for ingredients, which follows:

JASOL D-STAIN:

SODIUM CARBONATE:

SODIUM PERCARBONATE:

■ Metal-containing inorganic substances generally have negligible vapour pressure and are not expected to partition to air. Once released to surface waters and moist soils their fate depends on solubility and dissociation in water. Environmental processes (such as oxidation and the presence of acids or bases) may transform insoluble metals to more soluble ionic forms. Microbiological processes may also transform insoluble metals to more soluble forms. Such ionic species may bind to dissolved ligands or sorb to solid particles in aquatic or aqueous media. A significant proportion of dissolved/ sorbed metals will end up in sediments through the settling of suspended particles. The remaining metal ions can then be taken up by aquatic organisms.

When released to dry soil most metals will exhibit limited mobility and remain in the upper layer; some will leach locally into ground water and/ or surface water ecosystems when soaked by rain or melt ice. Environmental processes may also be important in changing solubilities.

Even though many metals show few toxic effects at physiological pHs, transformation may introduce new or magnified effects.

A metal ion is considered infinitely persistent because it cannot degrade further.

The current state of science does not allow for an unambiguous interpretation of various measures of bioaccumulation.

The counter-ion may also create health and environmental concerns once isolated from the metal. Under normal physiological conditions the counter-ion may be essentially insoluble and may not be bioavailable.

Environmental processes may enhance bioavailability.

■ For hydrogen peroxide:

log Kow : -1.36

Environmental fate:

Hydrogen peroxide is a naturally occurring substance (typical background concentrations < 1 - 30 g/l). Almost all cells with the exception of anaerobic bacteria produce it in their metabolism. Hydrogen peroxide is a reactive substance in the presence of other substances, elements, radiation, materials and can be degraded by micro-organisms or higher organisms.

Air : Hydrogen peroxide may be removed from the atmosphere by photolysis giving rise to hydroxyl radicals, by reaction with hydroxyl radicals, or by heterogenous loss processes such as rain-out. Significantly higher hydrogen peroxide concentrations are found in polluted atmospheres as compared with clean air. These concentrations are believed to arise from photochemically-initiated oxidation of reactive hydrocarbons. Under severe smog conditions, daytime levels of hydrogen peroxide as high as 0.18

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ppm have been reported, but atmospheric night-time levels of 2-5 ppb did not correlate to smog intensity

Soil: No information was found in the secondary sources searched regarding the transformation or persistence of hydrogen peroxide in soil, however, solutions of hydrogen peroxide gradually deteriorate

Water Hydrogen peroxide is a naturally occurring substance. Surface water concentrations of hydrogen peroxide have been found to vary between 51-231 mg/L, increasing both with exposure to sunlight and the presence of dissolved organic matter

Hydrogen peroxide degrades by various mechanisms, including chemical reduction and enzymatic (catalase and peroxidase) decomposition by algae, zooplankton, and bacteria. Microorganisms, especially bacteria, account for the majority of degradation, significantly more than all other chemical and biological mechanisms. The rate at which hydrogen peroxide decomposes in natural water can vary from a few minutes to more than a week, depending on numerous chemical, biological, and physical factors.

Hydrogen peroxide is rapidly degraded in a biological waste water treatment plant. Hydrogen peroxide adsorbs poorly to sediment particles and is rapidly degraded, thus accumulation in the sediment is also not expected

Hydrogen peroxide (log Kow < -1) is an inorganic substance and therefore shows little potential to bioaccumulate.

Ecotoxicity:

Fish LC50 (96 h): catfish 37.4 mg/l

Fish LC50 (24 h): mackerel 89 mg/l; chameleon gobi 155 mg/l

Zebra mussel LC50 (28 h) 30 mg/l; (228 h): 12 mg/l

Ecotoxicity data show that microorganisms (i.e., bacteria, algae) and zooplankton present in aquatic ecosystems are generally less tolerant of hydrogen peroxide exposure than are fish or other vertebrates. Effects of short-term exposures on sensitive bacteria and invertebrates (e.g., *Daphnia pulex*) have been observed at concentrations in the low mg/L (ppm) range, while effects on sensitive algae have been reported at levels less than 1.0 mg/L. Algae are the most sensitive species for hydrogen peroxide. The algal EC50 of hydrogen peroxide was 1.6-5 mg/l, while the NOEC was 0.1 mg/l. In a 21-d continuous exposure study on *Daphnia magna*, the chronic no observable effect concentration (NOEC) for reproduction was 0.63 mg/L and the NOEC for mortality was 1.25 mg/L.

In chronic toxicity studies with invertebrates (zebra mussels) and hydrogen peroxide shows an NOEC of 2 mg/l. The PNEC of hydrogen peroxide is equal to 10 ug/l -

Risk mitigation is needed to ensure that use of hydrogen peroxide will not adversely impact aquatic life. An acute water quality criterion or "benchmark" has been determined. For hydrogen peroxide, the acute benchmark is 0.7 mg/L. This value was calculated using the extensive toxicity database for hydrogen peroxide and procedures in U.S. Environmental Protection Agency guidance for deriving numerical national water quality criteria. The use of hydrogen peroxide in intensive aquaculture in finfish (at up to 100 mg/L for 60 minutes) and finfish eggs (at up to 1,000 mg/L for 15 minutes) is not expected to have a significant impact on the environment.

■ For sodium percarbonate:

Environmental fate:

The water solubility of sodium percarbonate is 140 g/l at 20 °C. Sodium percarbonate rapidly dissolves in water and dissociates into sodium ions, carbonate ions and hydrogen peroxide. Sodium carbonate and hydrogen peroxide are very water soluble and will therefore remain in the water phase. Hydrogen peroxide is a naturally occurring substance (typical background concentrations < 1 - 30 g/l). Almost all cells with the exception of anaerobic bacteria produce it in their metabolism. Hydrogen peroxide is a reactive substance in the presence of other substances, elements, radiation, materials and can be degraded by micro-organisms or higher organisms.

Hydrogen peroxide is rapidly degraded in a biological waste water treatment plant. Hydrogen peroxide adsorbs poorly to sediment particles and is rapidly degraded, thus accumulation in the sediment is also not expected

Ecotoxicity:

A standard guideline study has been performed with a freshwater fish species and sodium percarbonate; this study revealed an acute LC50 value of 71 mg/l for fathead minnow (*Pimephales promelas*). A standard guideline study has been done also with a water flea (*Daphnia pulex*) and in this case an acute EC50 value of 4.9 mg/l was found.

Based on a comparison of the results of acute toxicity tests with sodium carbonate, hydrogen peroxide and sodium percarbonate, the acute toxicity of sodium percarbonate can be explained by the formation of hydrogen peroxide. Chronic toxicity studies with sodium percarbonate are not available. However, the chronic toxicity of sodium percarbonate can be predicted from the chronic toxicity of hydrogen peroxide. A chronic toxicity study with invertebrates (zebra mussels) and hydrogen peroxide revealed a NOEC of 2 mg/l. The PNEC of hydrogen peroxide is equal to 10 ug/l and algae are the most sensitive species for hydrogen peroxide. The algal EC50 of hydrogen peroxide was 1.6-5 mg/l, while the NOEC was 0.1 mg/l. Both sodium carbonate and hydrogen peroxide (log Kow < -1) are inorganic chemicals which do not bioaccumulate.

ALKALINE SALTS:

**Ecotoxicity**

Ingredient	Persistence: Water/Soil	Persistence: Air	Bioaccumulation	Mobility
Jasol D-Stain		No data		
sodium carbonate		No data		
sodium percarbonate		No data		
alkaline salts		No data		

**Section 13 - DISPOSAL CONSIDERATIONS**

- - Containers may still present a chemical hazard/ danger when empty.
  - Return to supplier for reuse/ recycling if possible.
- Otherwise:
- If container can not be cleaned sufficiently well to ensure that residuals do not remain or if the container cannot be used to store the same product, then puncture containers, to prevent re-use, and bury at an authorised landfill.
  - Where possible retain label warnings and MSDS and observe all notices pertaining to the product.
  - Recycle wherever possible.

**JASOL D-STAIN**Hazard Alert Code:  
**HIGH**

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- Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified.
- Dispose of by: Burial in a licenced land-fill or Incineration in a licenced apparatus (after admixture with suitable combustible material)
- Decontaminate empty containers. Observe all label safeguards until containers are cleaned and destroyed.

**Section 14 - TRANSPORTATION INFORMATION**

HAZCHEM: None (ADG6)

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

**Section 15 - REGULATORY INFORMATION****POISONS SCHEDULE**

None

**REGULATIONS**

Regulations for ingredients

**sodium carbonate (CAS: 497-19-8) is found on the following regulatory lists;**

"Australia Hazardous Substances", "Australia High Volume Industrial Chemical List (HVICL)", "Australia Inventory of Chemical Substances (AICS)", "CODEX General Standard for Food Additives (GSFA) - Additives Permitted for Use in Food in General, Unless Otherwise Specified, in Accordance with GMP", "GESAMP/EHS Composite List of Hazard Profiles - Hazard evaluation of substances transported by ships", "IMO IBC Code Chapter 17: Summary of minimum requirements", "International Council of Chemical Associations (ICCA) - High Production Volume List", "OECD Representative List of High Production Volume (HPV) Chemicals"

**sodium percarbonate (CAS: 4452-58-8, 15630-89-4) is found on the following regulatory lists;**

"Australia Inventory of Chemical Substances (AICS)"

**No data for Jasol D-Stain (CW: 4614-60)**

No data for alkaline salts (CAS: , Not avail)

**Section 16 - OTHER INFORMATION****Ingredients with multiple CAS Nos**

Ingredient Name	CAS
sodium percarbonate	4452-58-8, 15630-89-4

■ Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

A list of reference resources used to assist the committee may be found at:

[www.chemwatch.net/references](http://www.chemwatch.net/references).

■ The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

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**NOTES**

This substance should be managed in accordance with the requirements specified in the Cleaning Products (Subsidiary Hazard) Group Standard 2006, HSNO Approval Number HSR002530.