

Datamark Ink V410 D (Video Jet)

Datamark Identification

Chemwatch: **4783-91**
Version No: **2.1.1.1**
Material Safety Data Sheet according to NOHSC and ADG requirements

Chemwatch Hazard Alert Code: **3**

Issue Date: **01/01/2013**
Print Date: **10/07/2014**
Initial Date: **Not Available**
S.Local.AUS.EN

SECTION 1 IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

Product Identifier

Product name	Datamark Ink V410 D (Video Jet)
Chemical Name	Not Applicable
Synonyms	Not Available
Proper shipping name	PRINTING INK, flammable or PRINTING INK RELATED MATERIAL (including printing ink thinning or reducing compound), flammable
Chemical formula	Not Applicable
Other means of identification	Not Available
CAS number	Not Applicable

Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses	Use according to manufacturer's directions. The use of a quantity of material in an unventilated or confined space may result in increased exposure and an irritating atmosphere developing. Before starting consider control of exposure by mechanical ventilation.
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Details of the manufacturer/importer

Registered company name	Datamark Identification
Address	19 Lang Parade QLD 4064 Milton Australia
Telephone	1300 657 633
Fax	+61 7 3271 2751
Website	Not Available
Email	Not Available

Emergency telephone number

Association / Organisation	Not Available
Emergency telephone numbers	0414 373 494
Other emergency telephone numbers	0414 373 494

SECTION 2 HAZARDS IDENTIFICATION

Classification of the substance or mixture

HAZARDOUS SUBSTANCE. DANGEROUS GOODS. According to the Criteria of NOHSC, and the ADG Code.

Poisons Schedule	S5												
Risk Phrases ^[1]	<table border="1"> <tr> <td>R36/37</td> <td>Irritating to eyes and respiratory system.</td> </tr> <tr> <td>R66</td> <td>Repeated exposure may cause skin dryness and cracking.</td> </tr> <tr> <td>R65</td> <td>HARMFUL-May cause lung damage if swallowed.</td> </tr> <tr> <td>R43</td> <td>May cause SENSITISATION by skin contact.</td> </tr> <tr> <td>R11</td> <td>Highly flammable.</td> </tr> <tr> <td>R67</td> <td>Vapours may cause drowsiness and dizziness.</td> </tr> </table>	R36/37	Irritating to eyes and respiratory system.	R66	Repeated exposure may cause skin dryness and cracking.	R65	HARMFUL-May cause lung damage if swallowed.	R43	May cause SENSITISATION by skin contact.	R11	Highly flammable.	R67	Vapours may cause drowsiness and dizziness.
R36/37	Irritating to eyes and respiratory system.												
R66	Repeated exposure may cause skin dryness and cracking.												
R65	HARMFUL-May cause lung damage if swallowed.												
R43	May cause SENSITISATION by skin contact.												
R11	Highly flammable.												
R67	Vapours may cause drowsiness and dizziness.												
Legend:	1. Classified by Chemwatch; 2. Classification drawn from HSIS; 3. Classification drawn from EC Directive 1272/2008 - Annex VI												
GHS Classification ^[1]	Flammable Liquid Category 2, Eye Irrit. 2, Skin Sensitizer Category 1, STOT - SE (Resp. Irr.) Category 3, STOT - SE (Narcosis) Category 3, Aspiration Hazard Category 1												
Legend:	1. Classified by Chemwatch; 2. Classification drawn from HSIS; 3. Classification drawn from EC Directive 1272/2008 - Annex VI												

Label elements

GHS label elements



SIGNAL WORD

DANGER

Hazard statement(s)

H225	Highly flammable liquid and vapour
H319	Causes serious eye irritation
H317	May cause an allergic skin reaction
H335	May cause respiratory irritation
H336	May cause drowsiness or dizziness
H304	May be fatal if swallowed and enters airways
AUH066	Repeated exposure may cause skin dryness and cracking

Supplementary statement(s)

Not Applicable

CLP classification (additional)

Not Applicable

Precautionary statement(s): Prevention

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.

Precautionary statement(s): Response

P301+P310	IF SWALLOWED: Immediately call a POISON CENTER/doctor/physician/first aider
P321	Specific treatment (see advice on this label).
P331	Do NOT induce vomiting.
P370+P378	In case of fire: Use... to extinguish.

Precautionary statement(s): Storage

P403+P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.

Precautionary statement(s): Disposal

P501	Dispose of contents/container to authorised chemical landfill or if organic to high temperature incineration
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Label elements



Relevant risk statements are found in section 2

Indication(s) of danger

F, Xn

SAFETY ADVICE

S09	Keep container in a well ventilated place.
S13	Keep away from food, drink and animal feeding stuffs.
S16	Keep away from sources of ignition. No smoking.
S23	Do not breathe gas/fumes/vapour/spray.
S25	Avoid contact with eyes.
S26	In case of contact with eyes, rinse with plenty of water and contact Doctor or Poisons Information Centre.
S29	Do not empty into drains.
S33	Take precautionary measures against static discharges.
S36	Wear suitable protective clothing.

S37	Wear suitable gloves.
S39	Wear eye/face protection.
S40	To clean the floor and all objects contaminated by this material, use water and detergent.
S41	In case of fire and/or explosion, DO NOT BREATHE FUMES.
S43	In case of fire use...
S46	If swallowed, seek medical advice immediately and show this container or label.
S51	Use only in well ventilated areas.
S56	Dispose of this material and its container at hazardous or special waste collection point.
S64	If swallowed, rinse mouth with water (only if the person is conscious).

Other hazards

	Inhalation, skin contact and/or ingestion may produce health damage*.
	Limited evidence of a carcinogenic effect*.
	Cumulative effects may result following exposure*.
	May produce skin discomfort*.

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS**Substances**

See section below for composition of Mixtures

Mixtures

CAS No	%[weight]	Name
78-93-3	55-<65	methyl ethyl ketone
64-17-5	1-<3	ethanol
2530-83-8	1-<3	gamma-glycidoxypropyltrimethoxysilane
141-86-6	1-<3	2,6-diaminopyridine
67-63-0	1-<3	isopropanol

SECTION 4 FIRST AID MEASURES**Description of first aid measures**

Eye Contact	<p>If this product comes in contact with the eyes:</p> <ul style="list-style-type: none"> ▶ 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. ▶ Seek medical attention without delay; if pain persists or recurs seek medical attention. ▶ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.
Skin Contact	<p>If skin contact occurs:</p> <ul style="list-style-type: none"> ▶ 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.
Inhalation	<ul style="list-style-type: none"> ▶ 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.
Ingestion	<ul style="list-style-type: none"> ▶ 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.

Indication of any immediate medical attention and special treatment needed

	<p>Any material aspirated during vomiting may produce lung injury. Therefore emesis should not be induced mechanically or pharmacologically. Mechanical means should be used if it is considered necessary to evacuate the stomach contents; these include gastric lavage after endotracheal intubation. If spontaneous vomiting has occurred after ingestion, the patient should be monitored for difficult breathing, as adverse effects of aspiration into the lungs may be delayed up to 48 hours.</p> <p>for simple ketones:</p> <p>-----</p> <p>BASIC TREATMENT</p> <p>-----</p> <ul style="list-style-type: none"> ▶ Establish a patent airway with suction where necessary.
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- ▶ Watch for signs of respiratory insufficiency and assist ventilation as necessary.
- ▶ Administer oxygen by non-rebreather mask at 10 to 15 l/min.
- ▶ Monitor and treat, where necessary, for pulmonary oedema .
- ▶ Monitor and treat, where necessary, for shock.
- ▶ **DO NOT use emetics.** Where ingestion is suspected rinse mouth and give up to 200 ml water (5mL/kg recommended) for dilution where patient is able to swallow, has a strong gag reflex and does not drool.
- ▶ Give activated charcoal.

ADVANCED TREATMENT

- ▶ Consider orotracheal or nasotracheal intubation for airway control in unconscious patient or where respiratory arrest has occurred.
- ▶ Consider intubation at first sign of upper airway obstruction resulting from oedema.
- ▶ Positive-pressure ventilation using a bag-valve mask might be of use.
- ▶ Monitor and treat, where necessary, for arrhythmias.
- ▶ Start an IV D5W TKO. If signs of hypovolaemia are present use lactated Ringers solution. Fluid overload might create complications.
- ▶ Drug therapy should be considered for pulmonary oedema.
- ▶ Hypotension with signs of hypovolaemia requires the cautious administration of fluids. Fluid overload might create complications.
- ▶ Treat seizures with diazepam.
- ▶ Proparacaine hydrochloride should be used to assist eye irrigation.

EMERGENCY DEPARTMENT

- ▶ Laboratory analysis of complete blood count, serum electrolytes, BUN, creatinine, glucose, urinalysis, baseline for serum aminotransferases (ALT and AST), calcium, phosphorus and magnesium, may assist in establishing a treatment regime. Other useful analyses include anion and osmolar gaps, arterial blood gases (ABGs), chest radiographs and electrocardiograph.
- ▶ Positive end-expiratory pressure (PEEP)-assisted ventilation may be required for acute parenchymal injury or adult respiratory distress syndrome.
- ▶ Consult a toxicologist as necessary.

BRONSTEIN, A.C. and CURRANCE, P.L.

EMERGENCY CARE FOR HAZARDOUS MATERIALS EXPOSURE: 2nd Ed. 1994

SECTION 5 FIREFIGHTING MEASURES

Extinguishing media

- ▶ Alcohol stable foam.
- ▶ Dry chemical powder.
- ▶ BCF (where regulations permit).
- ▶ Carbon dioxide.

Special hazards arising from the substrate or mixture

Fire Incompatibility

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

Advice for firefighters

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 in the event of a fire.
- ▶ Prevent, by any means available, spillage from entering drains or water course.

Fire/Explosion Hazard

- ▶ Liquid and vapour are highly flammable.
- ▶ Severe fire hazard when exposed to heat, flame and/or oxidisers.
- ▶ Vapour may travel a considerable distance to source of ignition.
- ▶ Heating may cause expansion or decomposition leading to violent rupture of containers.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and 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 with the substance, by using protective equipment.

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.

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

SECTION 7 HANDLING AND STORAGE

Precautions for safe handling

Safe handling

- ▶ Containers, even those that have been emptied, may contain explosive vapours.
 - ▶ Do NOT cut, drill, grind, weld or perform similar operations on or near containers.
- Contains low boiling substance:**
 Storage in sealed containers may result in pressure buildup causing violent rupture of containers not rated appropriately.
- ▶ Check for bulging containers.

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Other information

- ▶ Store in original containers in approved flame-proof area.
- ▶ No smoking, naked lights, heat or ignition sources.
- ▶ **DO NOT store in pits, depressions, basements or areas where vapours may be trapped.**
- ▶ Keep containers securely sealed.

Conditions for safe storage, including any incompatibilities

Suitable 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.
- ▶ For low viscosity materials (i) : Drums and jerry cans must be of the non-removable head type.

Storage incompatibility

- ▶ Avoid reaction with oxidising agents



- X — Must not be stored together
- O — May be stored together with specific preventions
- + — May be stored together

PACKAGE MATERIAL INCOMPATIBILITIES

Not Available

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

OCCUPATIONAL EXPOSURE LIMITS (OEL)

INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
Australia Exposure Standards	methyl ethyl ketone	Methyl ethyl ketone (MEK)	445 mg/m3 / 150 ppm	890 mg/m3 / 300 ppm	Not Available	Not Available
Australia Exposure Standards	ethanol	Ethyl alcohol	1880 mg/m3 / 1000 ppm	Not Available	Not Available	Not Available
Australia Exposure Standards	isopropanol	Isopropyl alcohol	983 mg/m3 / 400 ppm	1230 mg/m3 / 500 ppm	Not Available	Not Available

EMERGENCY LIMITS

Ingredient	TEEL-0	TEEL-1	TEEL-2	TEEL-3
methyl ethyl ketone	200 ppm	200 ppm	2700 ppm	4000 ppm
ethanol	1000 ppm	3000 ppm	3300 ppm	3300 ppm
gamma-glycidoxypropyltrimethoxysilane	150 ppm	400 ppm	500 ppm	500 ppm
2,6-diaminopyridine	0.4 ppm	1.25 ppm	7.5 ppm	40 ppm
isopropanol	400 ppm	400 ppm	2000 ppm	2000 ppm

Ingredient	Original IDLH	Revised IDLH
methyl ethyl ketone	3,000 ppm	3,000 [Unch] ppm
ethanol	15,000 ppm	3,300 [LEL] ppm
gamma-glycidoxypropyltrimethoxysilane	Not Available	Not Available
2,6-diaminopyridine	Not Available	Not Available
isopropanol	12,000 ppm	2,000 [LEL] ppm

Exposure controls

Appropriate engineering controls

Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection. The basic types of engineering controls are:
 Process controls which involve changing the way a job activity or process is done to reduce the risk.
 Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment.

Personal protection



Eye and face protection

- ▶ 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 lenses or restrictions on use, should be created for each workplace or task.

Skin protection

See Hand protection below

Hands/feet protection	<ul style="list-style-type: none"> ▶ Wear chemical protective gloves, e.g. PVC. ▶ Wear safety footwear or safety gumboots, e.g. Rubber NOTE: <ul style="list-style-type: none"> ▶ 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.
Body protection	See Other protection below
Other protection	<ul style="list-style-type: none"> ▶ Overalls. ▶ PVC Apron. ▶ PVC protective suit may be required if exposure severe. ▶ Eyewash unit.
Thermal hazards	Not Available

Recommended material(s)**GLOVE SELECTION INDEX**

Glove selection is based on a modified presentation of the:

"Forsberg Clothing Performance Index".

The effect(s) of the following substance(s) are taken into account in the **computer-generated** selection:

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Material	CPI
PE/EVAL/PE	A

* CPI - Chemwatch Performance Index

A: Best Selection

B: Satisfactory; may degrade after 4 hours continuous immersion

C: Poor to Dangerous Choice for other than short term immersion

NOTE: As a series of factors will influence the actual performance of the glove, a final selection must be based on detailed observation. -

* Where the glove is to be used on a short term, casual or infrequent basis, factors such as "feel" or convenience (e.g. disposability), may dictate a choice of gloves which might otherwise be unsuitable following long-term or frequent use. A qualified practitioner should be consulted.

Respiratory protection

Type A-P Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)

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.

Required minimum protection factor	Maximum gas/vapour concentration present in air p.p.m. (by volume)	Half-face Respirator	Full-Face Respirator
up to 10	1000	A-AUS / Class 1 P2	-
up to 50	1000	-	A-AUS / Class 1 P2
up to 50	5000	Airline *	-
up to 100	5000	-	A-2 P2
up to 100	10000	-	A-3 P2
100+			Airline**

* - Continuous Flow ** - Continuous-flow or positive pressure demand

A(All classes) = Organic vapours, B AUS or B1 = Acid gasses, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO₂), G = Agricultural chemicals, K = Ammonia(NH₃), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES**Information on basic physical and chemical properties**

Appearance	Black highly flammable liquid with a solvent odour.		
Physical state	Liquid	Relative density (Water = 1)	0.9
Odour	Not Available	Partition coefficient n-octanol / water	Not Available
Odour threshold	Not Available	Auto-ignition temperature (°C)	250-472
pH (as supplied)	Not Available	Decomposition temperature	Not Available
Melting point / freezing point (°C)	Not Available	Viscosity (cSt)	Not Available
Initial boiling point and boiling range (°C)	77	Molecular weight (g/mol)	Not Applicable
Flash point (°C)	-6	Taste	Not Available
Evaporation rate	6.7 BuAC = 1	Explosive properties	Not Available
Flammability	Flammable.	Oxidising properties	Not Available
Upper Explosive Limit (%)	19.0	Surface Tension (dyn/cm or mN/m)	Not Available
Lower Explosive Limit (%)	1.8	Volatile Component (%vol)	67 (VOC = 67%)
Vapour pressure (kPa)	10 @20C	Gas group	Not Available
Solubility in water (g/L)	Not Available	pH as a solution(1%)	Not Available
Vapour density (Air = 1)	>1.6	VOC g/L	Not Available

SECTION 10 STABILITY AND REACTIVITY

Reactivity	See section 7
Chemical stability	<ul style="list-style-type: none"> ▶ Unstable in the presence of incompatible materials. ▶ Product is considered stable. ▶ Hazardous polymerisation will not occur.
Possibility of hazardous reactions	See section 7

Conditions to avoid	See section 7
Incompatible materials	See section 7
Hazardous decomposition products	See section 5

SECTION 11 TOXICOLOGICAL INFORMATION

Information on toxicological effects

Inhaled	Evidence shows, or practical experience predicts, that the material produces irritation of the respiratory system, in a substantial number of individuals, following inhalation. In contrast to most organs, the lung is able to respond to a chemical insult by first removing or neutralising the irritant and then repairing the damage. The repair process, which initially evolved to protect mammalian lungs from foreign matter and antigens, may however, produce further lung damage resulting in the impairment of gas exchange, the primary function of the lungs. Respiratory tract irritation often results in an inflammatory response involving the recruitment and activation of many cell types, mainly derived from the vascular system.
Ingestion	Swallowing of the liquid may cause aspiration of vomit into the lungs with the risk of haemorrhaging, pulmonary oedema, progressing to chemical pneumonitis; serious consequences may result. Signs and symptoms of chemical (aspiration) pneumonitis may include coughing, gasping, choking, burning of the mouth, difficult breathing, and bluish coloured skin (cyanosis). Accidental ingestion of the material may be damaging to the health of the individual.
Skin Contact	Repeated exposure may cause skin cracking, flaking or drying following normal handling and use. Skin contact with the material may damage the health of the individual; systemic effects may result following absorption. The material may produce moderate skin irritation; limited evidence or practical experience suggests, that the material either: <ul style="list-style-type: none"> ▶ produces moderate inflammation of the skin in a substantial number of individuals following direct contact and/or ▶ produces significant, but moderate, inflammation when applied to the healthy intact skin of animals (for up to four hours), such inflammation being present twenty-four hours or more after the end of the exposure period. Skin irritation may also be present after prolonged or repeated exposure; this may result in a form of contact dermatitis (nonallergic).
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 vapour when concentrated has pronounced eye irritation effects and this gives some warning of high vapour concentrations. If eye irritation occurs seek to reduce exposure with available control measures, or evacuate area.
Chronic	Long-term exposure to respiratory irritants may result in disease of the airways involving difficult breathing and related systemic problems. Practical experience shows that skin contact with the material is capable either of inducing a sensitisation reaction in a substantial number of individuals, and/or of producing a positive response in experimental animals. Prolonged or repeated skin contact may cause drying with cracking, irritation and possible dermatitis following. On the basis, primarily, of animal experiments, concern has been expressed by at least one classification body that the material may produce carcinogenic or mutagenic effects; in respect of the available information, however, there presently exists inadequate data for making a satisfactory assessment.

	TOXICITY	IRRITATION
Datamark Ink V410 D (Video Jet)	Not Available	Not Available
methyl ethyl ketone	Dermal (rabbit) LD50: 20000 mg/kg Dermal (rabbit) LD50: 6480 mg/kg Inhalation (rat) LC50: 50100 mg/m ³ /8 hr Inhalation (rat) LD50: 23500 mg/m ³ /8 hr Oral (rat) LD50: 2737 mg/kg Not Available	- mild Eye (human): 350 ppm -irritant Eye (rabbit): 80 mg - irritant Skin (rabbit): 402 mg/24 hr - mild Skin (rabbit): 13.78mg/24 hr open Not Available
ethanol	Inhalation (rat) LC50: 20,000 ppm/10h Inhalation (rat) LC50: 64000 ppm/4h Oral (rat) LD50: 7060 mg/kg Not Available	Eye (rabbit): 500 mg SEVERE Eye (rabbit): 100mg/24hr-moderate Skin (rabbit): 20 mg/24hr-moderate Skin (rabbit): 400 mg (open)-mild Not Available
gamma-glycidoxypropyltrimethoxysilane	Dermal (Rabbit) LD50: 3970 uL/kg Oral (Rat) LD50: 22600 uL/kg Not Available	Not Available
2,6-diaminopyridine	Intraperitoneal (mouse) LD50: 100 mg/kg Intravenous (mouse) LD50: 56 mg/kg	

	Not Available	Not Available
isopropanol	TOXICITY	IRRITATION
	Dermal (rabbit) LD50: 12800 mg/kg	Eye (rabbit): 10 mg - moderate
	Inhalation (Mouse) LC50: 53000 mg/m ³ /4h	Eye (rabbit): 100 mg - SEVERE
	Inhalation (Rat) LC50: 72600 mg/m ³ /4h	Eye (rabbit): 100mg/24hr-moderate
	Intraperitoneal (Guinea pig) LD50: 2560 mg/kg	Skin (rabbit): 500 mg - mild
	Intraperitoneal (Mouse) LD50: 4477 mg/kg	
	Intraperitoneal (Rabbit) LD50: 667 mg/kg	
	Intraperitoneal (Rat) LD50: 2735 mg/kg	
	Intravenous (Mouse) LD50: 1509 mg/kg	
	Intravenous (Rabbit) LD50: 1184 mg/kg	
	Intravenous (Rat) LD50: 1088 mg/kg	
	Oral (Mouse) LD50: 3600 mg/kg	
	Oral (Rabbit) LD50: 6410 mg/kg	
	Oral (Rat) LD50: 5000 mg/kg	
	Oral (rat) LD50: 5045 mg/kg	
	Not Available	Not Available

* Value obtained from manufacturer's msds
unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances

ETHANOL	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 the epidermis. Histologically there may be intercellular oedema of the spongy layer (spongiosis) and intracellular oedema of the epidermis.
GAMMA-GLYCIDOXYPROPYLTRIMETHOXYSILANE	For alkoxysilanes: Low molecular weight alkoxysilanes (including alkyl orthosilicates) are a known concern for lung toxicity, due to inhalation of vapours or aerosols causing irreversible lung damage at low doses. Alkoxysilane groups that rapidly hydrolyse when in contact with water, result in metabolites that may only cause mild skin irritation. Although there appears to be signs of irritation under different test conditions, based on the available information, the alkoxysilanes cannot be readily classified as a skin irritant. The trimethoxysilane group of chemicals have previously been associated with occupational eye irritation in exposed workers who experienced severe inflammation of the cornea .
ISOPROPANOL	For isopropanol (IPA): Acute toxicity: Isopropanol has a low order of acute toxicity. It is irritating to the eyes, but not to the skin. Very high vapor concentrations are irritating to the eyes, nose, and throat, and prolonged exposure may produce central nervous system depression and narcosis. Human volunteers reported that exposure to 400 ppm isopropanol vapors for 3 to 5 min.
Datamark Ink V410 D (Video Jet), 2,6-DIAMINOPYRIDINE	The following information refers to contact allergens as a group and may not be specific to this product. Contact allergies quickly manifest themselves as contact eczema, more rarely as urticaria or Quincke's oedema. The pathogenesis of contact eczema involves a cell-mediated (T lymphocytes) immune reaction of the delayed type. Other allergic skin reactions, e.g. contact urticaria, involve antibody-mediated immune reactions.

Acute Toxicity	☹	Carcinogenicity	☹
Skin Irritation/Corrosion	☹	Reproductivity	☹
Serious Eye Damage/Irritation	✔	STOT - Single Exposure	✔
Respiratory or Skin sensitisation	✔	STOT - Repeated Exposure	☹
Mutagenicity	☹	Aspiration Hazard	✔

Legend: ✔ - Data required to make classification available
✘ - Data available but does not fill the criteria for classification
☹ - Data Not Available to make classification

CMR STATUS

Not Applicable

SECTION 12 ECOLOGICAL INFORMATION**Toxicity**

Significant environmental findings are limited. Oxiranes (including glycidyl ethers and alkyl oxides, and epoxides) exhibit common characteristics with respect to environmental fate and ecotoxicology. One such oxirane is ethyloxirane and data presented here may be taken as representative for 1,2-butylene oxide (ethyloxirane):

Environmental fate: Ethyloxirane is highly soluble in water and has a very low soil-adsorption coefficient, which suggests that if released to water, adsorption of ethyloxirane to sediment and suspended solids is not expected.

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
Not Available	Not Available	Not Available

Bioaccumulative potential

Ingredient	Bioaccumulation
Not Available	Not Available

Mobility in soil

Ingredient	Mobility
Not Available	Not Available


SECTION 13 DISPOSAL CONSIDERATIONS

Waste treatment methods

Product / Packaging disposal	<ul style="list-style-type: none"> ▶ Containers may still present a chemical hazard/ danger when empty. ▶ Return to supplier for reuse/ recycling if possible. Otherwise: <ul style="list-style-type: none"> ▶ 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.
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SECTION 14 TRANSPORT INFORMATION

Labels Required

	
Marine Pollutant	NO
HAZCHEM	+3YE

Land transport (ADG)

UN number	1210
Packing group	II
UN proper shipping name	PRINTING INK, flammable or PRINTING INK RELATED MATERIAL (including printing ink thinning or reducing compound), flammable
Environmental hazard	No relevant data
Transport hazard class(es)	Class : 3 Subrisk : Not Applicable
Special precautions for user	Special provisions : 163 * Limited quantity : 5 L

Air transport (ICAO-IATA / DGR)

UN number	1210
Packing group	II
UN proper shipping name	Printing ink flammable; Printing ink related material (including printing ink thinning or reducing compound), flammable
Environmental hazard	No relevant data
Transport hazard class(es)	ICAO/IATA Class : 3 ICAO / IATA Subrisk : Not Applicable ERG Code : 3L
Special precautions for user	Special provisions : A3A72 Cargo Only Packing Instructions : 364 Cargo Only Maximum Qty / Pack : 60 L

Passenger and Cargo Packing Instructions	353
Passenger and Cargo Maximum Qty / Pack	5 L
Passenger and Cargo Limited Quantity Packing Instructions	Y341
Passenger and Cargo Limited Maximum Qty / Pack	1 L

Sea transport (IMDG-Code / GGVSee)

UN number	1210
Packing group	II
UN proper shipping name	PRINTING INK flammable or PRINTING INK RELATED MATERIAL (including printing ink thinning or reducing compound), flammable
Environmental hazard	No relevant data
Transport hazard class(es)	IMDG Class : 3 IMDG Subrisk : Not Applicable
Special precautions for user	EMS Number : F-E , S-D Special provisions : 163 Limited Quantities : 5 L

Transport in bulk according to Annex II of MARPOL 73 / 78 and the IBC code

Source	Ingredient	Pollution Category
IMO MARPOL 73/78 (Annex II) - List of Noxious Liquid Substances Carried in Bulk	methyl ethyl ketone	Z

SECTION 15 REGULATORY INFORMATION**Safety, health and environmental regulations / legislation specific for the substance or mixture**

methyl ethyl ketone(78-93-3) is found on the following regulatory lists	"Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 5","Australia Illicit Drug Reagents/Essential Chemicals - Category III","IOFI Global Reference List of Chemically Defined Substances","IMO MARPOL 73/78 (Annex II) - List of Noxious Liquid Substances Carried in Bulk","International Maritime Dangerous Goods Requirements (IMDG Code)","Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Appendix F (Part 3)","Australia Customs (Prohibited Exports) Regulations 1958 - Schedule 9 Precursor substances - Part 2","United Nations Convention Against Illicit Traffic in Narcotic Drugs and Psychotropic Substances - Table II","International Maritime Dangerous Goods Requirements (IMDG Code) - Substance Index","Australia Exposure Standards","Australia FAISD Handbook - First Aid Instructions, Warning Statements, and General Safety Precautions","FisherTransport Information","Australia Dangerous Goods Code (ADG Code) - List of Emergency Action Codes","United Nations Recommendations on the Transport of Dangerous Goods Model Regulations (English)","OECD List of High Production Volume (HPV) Chemicals","Joint FAO/WHO Expert Committee on Food Additives (JECFA) - Specifications for Flavourings","OSPAR National List of Candidates for Substitution - Norway","Australia Inventory of Chemical Substances (AICS)","Belgium Federal Public Service Mobility and Transport, Regulations concerning the International Carriage of Dangerous Goods by Rail - Table A: Dangerous Goods List - RID 2013 (Dutch)","Australia National Pollutant Inventory","OECD Existing Chemicals Database","Sigma-AldrichTransport Information","Australia High Volume Industrial Chemical List (HVICL)","United Nations Recommendations on the Transport of Dangerous Goods Model Regulations (Spanish)","Australia Dangerous Goods Code (ADG Code) - Dangerous Goods List","Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Appendix E (Part 2)","GESAMP/EHS Composite List - GESAMP Hazard Profiles","International Air Transport Association (IATA) Dangerous Goods Regulations","Australia Hazardous Substances Information System - Consolidated Lists","International Fragrance Association (IFRA) Survey: Transparency List","IMO IBC Code Chapter 17: Summary of minimum requirements","United Nations List of Precursors and Chemicals Frequently used in the Illicit Manufacture of Narcotic Drugs and Psychotropic Substances Under International Control (Red List) - Table II"
ethanol(64-17-5) is found on the following regulatory lists	"IOFI Global Reference List of Chemically Defined Substances","International Council of Chemical Associations (ICCA) - High Production Volume List","International Maritime Dangerous Goods Requirements (IMDG Code)","World Anti-Doping Agency - The 2009 Prohibited List World Anti-Doping Code - Substances Prohibited in Particular Sports (French)","World Anti-Doping Agency - The 2009 Prohibited List World Anti-Doping Code - Substances Prohibited in Particular Sports (Korean)","International Maritime Dangerous Goods Requirements (IMDG Code) - Substance Index","Australia Exposure Standards","IMO MARPOL 73/78 (Annex II) - List of Other Liquid Substances","Australia FAISD Handbook - First Aid Instructions, Warning Statements, and General Safety Precautions","FisherTransport Information","IMO Provisional Categorization of Liquid Substances - List 2: Pollutant only mixtures containing at least 99% by weight of components already assessed by IMO","Australia Dangerous Goods Code (ADG Code) - List of Emergency Action Codes","United Nations Recommendations on the Transport of Dangerous Goods Model Regulations (English)","OECD List of High Production Volume (HPV) Chemicals","Joint FAO/WHO Expert Committee on Food Additives (JECFA) - Specifications for Flavourings","OSPAR National List of Candidates for Substitution - Norway","Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Appendix B (Part 3)","WHO Model List of Essential Medicines - Adults","Australia Inventory of Chemical Substances (AICS)","Belgium Federal Public Service Mobility and Transport, Regulations concerning the International Carriage of Dangerous Goods by Rail - Table A: Dangerous Goods List - RID 2013 (Dutch)","IMO IBC Code Chapter 18: List of products to which the Code does not apply","UNECE - Kiev Protocol on Pollutant Release and Transfer Registers - Annex II","World Anti-Doping Agency - The 2014 Prohibited List World Anti-Doping Code - Substances Prohibited in Particular Sports","Australia National Pollutant Inventory","World Anti-Doping Agency - The 2009 Prohibited List World Anti-Doping Code - Substances Prohibited in Competition (German)","OECD Existing Chemicals Database","Sigma-AldrichTransport Information","Australia High Volume Industrial Chemical List (HVICL)","United Nations Recommendations on the Transport of Dangerous Goods Model Regulations (Spanish)","Australia Dangerous Goods Code (ADG Code) - Dangerous Goods List","GESAMP/EHS Composite List - GESAMP Hazard Profiles","FEMA Generally Recognized as Safe (GRAS) Flavoring Substances 23 - Examples of FEMA GRAS Substances with Non-Flavor Functions","International Air Transport Association (IATA) Dangerous Goods Regulations","Australia Hazardous Substances Information System - Consolidated Lists","International Fragrance Association (IFRA) Survey: Transparency List","IMO IBC Code Chapter 17: Summary of minimum requirements","Acros Transport Information"
gamma-glycidioxypropyltrimethoxysilane(2530-83-8) is found on the following regulatory lists	"Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 5","International Council of Chemical Associations (ICCA) - High Production Volume List","IMO MARPOL 73/78 (Annex II) - List of Noxious Liquid Substances Carried in Bulk","Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Appendix F (Part 3)","Australia Exposure

	Standards", "Australia - Tasmania - Work Health and Safety Regulations 2012 - Restricted hazardous chemicals", "Australia - Northern Territories Work Health and Safety National Uniform Legislation Regulations- Restricted hazardous chemicals", "FisherTransport Information", "IMO MARPOL 73/78 (Annex II) - List of Other Liquid Substances", "Australia FAISD Handbook - First Aid Instructions, Warning Statements, and General Safety Precautions", "United Nations Consolidated List of Products Whose Consumption and/or Sale Have Been Banned, Withdrawn, Severely Restricted or Not Approved by Governments", "Australia - South Australia - Work Health and Safety Regulations 2012 - Restricted hazardous chemicals", "OECD List of High Production Volume (HPV) Chemicals", "Australia - Queensland Work Health and Safety Regulation - Restricted hazardous chemicals", "Australia Inventory of Chemical Substances (AICS)", "Australia - New South Wales - Work Health and Safety Regulation 2011 Restricted hazardous chemicals", "Australia National Pollutant Inventory", "OECD Existing Chemicals Database", "Sigma-AldrichTransport Information", "Australia High Volume Industrial Chemical List (HVICL)", "Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Appendix E (Part 2)", "GESAMP/EHS Composite List - GESAMP Hazard Profiles", "Australia Hazardous Substances Information System - Consolidated Lists", "Australia Work Health and Safety Regulations 2011 - Restricted hazardous chemicals", "Australia - New South Wales Hazardous Substances Prohibited for Specific Uses", "IMO IBC Code Chapter 17: Summary of minimum requirements", "Acros Transport Information", "Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 6"
2,6-diaminopyridine(141-86-6) is found on the following regulatory lists	"International Maritime Dangerous Goods Requirements (IMDG Code)", "International Maritime Dangerous Goods Requirements (IMDG Code) - Substance Index", "Australia Dangerous Goods Code (ADG Code) - List of Emergency Action Codes", "United Nations Recommendations on the Transport of Dangerous Goods Model Regulations (English)", "Australia Inventory of Chemical Substances (AICS)", "Belgium Federal Public Service Mobility and Transport, Regulations concerning the International Carriage of Dangerous Goods by Rail - Table A: Dangerous Goods List - RID 2013 (Dutch)", "Australia National Pollutant Inventory", "Sigma-AldrichTransport Information", "United Nations Recommendations on the Transport of Dangerous Goods Model Regulations (Spanish)", "Australia Dangerous Goods Code (ADG Code) - Dangerous Goods List", "International Air Transport Association (IATA) Dangerous Goods Regulations", "Acros Transport Information"
isopropanol(67-63-0) is found on the following regulatory lists	"IOFI Global Reference List of Chemically Defined Substances", "International Maritime Dangerous Goods Requirements (IMDG Code)", "International Maritime Dangerous Goods Requirements (IMDG Code) - Substance Index", "Australia Exposure Standards", "FisherTransport Information", "IMO MARPOL 73/78 (Annex II) - List of Other Liquid Substances", "Australia Dangerous Goods Code (ADG Code) - List of Emergency Action Codes", "IMO Provisional Categorization of Liquid Substances - List 2: Pollutant only mixtures containing at least 99% by weight of components already assessed by IMO", "United Nations Recommendations on the Transport of Dangerous Goods Model Regulations (English)", "OECD List of High Production Volume (HPV) Chemicals", "Joint FAO/WHO Expert Committee on Food Additives (JECFA) - Specifications for Flavourings", "OSPAR National List of Candidates for Substitution - Norway", "International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs", "Australia Inventory of Chemical Substances (AICS)", "Belgium Federal Public Service Mobility and Transport, Regulations concerning the International Carriage of Dangerous Goods by Rail - Table A: Dangerous Goods List - RID 2013 (Dutch)", "IMO IBC Code Chapter 18: List of products to which the Code does not apply", "Australia National Pollutant Inventory", "OECD Existing Chemicals Database", "Sigma-AldrichTransport Information", "Australia High Volume Industrial Chemical List (HVICL)", "United Nations Recommendations on the Transport of Dangerous Goods Model Regulations (Spanish)", "Australia Dangerous Goods Code (ADG Code) - Dangerous Goods List", "GESAMP/EHS Composite List - GESAMP Hazard Profiles", "International Air Transport Association (IATA) Dangerous Goods Regulations", "Australia Hazardous Substances Information System - Consolidated Lists", "International Fragrance Association (IFRA) Survey: Transparency List", "IMO IBC Code Chapter 17: Summary of minimum requirements", "Acros Transport Information"

SECTION 16 OTHER INFORMATION

Other information

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

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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