ULTRACOLOR FROZEN FOOD INK - BLACK

Chemwatch Independent Material Safety Data Sheet

Issue Date: 15-Sep-2009

A317LP

CHEMWATCH 47161

Version No:2.0

Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME

ULTRACOLOR 1030 Z165 BLACK FROZEN FOOD INK

PROPER SHIPPING NAME

FLAMMABLE LIQUID, N.O.S.(contains ethanol)

PRODUCT USE

Stamping ink.

SUPPLIER

Company: Zeus Chemical Products Pty Ltd
Address:
3 Anderson Place
South Windsor
NSW, 2756
Australia
Telephone: +61 2 4577 4866
Fax: +61 2 4577 6919

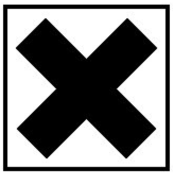
Section 2 - HAZARDS IDENTIFICATION

STATEMENT OF HAZARDOUS NATURE

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

CHEMWATCH HAZARD RATINGS

SCALE: Min/Nil=0 Low=1 Moderate=2 High=3 Extreme=4



RISK	SAFETY
â– Highly flammable.	â€¢ Keep away from sources of ignition. No smoking.
â– Irritating to eyes and respiratory system.	â€¢ Do not breathe gas/fumes/vapour/spray.
â– Limited evidence of a carcinogenic effect.	â€¢ Avoid contact with skin.
â– Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.	â€¢ Avoid contact with eyes.
â– Vapours may cause drowsiness and dizziness.	â€¢ Wear suitable protective clothing.
â– Inhalation, skin contact and/or ingestion may produce health damage*.	â€¢ Wear suitable gloves.
â– Cumulative effects may result following exposure*.	â€¢ Wear eye/face protection.
â– Possible skin sensitiser*.	â€¢ Use only in well ventilated areas.
* (limited evidence).	â€¢ Keep container in a well ventilated place.
	â€¢ Do not empty into drains.
	â€¢ To clean the floor and all objects contaminated by this material, use water.
	â€¢ Keep container tightly closed.
	â€¢ Keep away from food, drink and animal feeding stuffs.
	â€¢ In case of contact with eyes, rinse with plenty of water and contact Doctor or Poisons Information Centre.
	â€¢ If swallowed, IMMEDIATELY contact Doctor or Poisons Information Centre. (show this container or label).
	â€¢ This material and its container must be disposed of as hazardous waste.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
ethanol	64-17-5	30-60
propylene glycol monoethyl ether	52125-53-8	10-30
rosin modified phenolic condensate resin	54386-15-1	10-30
C.I. Basic Yellow 2	2465-27-2	1-10
C.I. Basic Red 1	989-38-8	1-10
C.I. Basic Blue 26, chloride	2580-56-5	1-10
aminopolyamide		1-10

NOTE: Manufacturer has supplied full ingredient

information to allow CHEMWATCH assesment.

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

â– 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

â– 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

â– Followed acute or short term repeated exposures to ethylene glycol monoalkyl ethers and their acetates:
· Hepatic metabolism produces ethylene glycol as a metabolite.
· Clinical presentation, following severe intoxication, resembles that of ethylene glycol exposures.
· Monitoring the urinary excretion of the alkoxyacetic acid metabolites may be a useful indication of exposure. [Ellenhorn and Barceloux: Medical Toxicology].
For acute or short term repeated exposures to ethylene glycol:
· Early treatment of ingestion is important. Ensure emesis is satisfactory.
· Test and correct for metabolic acidosis and hypocalcaemia.
· Apply sustained diuresis when possible with hypertonic mannitol.
· Evaluate renal status and begin haemodialysis if indicated. [I.L.O]
· Rapid absorption is an indication that emesis or lavage is effective only in the first few hours. Cathartics and charcoal are generally not effective.
· Correct acidosis, fluid/electrolyte balance and respiratory depression in the usual manner. Systemic acidosis (below 7.2) can be treated with intravenous sodium
bicarbonate solution.
· Ethanol therapy prolongs the half- life of ethylene glycol and reduces the formation of toxic metabolites.
· Pyridoxine and thiamine are cofactors for ethylene glycol metabolism and should be given (50 to 100 mg respectively) intramuscularly, four times per day for 2

days.
· Magnesium is also a cofactor and should be replenished. The status of 4- methylpyrazole, in the treatment regime, is still uncertain. For clearance of the material
and its metabolites, haemodialysis is much superior to peritoneal dialysis. [Ellenhorn and Barceloux: Medical Toxicology]
It has been suggested that there is a need for establishing a new biological exposure limit before a workshift that is clearly below 100 mmol ethoxy- acetic acids
per mole creatinine in morning urine of people occupationally exposed to ethylene glycol ethers. This arises from the finding that an increase in urinary stones may
be associated with such exposures.
Laitinen J., et al: Occupational & Environmental Medicine 1996; 53, 595- 600.

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.
When any large container (including road and rail tankers) is involved in a fire,
consider evacuation by 500 metres in all directions.

FIRE/EXPLOSION HAZARD

· Liquid and vapour are highly flammable.
· Severe fire hazard when exposed to heat, flame and/or oxidisers.
· Vapour forms an explosive mixture with air.
· Severe explosion hazard, in the form of vapour, when exposed to flame or spark.
· Vapour may travel a considerable distance to source of ignition.
· Heating may cause expansion / decomposition with violent rupture of containers.
· On combustion, may emit toxic fumes of carbon monoxide (CO).
Other combustion products include: carbon dioxide (CO_2) and nitrogen oxides (NO_x).

FIRE INCOMPATIBILITY

â– Avoid reaction with oxidisers, peroxides, strong acids, acid chlorides, acid anhydrides, strong alkalis.

HAZCHEM

â€¢3YE

Section 6 - ACCIDENTAL RELEASE MEASURES

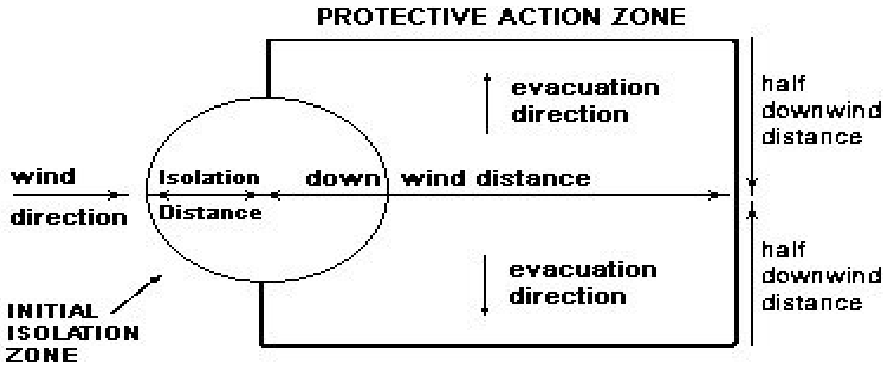
MINOR SPILLS

- 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.

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.
- Consider evacuation (or protect in place).
- 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.

PROTECTIVE ACTIONS FOR SPILL



From IERG (Canada/Australia)
Isolation Distance 25 metres
Downwind Protection Distance 300 metres
IERG Number 14

FOOTNOTES
1 PROTECTIVE ACTION ZONE is defined as the area in which people are at risk of harmful exposure. This zone assumes that random changes in wind direction confines the vapour plume to an area within 30 degrees on either side of the predominant wind direction, resulting in a crosswind protective action distance equal to the downwind protective action distance.
2 PROTECTIVE ACTIONS should be initiated to the extent possible, beginning with those closest to the spill and

working away from the site in the downwind direction.
Within the protective action zone a level of vapour concentration may exist resulting in nearly all unprotected persons becoming incapacitated and unable to take
protective action and/or incurring serious or irreversible health effects.
3 INITIAL ISOLATION ZONE is determined as an area, including upwind of the incident, within which a high probability of localised wind reversal may expose nearly all
persons without appropriate protection to life- threatening concentrations of the material.
4 SMALL SPILLS involve a leaking package of 200 litres (55 US gallons) or less, such as a drum (jerrican or box with inner containers). Larger packages leaking less
than 200 litres and compressed gas leaking from a small cylinder are also considered " small spills" .
LARGE SPILLS involve many small leaking packages or a leaking package of greater than 200 litres, such as a cargo tank, portable tank or a " one- tonne" compressed
gas cylinder.
5 Guide 128 is taken from the US DOT emergency response guide book.
6 IERG information is derived from CANUTEC - Transport Canada.

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:
ethanol NAâ€
irreversible or other serious effects or symptoms which could impair an individual' s ability to take protective action is:
ethanol 3300 ppm
other than mild, transient adverse effects without perceiving a clearly defined odour is:
ethanol 1800 ppm*
American Industrial Hygiene Association (AIHA)
Ingredients considered according to the following cutoffs
Very Toxic (T+) >= 0.1% Toxic (T) >= 3.0%
R50 >= 0.25% Corrosive (C) >= 5.0%
R51 >= 2.5%
else >= 10%
where percentage is percentage of ingredient found in the mixture

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

Section 7 - HANDLING AND STORAGE

PROCEDURE FOR HANDLING

· 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.
· Avoid smoking, naked lights, heat or ignition sources.
· When handling, DO NOT eat, drink or smoke.
· Vapour may ignite on pumping or pouring due to static electricity.
· DO NOT use plastic buckets.
· Earth and secure metal containers when dispensing or pouring product.
· Use spark-free tools when handling.
· Avoid contact with incompatible materials.
· Keep containers securely sealed.
· 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

· Metal can or drum
· Packaging as recommended by manufacturer.
· Check all containers are clearly labelled and free from leaks.

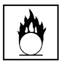
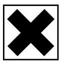
STORAGE INCOMPATIBILITY

â– Segregate from strong oxidisers peroxides and alkali metals e.g. sodium, potassium, lithium.
DO NOT store in aluminium containers.

STORAGE REQUIREMENTS

· 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.
· 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.

SAFE STORAGE WITH OTHER CLASSIFIED CHEMICALS

					
+	X	X	X	X	+

+: May be stored together

O: May be stored together with specific preventions

X: Must not be stored together

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE CONTROLS

Source	Material	TWA ppm	TWA mg/m³
Australia Exposure Standards	ethanol (Ethyl alcohol)	1000	1880

The following materials had no OELs on our records

â€¢ propylene glycol monoethyl ether:	CAS:52125-53-8
â€¢ rosin modified phenolic condensate resin:	CAS:54386-15-1
â€¢ C.I. Basic Yellow 2:	CAS:2465-27-2
â€¢ C.I. Basic Red 1:	CAS:989-38-8

â€¢ C.I. Basic Blue 26, chloride: CAS:2580-56-5 CAS:97930-07-9

EMERGENCY EXPOSURE LIMITS

Material	Revised IDLH Value (mg/m3)	Revised IDLH Value (ppm)
ethanol	278	3,300 [LEL]

NOTES

Values marked LEL indicate that the IDLH was based on 10% of the lower explosive limit for safety considerations even though the relevant toxicological data indicated that irreversible health effects or impairment of escape existed only at higher concentrations.

Material	Revised IDLH Value (mg/m3)	Revised IDLH Value (ppm)
ethanol	278	3,300 [LEL]

NOTES

Values marked LEL indicate that the IDLH was based on 10% of the lower explosive limit for safety considerations even though the relevant toxicological data indicated that irreversible health effects or impairment of escape existed only at higher concentrations.

ODOUR SAFETY FACTOR (OSF)

OSF=6 (ETHANOL)
â– Exposed individuals are NOT 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 C, D or E.
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

.

MATERIAL DATA

C.I. BASIC BLUE 26, CHLORIDE:
C.I. BASIC RED 1:
C.I. BASIC YELLOW 2:
ETHANOL:
PROPYLENE GLYCOL MONOETHYL ETHER:
â– 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 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.

C.I. BASIC BLUE 26, CHLORIDE:

C.I. BASIC RED 1:

C.I. BASIC YELLOW 2:

ROSIN MODIFIED PHENOLIC CONDENSATE RESIN:

â– 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.

ZEUS 1030 Z165 BLACK FROZEN FOOD INK:

â– None assigned. Refer to individual constituents.

ETHANOL:

â– For ethanol:

Odour Threshold Value: 49- 716 ppm (detection), 101 ppm (recognition)

Eye and respiratory tract irritation do not appear to occur at exposure levels of less than 5000 ppm and the TLV-TWA is thought to provide an adequate margin of safety against such effects. Experiments in man show that inhalation of 1000 ppm caused slight symptoms of poisoning and 5000 ppm caused strong stupor and morbid sleepiness. Subjects exposed to 5000 ppm to 10000 ppm experienced smarting of the eyes and nose and coughing. Symptoms disappeared within minutes. Inhalation also causes local irritating effects to the eyes and upper respiratory tract, headaches, sensation of heat intraocular tension, stupor, fatigue and a need to sleep. At 15000 ppm there was continuous lachrymation and coughing.

PROPYLENE GLYCOL MONOETHYL ETHER:

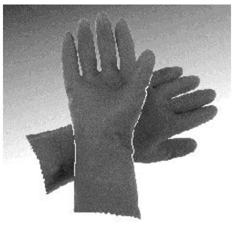
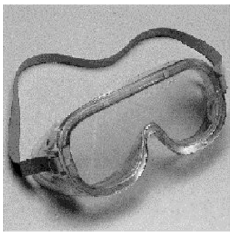
CEL: 100 ppm, 425 mg/m3 [Manufacturer]

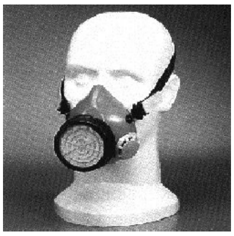
C.I. BASIC YELLOW 2:

â– MAK IIIA2: Substances shown to be clearly carcinogenic only in animal studies but under conditions indicative of carcinogenic potential in the workplace.

CEL TWA: 0.08 mg/m3; STEL 0.32 mg/m3 (cf TRK Germany)

PERSONAL PROTECTION



EYE

â– No special equipment for minor exposure i.e. when handling small quantities.
· OTHERWISE:
· Safety glasses with side shields.
· 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], [AS/NZS 1336 or national equivalent].

HANDS/FEET

â– No special equipment needed when handling small quantities.
OTHERWISE: Wear chemical protective gloves, eg. PVC.

OTHER

â– No special equipment needed when handling small quantities.
OTHERWISE:
· Overalls.
· Barrier cream.
· Eyewash unit.

GLOVE SELECTION INDEX

â– 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: ethanol
â– Protective Material CPI *.

BUTYL	A
NITRILE+PVC	A
PE/EVAL/PE	A
NEOPRENE	A
NITRILE	A
PVC	B
NATURAL+NEOPRENE	C
NATURAL RUBBER	C

â– * 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.

RESPIRATOR

â€¢Type A- P Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)
â– 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 / Class1 P	-
up to 50	1000	-	A-AUS / Class 1 P
up to 50	5000	Airline *	-
up to 100	5000	-	A-2 P
up to 100	10000	-	A-3 P
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).
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

â– None required when handling small quantities.
OTHERWISE: Use in a well- ventilated area.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE

Black flammable liquid with a sweet fragrant odour; mixes with water.

PHYSICAL PROPERTIES

Liquid.
Mixes with water.

State	Liquid	Molecular Weight	Not applicable.
Melting Range (ºC)	Not available.	Boiling Range (ºC)	>78
Solubility in water (g/L)	Miscible	Flash Point (ºC)	<23
pH (1% solution)	Not available	Decomposition Temp (ºC)	Not available
pH (as supplied)	Not available	Autoignition Temp (ºC)	Not available.
Vapour Pressure (kPa)	Not available	Upper Explosive Limit (%)	Not available
Specific Gravity (water=1)	0.900	Lower Explosive Limit (%)	Not available
Relative Vapour Density (air=1)	>1	Volatile Component (%vol)	80 approx.
Evaporation Rate	Not available		

State	Liquid	Molecular Weight	Not applicable.
Melting Range (ºC)	Not available.	Boiling Range (ºC)	>78
Solubility in water (g/L)	Miscible	Flash Point (ºC)	<23
pH (1% solution)	Not available	Decomposition Temp (ºC)	Not available

pH (as supplied)	Not available	Autoignition Temp (ºC)	Not available.
Vapour Pressure (kPa)	Not available	Upper Explosive Limit (%)	Not available
Specific Gravity (water=1)	0.900	Lower Explosive Limit (%)	Not available
Relative Vapour Density (air=1)	>1	Volatile Component (%vol)	80 approx.
Evaporation Rate	Not available		

Section 10 - STABILITY AND REACTIVITY

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

â– The liquid is highly discomforting and harmful if swallowed and may cause dizziness, disorientation, mental confusion, slurred speech.
Ingestion may result in nausea, abdominal irritation, pain and vomiting.
Considered an unlikely route of entry in commercial/industrial environments.

EYE

â– The liquid is highly discomforting to the eyes and is capable of causing a mild, temporary redness of the conjunctiva (similar to wind- burn), temporary impairment
of vision and/ or other transient eye damage/ ulceration.
The material may produce severe irritation to the eye causing pronounced inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.

SKIN

â– The liquid is mildly discomforting to the skin and may cause drying of the skin, which may lead to dermatitis.
Open cuts, abraded or irritated skin should not be exposed to this material The material may accentuate any pre-existing skin condition.
Toxic effects may result from skin absorption.
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

â– The vapour is discomforting to the upper respiratory tract.
Inhalation hazard is increased at higher temperatures.
Inhalation of high concentrations of gas/vapour causes lung irritation with coughing and nausea, central nervous depression with headache and dizziness, slowing of
reflexes, fatigue and inco- ordination. with dizziness, disorientation, mental confusion, slurred speech.
The material may produce respiratory tract irritation, and result in damage to the lung including reduced lung function.

CHRONIC HEALTH EFFECTS

â– Principal routes of exposure are usually by skin contact/absorption and inhalation of vapour.

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

Chronic solvent inhalation exposures may result in nervous system impairment and liver and blood changes. [PATTYS].

Ingestion may result in intoxication.

TOXICITY AND IRRITATION

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

C.I. BASIC YELLOW 2:

PROPYLENE GLYCOL MONOETHYL ETHER:

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

PROPYLENE GLYCOL MONOETHYL ETHER:

ETHANOL:

â– 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.

ZEUS 1030 Z165 BLACK FROZEN FOOD INK:

â– Not available. Refer to individual constituents.

ETHANOL:

TOXICITY	IRRITATION
Oral (rat) LD50: 7060 mg/kg	Skin (rabbit):20 mg/24hr-Moderate
Oral (human) LDLo: 1400 mg/kg	Skin (rabbit):400 mg (open)-Mild
Oral (man) TDLo: 50 mg/kg	Eye (rabbit):100mg/24hr-Moderate
Oral (man) TDLo: 1.40 mg/kg	Eye (rabbit): 500 mg SEVERE
Oral (woman) TDLo: 256 mg/kg/12 wks	
Inhalation (rat) LC50: 20,000 ppm/10h	
Inhalation (rat) LC50: 64000 ppm/4h	

PROPYLENE GLYCOL MONOETHYL ETHER:

â– 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 produce respiratory tract irritation, and result in damage to the lung including reduced lung function.

for propylene glycol ethers (PGEs):

Typical propylene glycol ethers include propylene glycol n- butyl ether (PnB); dipropylene glycol n- butyl ether (DPnB); dipropylene glycol methyl ether acetate (DPMA); tripropylene glycol methyl ether (TPM).

Testing of a wide variety of propylene glycol ethers Testing of a wide variety of propylene glycol ethers has shown that propylene glycol- based ethers are less toxic than some ethers of the ethylene series. The common toxicities associated with the lower molecular weight homologues of the ethylene series, such as adverse effects on reproductive organs, the developing embryo and fetus, blood (haemolytic effects), or thymus, are not seen with the commercial- grade propylene glycol ethers. In the ethylene series, metabolism of the terminal hydroxyl group produces an alkoxyacetic acid. The reproductive and developmental toxicities of the lower molecular weight homologues in the ethylene series are due specifically to the formation of methoxyacetic and ethoxyacetic acids.

Longer chain length homologues in the ethylene series are not associated with the reproductive toxicity but can cause haemolysis in sensitive species, also through formation of an alkoxyacetic acid. The predominant alpha isomer of all the PGEs (thermodynamically favored during manufacture of PGEs) is a secondary alcohol incapable of forming an alkoxypropionic acid. In contrast beta- isomers are able to form the alkoxypropionic acids and these are linked to teratogenic effects (and possibly haemolytic effects).

This alpha isomer comprises greater than 95% of the isomeric mixture in the commercial product.

Because the alpha isomer cannot form an alkoxypropionic acid, this is the most likely reason for the lack of toxicity shown by the PGEs as distinct from the lower molecular weight ethylene glycol ethers. More importantly, however, very extensive empirical test data show that this class of commercial- grade glycol ether presents a low toxicity hazard. PGEs, whether mono, di- or tripropylene glycol- based (and no matter what the alcohol group), show a very similar pattern of low to non- detectable toxicity of any type at doses or exposure levels greatly exceeding those showing pronounced effects from the ethylene series. One of the primary metabolites of the propylene glycol ethers is propylene glycol, which is of low toxicity and completely metabolised in the body.

As a class, the propylene glycol ethers are rapidly absorbed and distributed throughout the body when introduced by inhalation or oral exposure. Dermal absorption is somewhat slower but subsequent distribution is rapid. Most excretion for PGEs is via the urine and expired air. A small portion is excreted in the faeces.

As a group PGEs exhibits low acute toxicity by the oral, dermal, and inhalation routes. Rat oral LD50s range from >3, 000 mg/kg (PnB) to >5, 000 mg/kg (DPMA). Dermal LD50s are all > 2, 000 mg/kg (PnB, & DPnB; where no deaths occurred), and ranging up to >15, 000 mg/kg (TPM). Inhalation LC50 values were higher than 5, 000 mg/m3 for DPMA (4- hour exposure), and TPM (1- hour exposure). For DPnB the 4- hour LC50 is >2, 040 mg/m3. For PnB, the 4- hour LC50 was >651 ppm (>3, 412 mg/m3), representing the highest practically attainable vapor level. No deaths occurred at these concentrations. PnB and TPM are moderately irritating to eyes while the remaining category members are only slightly irritating to nonirritating. PnB is moderately irritating to skin while the remaining category members are slightly to non- irritating

None are skin sensitisers.

In repeated dose studies ranging in duration from 2 to 13 weeks, few adverse effects were found even at high exposure levels and effects that did occur were mild in nature. By the oral route of administration, NOAELs of 350 mg/kg- d (PnB â€“ 13 wk) and 450 mg/kg- d (DPnB â€“ 13 wk) were observed for liver and kidney weight increases (without accompanying histopathology). LOAELs for these two chemicals were 1000 mg/kg- d (highest dose tested).

Dermal repeated- dose toxicity tests have been performed for many PGEs. For PnB, no effects were seen in a 13- wk study at doses as high as 1, 000 mg/kg- d. A dose of 273 mg/kg- d constituted a LOAEL (increased organ weights without histopathology) in a 13- week dermal study for DPnB. For TPM, increased kidney weights (no histopathology) and transiently decreased body weights were found at a dose of 2, 895 mg/kg- d in a 90- day study in rabbits. By inhalation, no effects were observed in 2- week studies in rats at the highest tested concentrations of 3244 mg/m3 (600 ppm) for PnB and 2, 010 mg/m3 (260 ppm) for DPnB. TPM caused increased liver weights without histopathology by inhalation in a 2- week study at a LOAEL of 360 mg/m3 (43 ppm). In this study, the highest tested TPM concentration, 1010 mg/m3 (120 ppm), also caused increased liver weights without accompanying histopathology. Although no repeated- dose studies are available for the oral route for TPM, or for any route for DPMA, it is anticipated that these chemicals would behave similarly to other category members.

One and two- generation reproductive toxicity testing has been conducted in mice, rats, and rabbits via the oral or inhalation routes of exposure on PM and PMA. In an inhalation rat study using PM, the NOAEL for parental toxicity is 300 ppm (1106 mg/m3) with decreases in body and organ weights occurring at the LOAEL of 1000 ppm (3686 mg/m3). For offspring toxicity the NOAEL is 1000 ppm (3686 mg/m3), with decreased body weights occurring at 3000 ppm (11058 mg/m3). For PMA, the NOAEL for parental and offspring toxicity is 1000 mg/kg/d. in a two generation gavage study in rats. No adverse effects were found on reproductive organs, fertility rates, or other indices commonly monitored in such studies. In addition, there is no evidence from histopathological data from repeated- dose studies for the category members that would indicate that these chemicals would pose a reproductive hazard to human health.

In developmental toxicity studies many PGEs have been tested by various routes of exposure and in various species at significant exposure levels and show no frank developmental effects. Due to the rapid hydrolysis of DPMA to DPM, DPMA would not be expected to show teratogenic effects. At high doses where maternal toxicity occurs (e.g., significant body weight loss), an increased incidence of some anomalies such as delayed skeletal ossification or increased 13th ribs, have been reported. Commercially available PGEs showed no teratogenicity.

The weight of the evidence indicates that propylene glycol ethers are not likely to be genotoxic. In vitro, negative results have been seen in a number of assays for PnB, DPnB, DPMA and TPM. Positive results were only seen in 3 out of 5 chromosome aberration assays in mammalian cells with DPnB. However, negative results were seen in a mouse micronucleus assay with DPnB and PM. Thus, there is no evidence to suggest these PGEs would be genotoxic in vivo. In a 2- year bioassay on PM, there were no statistically significant increases in tumors in rats and mice.

1, 2- propanediol, monoethyl ether
(mixed isomers) CAS RN 52125- 53- 8

ROSIN MODIFIED PHENOLIC CONDENSATE RESIN:

TOXICITY	IRRITATION
	Skin: slight
	Eye: slight [Ashland]

C.I. BASIC YELLOW 2:

TOXICITY	IRRITATION
Intraperitoneal (rat) LD50: 135 mg/kg	Nil Reported
Oral (mouse) LD50: 480 mg/kg	
Dermal (mouse) LD50: 300 mg/kg	
Oral (cat) LD50: 150 mg/kg	
Oral (Rat) LD: 1500 mg/kg	
Subcutaneous (Mouse) LD50: 300 mg/kg	

â– 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.

Long term animal feeding studies with auramine show a dose- dependent reduction in food consumption and delayed body- weight gain and an increase in relative liver weights. Histologically detectable chronic toxic organ damage such as hyperplasia, cirrhotic changes, bile duct proliferation and cholangiofibrosis are only found after administration of relatively high concentrations in the diet for 2- years or for the whole life- span of animals and are generally associated with the development of hepatomas, cholangiomas and hepatocellular carcinomas. Tests for the initiating and promoting activity of auramine yield positive results. The currently available data indicate that exposure to auramine and the working conditions prevailing to the production process involve a cancer risk to man.

NOTE: Substance has been shown to be mutagenic in at least one assay, or belongs to a family of chemicals producing damage or change to cellular DNA.

Liver and kidney tumours, tumours at sites of application recorded.

Equivocal tumorigenic agent by RTECS criteria.

C.I. BASIC RED 1:

TOXICITY	IRRITATION
Oral (Rat) LD50: 250 mg/kg *	Eye (rabbit): irritating *
Dermal (Rat) LD50: >2500 mg/kg *	Skin (rabbit): non-irritating *

â– The substance is classified by IARC as Group 3:
NOT classifiable as to its carcinogenicity to humans.
Evidence of carcinogenicity may be inadequate or limited in animal testing.

* BASF Canada

C.I. BASIC BLUE 26, CHLORIDE:

â– No significant acute toxicological data identified in literature search.

CARCINOGEN

Auramine production	International Agency for Research on	Group	1

	Cancer (IARC) - Agents Reviewed by the IARC Monographs		
Rhodamine 6G	International Agency for Research on Cancer (IARC) - Agents Reviewed by the IARC Monographs	Group	3

Section 12 - ECOLOGICAL INFORMATION

C.I. BASIC RED 1:
C.I. BASIC BLUE 26, CHLORIDE:
C.I. BASIC YELLOW 2:
â– For Basic Dyes:
Environmental Fate: Dyes are highly persistent in natural environments making it unlikely that they will biodegrade aerobically. Basic dyes are cationic. Ionic compounds are generally non-volatile. Dyes must have a high degree of chemical and photolytic stability.
Aquatic Fate: Many dyes are visible in water at concentrations as low as 1 mg/L. Textile-processing waste waters are therefore usually highly colored and discharge in open waters presents an aesthetic problem. Biological treatment processes have, in many cases, proven to be sufficient for removal of basic dyestuffs from waste waters. Dyes in the aquatic environment have been reported to affect microbial populations and their activities. The inhibition of basic dyes is stronger than the inhibition by acid dyes when the pH is above the isoelectric point of the micro-organism. The introduction of chlorine or bromine strengthens inhibition. The inhibition is weakened by introduction of the functional groups methyl, nitro, sulfo or acid to the azo dye or by replacement of the benzene ring with a naphthalene ring.
Ecotoxicity: The release of dyes may present an ecotoxic hazard and introduces the potential danger of bioaccumulation that may eventually affect man by transport through the food chain. Some basic dyes are acutely toxic or toxic to fish, crustaceans, algae and bacteria. Algae are generally susceptible to dyes, but this is thought to be related to light inhibition at high dye concentrations rather than a direct inhibitory effect of the dyes. This effect may account for up to 50% of the inhibition observed. Virtually all dyes are prone to fungal oxidation but there are large differences between fungal species with respect to their catalyzing power and dye selectivity. A clear relationship between dye structure and fungal dye biodegradability has not been established.
â– For Organic Cationics:
Environmental Fate: Cationic substances in the environment instantaneously form complexes with naturally occurring negatively charged constituents in sewage, soils, sediments, and with dissolved humic substances in surface waters. This complexation behaviour results in reduced bioavailability in actual environmental conditions.
Aquatic Fate: Cationic substances may be environmental hazards in aquatic environments. The source and composition of water dramatically affects toxicity in aquatic systems. Exempt from this concern are those polymers to be used only in solid phase, such as ion-exchange resins, and where the FGEW (Functional Group Equivalent Weight) of cationic groups is not 5000 and above.
Ecotoxicity: These chemicals, by the nature of their surfactant properties, are toxic to aquatic organisms at low concentrations. Cationic groups (alkylsulfoniums, alkylphosphoniums and quaternary ammonium polymers) are highly toxic to fish and other aquatic organisms. Similarly, potentially cationic groups such as amines and isocyanates are also of concern. Some cationics, however, may fall into the category of PLCs (polymers of low concern) provided they possess low charge density, and/or are not water-soluble or are not self-dispersing polycarboxylates or poly- (aromatic or aliphatic) sulfonate polymers. The toxicity of quaternary ammonium compounds is known to be greatly reduced in the environment because of preferential binding to dissolved organics in surface water.
â– Do NOT allow product to come in contact with surface waters or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment wash-waters.
Wastes resulting from use of the product must be disposed of on site or at approved waste sites.
â– Toxic to aquatic organisms.

C.I. BASIC RED 1:
C.I. BASIC YELLOW 2:
â– May cause long-term adverse effects in the aquatic environment.

PROPYLENE GLYCOL MONOETHYL ETHER:
C.I. BASIC YELLOW 2:
C.I. BASIC RED 1:
ETHANOL:
â– DO NOT discharge into sewer or waterways.

ETHANOL:

Fish LC50 (96hr.) (mg/l):	13480
Algae IC50 (72hr.) (mg/l):	1450

log Kow (Sangster 1997):	-0.3
BOD5:	63%
ThOD:	2.1
Half-life Soil - High (hours):	24
Half-life Soil - Low (hours):	2.6
Half-life Air - High (hours):	122
Half-life Air - Low (hours):	12.2
Half-life Surface water - High (hours):	26
Half-life Surface water - Low (hours):	6.5
Half-life Ground water - High (hours):	52
Half-life Ground water - Low (hours):	13
Aqueous biodegradation - Aerobic - High (hours):	26
Aqueous biodegradation - Aerobic - Low (hours):	6.5
Aqueous biodegradation - Anaerobic - High (hours):	104
Aqueous biodegradation - Anaerobic - Low (hours):	26
Aqueous biodegradation - Removal secondary treatment - High (hours):	67%
Photooxidation half-life water - High (hours):	3.20E+05
Photooxidation half-life water - Low (hours):	8020
Photooxidation half-life air - High (hours):	122
Photooxidation half-life air - Low (hours):	12.2

â– For Ethanol:
log Kow: -0.31 to -0.32;
Koc 1: Estimated BCF= 3;
Half-life (hr) air: 144;
Half-life (hr) H2O surface water: 144;
Henry's atm m3 /mol: 6.29E-06;
BOD 5 if unstated: 0.93-1.67,63%
COD: 1.99-2.11,97%;
ThOD : 2.1.

Environmental Fate: Terrestrial - Ethanol quickly biodegrades in soil but may leach into ground water; most is lost by evaporation. Ethanol is expected to have very high mobility in soil. Volatilization of ethanol from moist soil surfaces is expected to be an important fate process. The potential for volatilization of ethanol from dry soil surfaces may exist. Biodegradation is expected to be an important fate process for ethanol based on half-lives on the order of a few days for ethanol in sandy soil/groundwater microcosms.

Atmospheric Fate: Ethanol is expected to exist solely as a vapour in the ambient atmosphere. Vapour-phase ethanol is degraded in the atmosphere by reaction with photochemically-produced hydroxyl radicals; the half-life for this reaction in air is estimated to be 5 days. Ethanol readily degraded by reaction with photochemically produced hydroxy radicals; release into air will result in photodegradation and wet deposition.

Aquatic Fate: When released into water ethanol readily evaporates and is biodegradable. Ethanol is not expected to adsorb to suspended solids and sediment. Volatilization from water surfaces is expected and volatilization half-lives for a model river and model lake are 3 and 39 days, respectively. Bioconcentration in aquatic organisms is considered to be low. Hydrolysis and photolysis in sunlit surface waters is not expected to be an important environmental fate process for ethanol and is unlikely to be persistent in aquatic environments.

PROPYLENE GLYCOL MONOETHYL ETHER:

Hazardous Air Pollutant:	Yes
Half-life Soil - High (hours):	672
Half-life Soil - Low (hours):	168
Half-life Air - High (hours):	31.9
Half-life Air - Low (hours):	3.19
Half-life Surface water - High (hours):	672
Half-life Surface water - Low (hours):	168
Half-life Ground water - High (hours):	1344
Half-life Ground water - Low (hours):	336
Aqueous biodegradation - Aerobic - High (hours):	672
Aqueous biodegradation - Aerobic - Low (hours):	168
Aqueous biodegradation - Anaerobic - High (hours):	2688

Aqueous biodegradation - Anaerobic - Low (hours):	672
Photooxidation half-life air - High (hours):	31.9
Photooxidation half-life air - Low (hours):	3.19

â– For Glycol Ethers:
Environmental Fate: Several glycol ethers have been shown to biodegrade however; biodegradation slows as molecular weight increases. No glycol ethers that have been tested demonstrate marked resistance to biodegradative processes. No glycol ethers that have been tested demonstrate marked resistance to biodegradative processes.
Atmospheric Fate: Upon release to the atmosphere by evaporation, high boiling glycol ethers are estimated to undergo photo-degradation (atmospheric half lives = 2.4-2.5 hr). Aquatic Fate: In water, glycol ethers undergo biodegradation (typically 47-92% after 8-21 days) and have a low potential for bioaccumulation (log Kow ranges from -1.73 to +0.51).
Ecotoxicity: Tri- and tetra ethylene glycol ethers are "practically non-toxic" to aquatic species. No major differences are observed in the order of toxicity going from the methyl- to the butyl ethers. Glycols exert a high oxygen demand for decomposition and once released to the environment death of aquatic organisms occurs if dissolved oxygen is depleted.
For Propylene Glycol Ethers: log Kow's range from 0.309 for TPM to 1.523 for DPnB. Calculated BCFs range from 1.47 for DPnB to 3.16 for DPMA and TPM, indicating low bioaccumulation. Henry's Law Constants are low for all category members, ranging from 5.7 x 10-9 atm-m3/mole for TPM to 2.7 x10-9 atm-m3/mole for PnB.
Environmental Fate: Most are liquids at room temperature and all are water-soluble.
Atmospheric Fate: In air, the half-life due to direct reactions with photochemically generated hydroxyl radicals, range from 2.0 hours for TPM to 4.6 hours for PnB.
Aquatic/Terrestrial Fate: Most propylene glycol ethers are likely to partition roughly equally into the soil and water compartments in the environment with small to negligible amounts remaining in other environmental compartments (air, sediment, and aquatic biota). In water, most members of this family are "readily biodegradable" under aerobic conditions. In soil, biodegradation is rapid for PM and PMA.
Ecotoxicity: Propylene glycol ethers are unlikely to persist in the environment. Acute aquatic toxicity testing indicates low toxicity for both ethers and acetates.

ROSIN MODIFIED PHENOLIC CONDENSATE RESIN:
â– For Rosins:
Environmental Fate: Resin, (rosin), acids, a class of wood extractives, are potential toxic constituents in many pulp and paper mill effluents.
Atmospheric Fate: If released to air, a low amount of the substance is expected to remain in air and will not persist. If released solely to air, it will not tend to remain in this compartment; the major two compartments in which this substance will partition will be soil and sediment. These substances are expected to oxide and are not expected to react with atmospheric ozone. Reactions with hydroxyl radicals will be the most important fate process in the atmosphere.
Terrestrial Fate: If released to soil, resins/rosins are expected to be relatively immobile. The substances are not expected to evaporate from moist/dry soil surfaces. Therefore, if released to soil, these substances will mainly remain in this environmental compartment.
Aquatic Fate: Wood-derived resin acids will readily biodegrade under both oxygenated and low oxygen conditions in water and sediments, although the rate of degradation appears quite variable, depending on site conditions. If released into water, these substances are expected to strongly adsorb to suspended solids and sediment. Thus, if water is a receiving medium, these substances are expected to mainly partition into sediment and remain in water.
Ecotoxicity: Resin acids, and their aromatized derivative retene, can be long-lasting sources to deep water organisms. Dredging, or other human actions, can liberate these potential toxicants, even from deep sediments, to an aqueous phase with harmful consequences to aquatic species. Accumulation of the substance in aquatic species is expected to occur. These substances have low to moderate toxicity to fish. The substances have low toxicity to Daphnia magna water fleas and are moderately toxic to Selenastrum capricornutum algae.

C.I. BASIC YELLOW 2:

Marine Pollutant Yes
â– For Arylamines (Aromatic Amines):
Aquatic Fate - Arylamines, particularly aromatic amines, irreversibly bind with humic substances present in most natural waters. The estimated half-life of aromatic amines in water is approximetly 100 days.
Ecotoxicity: Anilines, benzidines and toluidines are of environmental concern. Anilines and benzidines are both acutely toxic and toxic depending on the specific aquatic species (except algae). Toluidines represent a similar concern, It has been speculated that aqueous solutions of aromatic amines can be oxidized by organic radicals. The estimated half-life of aromatic amines in water is approximately 100 days.

C.I. BASIC RED 1:

Marine Pollutant Yes

Fish LC50 (96 h): Leuciscus idus 1-10 mg/l; LC0 (48 h) Leuciscus idus 1 mg/l
Daphnia EC50 (48 h) 0.16 mg/l
Inhibition of bacteria 50% inhibition: 1-10 mg/l

Ecotoxicity

Ingredient	Persistence: Water/Soil	Persistence: Air	Bioaccumulation	Mobility
ethanol	LOW	MED	LOW	HIGH
propylene glycol monoethyl ether	No Data Available	No Data Available	LOW	
rosin modified phenolic condensate resin	No Data Available	No Data Available		
C.I. Basic Yellow 2	HIGH	No Data Available	LOW	LOW
C.I. Basic Red 1	No Data Available	No Data Available		
C.I. Basic Blue 26, chloride	HIGH	No Data Available	LOW	LOW

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:

â€¢3YE (ADG7)

ADG7:

Class or Division:	3	Subsidiary Risk:	None
UN No.:	1993	Packing Group:	II
Special Provision:	274	Limited Quantity:	1 L
Portable Tanks & Bulk Containers - Instruction:	T7	Portable Tanks & Bulk Containers - Special Provision:	TP1 TP8 TP28
Packagings & IBCs - Packing Instruction:	None	Packagings & IBCs - Special Packing Provision:	P001 IBC02

Name and Description: FLAMMABLE LIQUID, N.O.S. (contains ethanol)

Land Transport UNDG:

Class or division:	3	Subsidiary risk:	None
UN No.:	1993	UN packing group:	II

Shipping Name:FLAMMABLE LIQUID, N.O.S. (contains ethanol)

Air Transport IATA:

ICAO/IATA Class:	3	ICAO/IATA Subrisk:	None
UN/ID Number:	1993	Packing Group:	II
Special provisions:	A3		

Shipping name:FLAMMABLE LIQUID, N.O.S.(contains ethanol)

Maritime Transport IMDG:

IMDG Class:	3	IMDG Subrisk:	None
UN Number:	1993	Packing Group:	II
EMS Number:	F-E,S-E	Special provisions:	274
Limited Quantities:	1 L		

Shipping name:FLAMMABLE LIQUID, N.O.S.(contains ethanol)

Section 15 - REGULATORY INFORMATION

POISONS SCHEDULE None

REGULATIONS

Regulations for ingredients

ethanol (CAS: 64-17-5) is found on the following regulatory lists;

"Australia Exposure Standards","Australia Hazardous Substances","Australia High Volume Industrial Chemical List (HVICL)","Australia Inventory of Chemical Substances (AICS)","Australia National Pollutant Inventory","FEMA Generally Recognized as Safe (GRAS) Flavoring Substances 23 - Examples of FEMA GRAS Substances with Non-Flavor Functions","GESAMP/EHS Composite List - GESAMP Hazard Profiles","IMO IBC Code Chapter 17: Summary of minimum requirements","IMO IBC Code Chapter 18: List of products to which the Code does not apply","IMO MARPOL 73/78 (Annex II) - List of Other Liquid Substances","IMO Provisional Categorization of Liquid Substances - List 2: Pollutant only mixtures containing at least 99% by weight of components already assessed by IMO","International Air Transport Association (IATA) Dangerous Goods Regulations","International Council of Chemical Associations (ICCA) - High Production Volume List","International Fragrance Association (IFRA) Survey: Transparency List","OECD List of High Production Volume (HPV) Chemicals","OSPAR National List of Candidates for Substitution â€“ Norway","World Anti-Doping Agency - The 2009 Prohibited List World Anti-Doping Code - Substances Prohibited in Competition (German)","World Anti-Doping Agency - The 2009 Prohibited List World Anti-Doping Code - Substances Prohibited in Particular Sports (English)","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)"

propylene glycol monoethyl ether (CAS: 52125-53-8) is found on the following regulatory lists;

"Australia Inventory of Chemical Substances (AICS)","GESAMP/EHS Composite List - GESAMP Hazard Profiles","IMO IBC Code Chapter 17: Summary of minimum requirements","OECD List of High Production Volume (HPV) Chemicals","OSPAR National List of Candidates for Substitution â€“ Norway"

rosin modified phenolic condensate resin (CAS: 54386-15-1) is found on the following regulatory lists;

"Australia National Pollutant Inventory"

C.I. Basic Yellow 2 (CAS: 2465-27-2) is found on the following regulatory lists;

"Australia Hazardous Substances","Australia Inventory of Chemical Substances (AICS)","Australia National Pollutant Inventory","International Agency for Research on Cancer (IARC) - Agents Reviewed by the IARC Monographs"

C.I. Basic Red 1 (CAS: 989-38-8) is found on the following regulatory lists;

"Australia Inventory of Chemical Substances (AICS)","Australia National Pollutant Inventory","International Agency for Research on Cancer (IARC) - Agents Reviewed by the IARC Monographs"

C.I. Basic Blue 26, chloride (CAS: 2580-56-5,97930-07-9) is found on the following regulatory lists;

"Australia Inventory of Chemical Substances (AICS)","Australia National Pollutant Inventory"

No data for Zeus 1030 Z165 Black Frozen Food Ink (CW: 47161)

Section 16 - OTHER INFORMATION

Denmark Advisory list for selfclassification of dangerous substances

Substance CAS Suggested codes
C.I. Basic Red 1 989- 38- 8 T; R25

INGREDIENTS WITH MULTIPLE CAS NUMBERS

Ingredient Name	CAS
C.I. Basic Blue 26, chloride	2580-56-5, 97930-07-9

REPRODUCTIVE HEALTH GUIDELINES

Ingredient	ORG	UF	Endpoint	CR	Adeq TLV
ethanol	1880 mg/m3	NA	NA	NA	Yes

â– These exposure guidelines have been derived from a screening level of risk assessment and should not be construed as unequivocally safe limits. ORGS represent an 8-hour time-weighted average unless specified otherwise.
CR = Cancer Risk/10000; UF = Uncertainty factor:
TLV believed to be adequate to protect reproductive health:
LOD: Limit of detection
Toxic endpoints have also been identified as:
D = Developmental; R = Reproductive; TC = Transplacental carcinogen
Jankovic J., Drake F.: A Screening Method for Occupational Reproductive
American Industrial Hygiene Association Journal 57: 641-649 (1996).

EXPOSURE STANDARD FOR MIXTURES

â– " Worst Case" computer- aided prediction of spray/ mist or fume/ dust components and concentration:
â– Composite Exposure Standard for Mixture (TWA) :0.08 mg/m³.
â– Operations which produce a spray/mist or fume/dust, introduce particulates to the breathing zone.
If the breathing zone concentration of ANY of the components listed below is exceeded, " Worst Case" considerations deem the individual to be overexposed.
Component Breathing Zone ppm Breathing Zone mg/m3 Mixture Conc (%).

Component	Breathing zone (ppm)	Breathing zone (mg/m3)
Mixture Conc (%)	C.I. Basic Yellow 2	0.0800
10.0		

â– 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.

â– 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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This is the end of the MSDS.