

MATERIAL SAFETY DATA SHEET

*This Material Safety Data Sheet complies with the Canadian Controlled Product Regulations.
Abbreviations used: N/ap., Not applicable, N/av., Not available, N/est., Not established, TLV, Threshold Limit Value,*

SECTION 1 - IDENTIFICATION

PRODUCT IDENTIFIER:	ZAAL RINSE AID R-1
PRODUCT USE:	Industrial Machine Wash Agent
SUPPLIER:	Gemini Packaging Limited 150-12071 Jacobson Way, Richmond, British Columbia, Canada, V6W 1L5 Telephone: (604) 278-3455 Emergency Telephone: (613) 996-6666 (Canutec 24 hours)

SECTION 2 - COMPOSITION

HAZARDOUS INGREDIENTS	% (W/W)	CAS NUMBER	LD50	LC50	EXPOSURE LIMITS
Ethyl alcohol	1.0-5.0	64-17-5	7060 mg/kg (oral/rat)	2000 ppm / 10 Hrs. inhalat. rat; 39 gm/ m ³ /4 Hrs. inhalation mouse	1880 mg/m ³ of air (ACGIH TWA)
Ethoxylated fatty alcohol	5.0- 10.0	68603-46-3	1400 mg/kg (oral/rat)	N/est.	N/est.
Citric acid	5.0- 10.0	77-92-9	6730 mg/kg (oral/rat)	N/est.	N/est.

SECTION 3 - HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW:

This product is a weak acid agent. Causes severe eye and mild skin irritation in humans. Can decompose at high temperatures emitting acrid smoke and irritating fumes. Sealed containers may rupture from exposure to water vapours released by intense heat.

EFFECTS OF SHORT-TERM (ACUTE) EXPOSURE:

INHALATION: Product is irritating to the nose, throat and respiratory tract.

SKIN CONTACT: Cause symptoms of severe skin irritation such as reddening, swelling, rash, scaling, or blistering. Excessive contact may cause drying by absorption of moisture and oils.

EYE CONTACT: Causes severe eye irritation, with contact causing burns.

INGESTION: This product causes severe irritation, a burning sensation of the mouth and throat and abdominal pain.

EFFECTS OF LONG-TERM (CHRONIC) EXPOSURE:

Prolonged contact with eyes may cause permanent eye lesions. Prolonged skin contact may cause dermatitis.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:

Pre-existing eye, skin, respiratory tract disorders may be aggravated by exposure.

ZAAL RINSE AID R-1**SECTION 4 - FIRST AID MEASURES**

INHALATION: Move victim to fresh air. Give artificial respiration, if indicated. Obtain immediate medical attention.

SKIN CONTACT: Remove contaminated clothing, and wash affected area thoroughly with soap and water. If an irritation develops or persists, seek medical attention.

EYE CONTACT: Flush contaminated eye(s) with lukewarm, gently flowing water for at least 20 minutes while holding eyelids open. Take care not to contaminate unaffected eye. If irritation persists repeat the flushing process. Do not transport victim until the recommended flushing time has been achieved unless flushing can continue during transport. Obtain immediate medical attention.

INGESTION: Never give anything by mouth if victim is unconscious, rapidly losing consciousness or convulsing. Rinse mouth thoroughly with cold water and give ½ to 1 glass of water to dilute ingested material. DO NOT INDUCE VOMITING. If vomiting occurs naturally, have victim lean forward, head down, to reduce risk of aspiration. Obtain immediate medical attention.

GENERAL COMMENTS: All first-aid procedures should be reviewed by a physician familiar with the product and its conditions of use in the workplace. Physician should treat this symptomatically.

SECTION 5 - FIRE FIGHTING MEASURES

FLASH POINT:	N/ap.	LOWER FLAMMABILITY LIMITS:	N/ap.	SENSITIVITY TO MECHANICAL IMPACT:	Not expected to be sensitive
AUTOIGNITION TEMPERATURE:	N/ap.	UPPER FLAMMABILITY LIMITS:	N/ap.	SENSITIVITY TO STATIC DISCHARGE:	Not expected to be sensitive

EXTINGUISHING MEDIA: Use media suitable to control surrounding fire. Water fog, dry chemical, carbon dioxide or alcohol type foam.

FIRE FIGHTING INSTRUCTIONS: Fire-exposed containers should be kept cool by spraying water. Excessive heat may cause containers to explode, and release of product in this manner will usually cause a more intense fire. Spilled material will cause floors and walkways to become slippery. Firefighters must use self-contained breathing apparatus and protective clothing.

HAZARDOUS COMBUSTION PRODUCTS: Product emits acrid smoke and irritating fumes under high temperature.

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) HAZARD INDEX:

HEALTH: 1 - Causes temporary and only minor injury, **FLAMMABILITY:** 1 – Stable and will not burn unless heated excessively or sparked with static discharge. **REACTIVITY:** 1 - Normally stable, but can become unstable at elevated temperatures and pressures. **SPECIFIC HAZARDS:** N/ap.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

PERSONAL PROTECTION: Avoid direct contact with material. Minimize airborne spreading of the material. If material is airborne, wear respirator. Wear protective clothing and gloves.

ENVIRONMENTAL PRECAUTIONS: Prevent release into waterways and sewers.

REMEDIAL MEASURES: Remove combustibles. Stop or reduce leak if it can be done safely. Contain spill with earth, sand or absorbent material which does not react with spilled material. Contaminated absorbent material may pose the same hazards as the spilled product. Put material in suitable, covered and labeled containers. Flush area with water. For large spills, contact fire and emergency services and supplier for advice. Notify applicable government authority if release is a reportable quantity and could adversely affect the environment.

ZAAL RINSE AID R-1

SECTION 7 - HANDLING AND STORAGE

HANDLING: Use good housekeeping practices. Avoid contamination of product with other materials. Use in a well ventilated area. Mechanical ventilation should be corrosion and explosion proof.

STORAGE: Store away from combustibles and incompatible materials in tightly closed containers. Keep containers in a cool area away from sparks and flames.

SECTION 8 - EXPOSURE CONTROLS AND PERSONAL PROTECTION

ENGINEERING CONTROLS: Local exhaust ventilation required. Worker exposure to vapor/mist must be kept as low as reasonably achievable.

RESPIRATORY PROTECTION: No respiratory protection is warranted under normal use conditions.

EXPOSURE LIMITS: See Section 2.

SKIN PROTECTION: Wear resistant gloves and work clothes covering arms and legs.

EYE AND FACE PROTECTION: Use chemical safety goggles, a face shield may also be necessary.

OTHER: Emergency showers and eye-wash stations should be readily available.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE:

Clear blue liquid

MELTING POINT:

N/ap.

ODOUR:	Odorless	BOILING POINT:	100°C
pH:	1.5 to 2.5	CRITICAL TEMPERATURE:	N/ap.
VAPOUR PRESSURE:	N/est. @20°C	RELATIVE DENSITY:	1.000 to 1.020
SOLUBILITY:	Miscible with water	PARTION COEFFICIENT: n-OCTANOL/WATER	N/av.
VAPOUR DENSITY (Air=1):	=water	EVAPORATION RATE (Butane Acetate=1):	<=1

SECTION 10 - STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable under normal conditions.

HAZARDOUS POLYMERIZATION: Will not undergo hazardous polymerisation.

INCOMPATIBILITY: Strong oxidizers and alkalines.

HAZARDOUS DECOMPOSITION PRODUCTS: Decomposes at high temperatures releasing acrid smoke and irritating fumes.

SECTION 11 - TOXICOLOGICAL INFORMATION

ROUTE(S) OF ENTRY: Inhalation (minor), Ingestion (major), Eye contact (major), Skin contact (major)

ACUTE EXPOSURE:

No specific animal data is available for this product.

CHRONIC EXPOSURE:

No specific animal data is available for this product.

ZAAL RINSE AID R-1

SECTION 11 - TOXICOLOGICAL INFORMATION (con't)

IRRITANCY:	SENSITIZATION:
Expected to cause skin, eye, respiratory and gastrointestinal irritation.	Not reported.
MUTAGENICITY:	REPRODUCTIVE TOXICITY:
Not reported. Probably not mutagenic.	Not reported.
TERATOGENICITY:	CARCINOGENICITY:
Not reported. Probably not teratogenic.	Not listed as human carcinogen by ACGIH, IARC or OSHA
POTENTIAL FOR ACCUMULATION:	SYNERGISTIC PRODUCTS:
Not expected to accumulate.	None known.

SECTION 12 - ECOLOGICAL INFORMATION

ECOTOXICITY: May be harmful to aquatic life.

ENVIRONMENTAL FATE: This product is unlikely to bio-concentrate in aquatic organisms and fish. Has low mobility in soil and may rapidly volatilize in the atmosphere.

Can be dangerous if allowed to enter drinking water intakes. Do not contaminate domestic or irrigation water supplies, lake, streams, ponds, or rivers.

SECTION 13 - DISPOSAL CONSIDERATIONS

DEACTIVATING CHEMICALS: Carefully dilute the product with water and allow the solution to naturally degrade.
WASTE DISPOSAL METHODS: Place used and contaminated material and packagings into suitable containers and dispose of as controlled waste. Review and follow all local, provincial, and federal regulations.

SECTION 14 - TRANSPORT INFORMATION

ICAO TECHNICAL INSTRUCTIONS, IMDG CODE: N/ap.

US HAZARDOUS MATERIALS REGULATIONS: N/ap.

CANADIAN TRANSPORTATION OF DANGEROUS GOODS REGULATIONS: Class 8 (Corrosive), UN 1760, PG II.

SECTION 15 - REGULATORY INFORMATION

CANADIAN FEDERAL REGULATIONS:

CEPA, DOMESTIC SUBSTANCES LIST: All ingredients are listed.

WHMIS CLASSIFICATION: Class E (corrosive material).

SECTION 16 - OTHER INFORMATION

PREPARATION DATE: October 21, 2013

PREPARED BY: Gemini Packaging Ltd.

DECLARATION: This Material Safety Data Sheet meets or exceeds all the requirements of the Canadian Controlled Product Regulations.