Safety Data Sheet
Diluant GALVA ZN

1. Identification

Product identifier	DILUANT GALVA ZN
Product code	DILUANT MAT
Other means of identification	2-Butanone. MEK. Ethyl Methyl Ketone.
Recommended use of the chemical and restrictions on use	Organic solvent used in industrial processes.
Manufacturer	AEROCHEM Inc. 50, rue Émilien-Marcoux suite #109 Blainville, Québec Canada J7C 0B5 Tél. 450-667-2376 1-877-267-2376 Téléc. 450-667-5302 www.aerochem.ca info@aerochem.ca
Emergency phone number	Canutec: 613-996-6666 QUEBEC ANTI-POISON CENTER AT 1-800-463-5060

2. Hazard identification

Summary	FLAMMABLE LIQUID! Keep away from heat, sparks and open flame. Avoid contact with skin, eyes and clothing. Do not breathe vapours, mists or aerosols. Do not ingest. If ingested consult physician immediately and show this Safety Data Sheet. Wear eye protection, gloves and other protective clothing that are adapted to the task being performed and the risks involved.

WHMIS 2015/OSHA HCS 2012/GHS

Flammable liquids (Category 2)
Eye irritation (Category 2A)
Specific target organ toxicity, single exposure, Narcotic effects (Category 3)

Other hazards which do not result in classification :
Acute toxicity, oral (Category 5)
Skin irritation (Category 3).

DANGER
H225: Highly flammable liquid and vapour
H319: Causes serious eye irritation
H336: May cause drowsiness or dizziness
H303: May be harmful if swallowed
H316: Causes mild skin irritation
P210: Keep away from heat, sparks, open flames and other ignition sources. No smoking.
P240: Ground or bond container and receiving equipment.
P242: Use only non-sparking tools.
P243: Take precautionary measures against static discharge.
P261: Avoid breathing mist, vapours and spray.
P264: Wash skin thoroughly after handling.

P271: Use only outdoors or in a well-ventilated area.
P280: Wear protective gloves, protective clothing and eye protection.
P301+330+331+P310: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER or physician.
P303+361+353: IF ON SKIN (or hair): Remove immediately all contaminated clothing. Rinse skin with water and soap or take a shower if necessary.
P332+313: If skin irritation occurs: Get medical advice or attention.
P304+340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305+351+338: IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.
P337+313: If eye irritation persists: Get medical advice or attention.
P370+378: In case of fire: Use chemical foam, dry chemical or carbon dioxide to extinguish.
P403+P235+P233: Store in a well-ventilated place. Keep container tightly closed. Keep cool.
P501: Dispose of contents and container to an approved waste disposal plant.

TM/MD

3. Composition/information on ingredients

Common name	CAS	Weight % content
Methyl ethyl ketone	78-93-3	90-100 %

4. First-aid measures

Inhalation	Move person to fresh air. If not breathing, give artificial respiration. Do not use mouth-to-mouth resuscitation unless you use a buccal protective device. If breathing is difficult, give oxygen by trained personnel. If a problem develops or persists, seek medical attention.
Skin contact	Flush with water for at least 15 minutes. Remove contaminated clothing and wash before reuse. Avoid touching eyes with contaminated body parts. If a problem develops or persists, seek medical attention.
Eye contact	IMMEDIATELY flush with plenty of water. Remove contact lenses if easy to do. Flush with water for at least 15 minutes. Hold eyelids apart to rinse properly. Seek medical attention immediately.
Ingestion	DO NOT induce vomiting, unless recommended by medical personnel. Never give anything by mouth if victim is unconscious or convulsing. If spontaneous vomiting occurs, keep head below hip level to prevent aspiration into the lungs. Seek medical attention or contact a Poison Centre immediately.
Other	No information available.
Symptoms	May cause eye irritation. Inhalation of vapours may cause central nervous system depression such as drowsiness, headache, dizziness, vertigo, nausea and fatigue. May cause dry skin.
Notes to the physician	Treat symptomatically. If gastric lavage is performed, suggest endotracheal and/or esophageal control. Danger from lung aspiration must be weighed against toxicity when considering emptying the stomach. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

5. Fire-fighting measures

Suitable extinguishing media	Powder carbon dioxide (CO2), alcohol resistant foam, Do not use a heavy water jet.
Specific hazards arising from the chemical	Highly flammable liquid and vapour. Vapours are heavier than air and may travel to an ignition source distant from the material handling point. May be ignited by heat, sparks, flame or static electricity. Contact with strong oxidizers may cause fire. In a fire or if heated, a pressure increase will occur and the container may burst. Emits toxic fumes under fire conditions.
Special protective equipment	Firefighters must wear self contained breathing apparatus with full face mask. Firefighting suit may not be efficient against chemicals.
	Use water spray to cool fire-exposed containers. Water stream can scatter and spread fire.

Special protective actions for fire-fighters	

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Do not touch spilled material. Make sure to wear personal protective equipment mentioned in this Safety Data Sheet.
Environmental precautions	Prevent entry into sewers, closed areas and release to the environment. For a large spill, consult the Department of Environment or the relevant authorities.
Methods and materials for containment and cleaning up	No action shall be taken involving any personal risk or without suitable training. Evacuate unauthorized personnel. Remove sources of ignition. Ventilate the area well. Stop leak, if it's possible to do so without risk. Make sure you have a fire extinguisher near you. Use non-sparking and antistatic tools. Absorb with inert material (soil, sand, vermiculite) or wipe up or scrape up and place in an appropriate waste disposal container clearly identified. Dispose via a licensed waste disposal contractor. Finish cleaning by rinsing with water contaminated surface.

7. Handling and storage

Precautions for safe handling	Keep away from heat, sparks and open flame. Avoid all sources of ignition. Avoid static electricity build up. Use non-sparking and antistatic tools. Ground/bond all containers when transfering large quantities (5 gallons US or 20 L and more). Use only in well ventilated area. Do not breathe vapours, mists or aerosols. Avoid contact with skin, eyes and clothing. Make sure to wear personal protective equipment mentioned in this Safety Data Sheet. Keep only the quantities necessary for the work being performed in the work area. Keep containers tightly closed when not in use. Do not eat, do not drink and do not smoke during use. Wash hands, forearms and face thoroughly after handling this compound and before eating, drinking or using toiletries. Remove contaminated clothing and wash before reuse.
Conditions for safe storage, including any incompatibilities	Storage and handling should follow the NFPA 30 Flammable and/or Combustible Liquids Code and the National Fire Code of Canada (NFCC). Ground or bond large containers. Store tightly closed and in properly labelled containers in a cool, dry and well ventilated place. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Store away from oxidizing materials and incompatible materials (see section 10).
Storage temperature	15 to 20°C (59 to 68°F)

8. Exposure controls/personal protection

Immediately Dangerous to Life or Health	Methyl ethyl ketone: 3000 ppm.

Methyl ethyl ketone	STEL	100 ppm		BC
		100 ppm	300 mg/m^3	RSST
		300 ppm		ACGIH , ON
		300 ppm	885 mg/m^3	AB
	TWA (8h)	50 ppm		BC
		50 ppm	150 mg/m^3	RSST
		200 ppm		ACGIH , ON
		200 ppm	590 mg/m^3	AB

Appropriate engineering controls	Provide sufficient mechanical ventilation (general or local exhaust) to keep the airborne concentrations of vapours, mists, aerosols or dust below their respective occupational exposure limits.

	Use an explosion proof mechanical ventilation. Ensure that eyewash stations and safety showers are close to the workstation.
Individual protection measures	
Eye	If there is a risk of contact with eyes, wear chemical splash goggles. If risk of contact with eyes or the face wear chemical splash goggles and a face shield. If respiratory hazards exist, a full face respirator may be required instead.
Hands	Chemical-resistant, impervious gloves should be worn at all times when handling this chemical product. Wear Neoprene gloves, butyl rubber gloves, polyvinyl alcohol (PVA) gloves or laminate multilayer gloves made of Polyethylene and Ethylene Vinyl Alcohol copolymer. Before using, user should confirm impermeability. Discard gloves with tears, pinholes, or signs of wear. Gloves must only be worn on clean hands. Wash gloves with water before removing them. After using gloves, hands should be washed and dried thoroughly. DO NOT wear nitrile or PVC gloves.
Skin	Personal protective equipment for the body should be selected based on the task being performed and the risks involved. Wear appropriate chemical impervious clothing. Wear a lab coat in synthetic frabrics. Wear a neoprene or synthetic apron to prevent contact with skin. Synthetic polyethylene coveralls such as the Tychem (DuPont) or equivalent coveralls manufactured to provide protection against liquid chemicals should be worm, if necessary.
Respiratory	Where the conditions in the workplace require a respirator, it is necessary to follow a respiratory protection program. Moreover, respiratory protection equipment (RPE) must be selected, fitted, maintained and inspected in accordance with regulations and standard 29 CFR 1910.134 (OSHA), ANSI Z88.2 or CSA Z 94.11 (Canada) and approved by NIOSH/MSHA. In case of insufficient ventilation or in confined or enclosed space and for an assigned protection factor (APF) up to 10 times of exposure limit, wear a half mask respirator with organic vapour cartridges. For an APF until maximum 100 times of exposure limit, wear a full face mask respirator with organic vapour cartridges.
Feet	Wear rubber boots to clean up a spill.

Goggles

Neoprene gloves (thin)

9. Physical and chemical properties

Physical state	Liquid	**Flammability**	Flammable.
Colour	Colourless	**Flammability limits**	1.8 to 11.5%
Odour	Ketone	**Flash point**	-4°C (24.8°F) Closed Cup
Odour threshold	5.4 to 16 ppm	**Auto-ignition temperature**	515°C (959°F)
pH	N/Ap.	**Sensibility to electrostatic charges**	Yes
Melting point	-86°C (-122.8°F)	**Sensibility to sparks and/or friction**	N.Av.
Freezing point	-86°C (-122.8°F)	**Vapour density**	2.4 @ 20°C (68°F) (Air = 1)
Boiling point	79 to 80°C (174.2 to 176°F)	**Relative density**	0.806 kg/L @ 20°C (68°F) (Water = 1)
Solubility	Soluble in water. 275 g/L @20	**Partition coefficient n-octanol/water**	0.29 @ 20°C (68°F)
Evaporation rate	> Butyl Acetate	**Decomposition temperature**	N/Av.

Vapour pressure	9.5 to 10.3kPa (71.3 to 77.3 mm Hg) @ 20°C (68°F)	**Viscosity**	0.52 cSt @ 15°C (59°F)
Percent Volatile	100%	**Molecular mass**	77.1
N/Av.: Not Available N/Ap.: Not Applicable Und.: Undetermined N/E: Not Established			

10. Stability and reactivity

Reactivity	Attacks some plastics and rubber.
Chemical stability	Stable under recommended storage conditions. On long term storage, peroxides of unknown stability may form.
Possibility of hazardous reactions (including polymerizations)	A dangerous reaction will not occur.
Conditions to avoid	Avoid heat, flame and sparks. Avoid contact with incompatible substances.
Incompatible materials	Strong oxidants, strong acids, strong bases, isocyanates, amines, ammonia (NH_3), hydrogen peroxide, nitric acid (HNO_3), organic halogens.
Hazardous decomposition products	Methyl ethyl ketone can undergo a slow oxidative decomposition in air and light and form methyl ethyl ketone peroxide. Thermal decomposition: carbon oxides (CO, CO_2).

11. Toxicological information

Numerical measures of toxicity	Methyl ethyl ketone	Ingestion	2737 mg/kg	Rat	LD50
		Inhalation	32.5 mg/l/4h	Rat	LC50
		Skin	6480 mg/kg	Rabbit	LD50

Likely routes of exposure	Skin, eyes, inhalation, ingestion.	
Delayed, immediate and chronic effects	**Eye contact**	Eye Irritation, Rabbit: Test method (OECD, limit test) - Test de Draize, 39 at 1-2 days; 21 at 7-14 days; moderately to severely irritating. Causes serious eye irritation.
	Skin contact	Skin Irritation/Corrosion, Rabbit : Test method (OECD, limit test) - Test de Draize, 400-500 mg/24 hr, mild to moderately irritating. Skin sensitisation, Hartley test, Albino Guinea pig : not sensitizing. May cause slight irritation of the skin. Prolonged and repeated contact may cause skin drying, cracking or irritation. redness, defatting dermatitis.
	Inhalation	Concentration threshold of irritation in humans: from 100 ppm. High concentrations may cause central nervous system depression characterized by headache, dizziness, nausea, fatigue, drowsiness, unconsciousness. The severity of symptoms may vary depending on exposure conditions.
	Ingestion	May cause gastrointestinal irritation with nausea and vomiting. Ingestion of large amounts may cause depression of the central nervous system characterized by headache, dizziness, convulsions and loss of consciousness.
	IARC/NTP Classification	No ingredients listed.
	Carcinogenicity	Not listed as a carcinogen by IARC, ACGIH, NIOSH, NTP or OSHA.
	Teratogenicity	Many studies by inhalation exposure (1000 to 3000 ppm) of pregnant rats and mice concluded that MEK was not embryotoxic or teratogenic and only slightly fetotoxic. Cross the placental barrier in humans. Data do not allow an adequate assessment of the postnatal effect.
	Mutagenicity	This material is not known to cause mutagenic effect.
	Reproductive toxicity	This material is not known to cause effects on reproduction.
	Immunotoxicity	No information available.

Interactive effects	Ethanol, n-hexane, m-xylene. chloroform, carbon tetrachloride, ethyl n-butyl ketone, hexanedionne-2,5.
Other information	Target organs: Skin, eyes. respiratory system, central nervous system, peripheral nervous system.

12. Ecological information

Ecological toxicity	Fish - Fathead minnow, Pimephales promelas - fresh water	LC50	3600 mg/L; 96 hr (Methyl ethyl ketone)
	Aquatic Invertebrate - Daphnia magna	EC50	5091 mg/L; 48 hr (Methyl ethyl ketone)
Persistence	No persistent.		
Degradability	Biodegradable in 10 days. Biochemical Oxygen Demand (BOD): 5 days - 76%. The product in air rapidly is decomposed by photochemical processes, mainly through oxidation by hydroxyl free radicals as well as some decomposition by direct photolysis.		
Bioaccumulative potential	No bioaccumulation. Bioconcentration Factor (BCF) from 0.5 to 1. log Kow of 0.29.		
Mobility in soil	Soluble in water. Materials evaporates moderately from water. Distribution air, water, soil and sediment: 13.8%/ 49.1%/ 37%/ 0.08%.		
Other adverse effects	Low toxicity for aquatic organisms. Volatile organic chemical (VOC) compounds have the potential to form ozone and other air pollutants in near surface atmosphere (smog).		

13. Disposal considerations

Container 	Important! Prevent waste generation. Use in full. DO NOT dispose residue in sewers, streams or drinking water supply. Residues and empty containers must be considered as hazardous waste. Organic solvents and wastes residues can be reprocessed (recycle) where there is a recovery program. Dispose via a licensed waste disposal contractor. Observe all federal, state/provincial and municipal regulations. If necessary consult the Department of Environment or the relevant authorities.

14. Transport information

UN Number	UN 1193
UN Proper Shipping Name	METHYL ETHYL KETONE
Environmental hazards	This material is not listed as a marine pollutant.
Special precautions for user	Permit required for transportation with proper placards displayed on vehicle. Exemption available: LTD QTY according to TDG Canada - art. 1.17; Mode of transportation: rail, sea and road, applicable for Canadian domestic shipments. Quantitative limits: applicable for domestic containers (plastic bottles, glass or metal) containing =< 5 L each.

TDG - Transportation of Dangerous Goods (Canada)	
Transport hazard class(es)	 Class 3
Packing group	II

Emergency response guidebook 2016	
IMO/IMDG - International Maritime Transport	
Classification	Regulated UN 1193. Class 3, PG II. Emergency schedules (EmS-No) F-E, S-D
IATA - International Air Transport Association	
Classification	Regulated UN 1193. Class 3, PG II.

These transportation classifications are provided as a customer service. As the shipper YOU remain responsible for complying with all applicable laws and regulations, including proper transportation classification and packaging. In addition, if a domestic exemption exists, it is the responsibility of the shipper to define the application of it.

15. Regulatory information

Other regulations

CANADA :
- Canada DSL and NDSL:
This product is on the Domestic Substances List (DSL).
- List of Toxic Substances Managed Under CEPA 1999 (annexe 1, Canadian Environmental Protection Act):
This material is listed.
- Canadian National Pollutant Release Inventory Substances (NPRI):
Methyl ethyl ketone (CAS no. 78-93-3).
UNITED STATE OF AMERICA:
- Toxic Substance Control Act (TSCA) :
This material is listed.
- SARA 311/312 MSDS distribution - chemical inventory - hazard identification:
This material is not listed.
- CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act):
Methyl ethyl ketone (CAS no. 78-93-3).
Reportable Quantity of 5000 Lbs.
- Clean Air Act (CAA 112b) HAP - Hazardous Air Pollutants:
This material is listed.
- Clean Air Act (CAA 112b) HON - Hazardous Organic National Emission Air Pollutants:
Methyl ethyl ketone (CAS no. 78-93-3).
- Clean Water Act (CWA) 311 Hazardous Substances:
This material is not listed.
- California Proposition 65:
This material is not listed.

WHMIS 1988

B2 D2B

Class B2 : Flammable Liquid
Class D2B : Toxic material causing other toxic effects

HMIS

NFPA

16. Other information

Date (YYYY-MM-DD)	AEROCHEM INC. 2017-09-05
Version	01
Other information	REFERENCES: - Haz-Map, Information on Hazardous Chemicals and Occupational Diseases, http://hazmap.nlm.nih.gov/index.php - OECD Existing Chemicals Database, Chemicals Screening Information DataSet (SIDS) for High Volume Chemicals, UNEP publications, http://webnet.oecd.org/HPV/UI/Search.aspx - Service du répertoire toxicologique de la Commission des normes, de l'équité, de la santé et de la sécurité du travail (CNESST), http://www.reptox.csst.qc.ca - Butanone ou Méthyléthylcétone, Fiche Toxicologique FT14, Institut National de Recherche et de Sécurité, http://www.inrs.fr - IPCS INCHEM, Chemical Safety Information from Intergovernmental Organizations, Canadian Centre for Occupational Health and Safety (CCOHS), Copyright International Programme on Chemical Safety (IPCS), http://www.inchem.org - NIOSH Pocket Guide to Chemical Hazards, Centers for Disease Control and Prevention, NIOSH Publications, 2007, http://www.cdc.gov/niosh/npg/npg.html - Toxicological Review, Integrated Risk Information System (IRIS), USA Environment Protection Agency, www.epa.gov/iris - IUCLID Chemical Dataset, European Chemical Substances Information System (ESIS), Joint Research Centre, http://esis.jrc.ec.europa.eu ACGIH: American Conference of Governmental Industrial Hygienists AIHA: American Industrial Hygiene Association HMIS: Hazardous Materials Identification System NFPA: National Fire Protection Association OSHA: Occupational Safety and Health Administration (USA) NIOSH: National Institute for Occupational Safety and Health NTP: National Toxicology Program RSST: Règlement sur la santé et la sécurité du travail (Québec) GHS: Globally Harmonized System IARC: International Agency for Research on Cancer IDLH: Immediately Dangerous to Life or Health STEL: Short Term Exposure Limit (15 min) TWA: Time Weighted Averages WHMIS: Workplace Hazardous Materials Information System

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Une vision globale de la prévention!

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