


## 1. Identification

<b>Product identifier</b>	AERO 2015
<b>Product code</b>	AE2015500GDZ.
<b>Other means of identification</b>	AERO 2015, aerosol. This SDS sheet is not for the product AERO 2015 in liquid format.
<b>Recommended use of the chemical and restrictions on use</b>	Industrial solvent, cleaner, degreaser. Professional Use Only.
<b>Manufacturer</b>	AEROCHEM Inc. 5977 Trans Canada Highway Pointe-Claire, QC H9R 1C1 Canada Tel. 514-630-2800 General Information: 1-888-592-5837 Fax 514-630-2828 www.aerochem.ca
<b>Emergency phone number</b>	Quebec Poison Center: 1-800-463-5060 (toll free in QC) Ontario and Manitoba Poison Centres: 1-800-268-9017 or 419-813-5900 BC Drug and Poison Information Centre: 1-800-567-8911 (toll free in BC) or contact your local poison control centre in the state/province or territory where you live. INFOTRAC® 1-800-535-5053. International call collect: 1-352-323-3500 24 hours/day, 7 days/week.

## 2. Hazard identification

<b>Summary</b>	Non-flammable aerosol. Content under pressure, do not puncture, cut, heat or throw container into the flames. Do not breathe vapours, mists or aerosols. Avoid contact with eyes. Wear eye protection, gloves and other protective clothing that are adapted to the task being performed and the risks involved.
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### WHMIS 2015/OSHA HCS 2012/GHS

	Acute toxicity, oral (Category 4) Acute toxicity, inhalation (Category 4) Eye irritation (Category 2B) Specific target organ toxicity, single exposure (Category 3)
	<b>Other hazards which do not result in classification :</b> Flammable aerosols (Category 3). Long-term hazard to the aquatic environment (Category 3).

### WARNING

H229: Pressurized container: may burst if heated  
H302 + H332: Harmful if swallowed or if inhaled  
H320: Causes eye irritation  
H336: May cause drowsiness or dizziness  
H412: Harmful to aquatic life with long lasting effects  
P210: Keep away from heat, sparks, open flames and other ignition sources. No smoking.  
P251: Do not pierce or burn, even after use.  
P261: Avoid breathing vapours, mist and spray.

P264: Wash skin thoroughly after handling.  
 P270: Do not eat, drink or smoke when using this product.  
 P271: Use only outdoors or in a well-ventilated area.  
 P273: Avoid release to the environment.  
 P301+312+P330: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. Rinse mouth.  
 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.  
 P403: Store in a well-ventilated place.  
 P405: Store locked up.  
 P410+412: Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F.  
 P501: Dispose of contents to an approved waste disposal plant.

### 3. Composition/information on ingredients

Common name	CAS	Weight % content
trans-Dichloroethylene	156-60-5	64 - 79 %
1,1,1,2-Tetrafluoroethane	811-97-2	19 - 21 %
Fluorocarbon	Proprietary 22	1 - 16 %

### 4. First-aid measures

<b>Inhalation</b>	Move person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen by trained personnel. If a problem develops or persists, seek medical attention.
<b>Skin contact</b>	Wash skin with warm water and mild soap. Remove contaminated clothing and wash before reuse. If a problem develops or persists, seek medical attention.
<b>Eye contact</b>	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. If a problem develops or persists, seek medical attention.
<b>Ingestion</b>	DO NOT induce vomiting, unless recommended by medical personnel. If victim is conscious wash out mouth with plenty of water. 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.
<b>Other</b>	No information available.
<b>Symptoms</b>	May cause redness and irritation to eyes. Inhalation of vapours may cause central nervous system depression such as drowsiness, headache, dizziness, vertigo, nausea and fatigue. May cause dry skin and slight irritation.
<b>Notes to the physician</b>	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

<b>Suitable extinguishing media</b>	Dry chemicals, water spray, chemical foam, carbon dioxide (CO <sub>2</sub> ).
<b>Specific hazards arising from the chemical</b>	Content under pressure, containers may explode under fire conditions. According to the method prescribed by the Hazardous Products Regulations SOR/2015-17 and with sub-section 31.4 Ignition Distance Test for Spray Aerosols and 31.5 Enclosed Space Ignition Test of Part III of the Manual of Tests and Criteria of United Nation, this aerosol is not flammable. The ignition distance is <15 cm; the time equivalent needed to achieve ignition is >300 s/m <sup>3</sup> ; the deflagration density is >300 g/m <sup>3</sup> .

<b>Special protective equipment</b>	Firefighters must wear self contained breathing apparatus with full face mask. Firefighting suit may not be efficient against chemicals.
<b>Special protective actions for fire-fighters</b>	Use water spray to cool fire-exposed containers.

## 6. Accidental release measures


<b>Personal precautions, protective equipment and emergency procedures</b>	Do not touch spilled material. Make sure to wear personal protective equipment mentioned in this Safety Data Sheet.
<b>Environmental precautions</b>	Prevent product from entering drains and release to the environment.
<b>Methods and materials for containment and cleaning up</b>	Ventilate the area well. Remove sources of ignition. Allow propellant gas to evaporate. Absorb with inert material (soil, sand, vermiculite) or wipe with a cloth and place in an appropriate waste disposal container clearly identified.

## 7. Handling and storage

<b>Precautions for safe handling</b>	Content under pressure, do not puncture, cut, heat or throw container into the flames. Keep away from heat and open flame. Use only in well ventilated area. Do not breathe vapours, mists or aerosols. Avoid contact with skin, eyes and clothing. Wear eye protection, gloves and other protective clothing that are adapted to the task being performed and the risks involved. Keep only the quantities necessary for the work being performed in the work area. 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.
<b>Conditions for safe storage, including any incompatibilities</b>	Keep in properly labelled containers. Store away from oxidizing materials and incompatible materials (see section 10). Keep away from direct sunlight and heat.
<b>Storage temperature</b>	<49° C (120.2° F)

## 8. Exposure controls/personal protection

<b>Immediately Dangerous to Life or Health</b>	Trans-Dichloroethylene: 1000 ppm.			
trans-Dichloroethylene	TWA (8h)	200 ppm		ACGIH , BC
		200 ppm	790 mg/m <sup>3</sup>	ON
		200 ppm	793 mg/m <sup>3</sup>	RSST
1,1,1,2-Tetrafluoroethane	TWA (8h)	1000 ppm		US AIHA
Fluorocarbon	TWA (8h)	500 ppm		Other
<b>Appropriate engineering controls</b>	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.			
<b>Individual protection measures</b>				
<b>Eye</b>	Wear safety glasses. If there is a risk of contact with eyes, wear chemical splash goggles.			
<b>Hands</b>	Wear nitrile or neoprene gloves. Disposable nitrile gloves can also be used, but discard after single use.			

<b>Skin</b>	Personal protective equipment for the body should be selected based on the task being performed and the risks involved. Wear normal work clothing covering arms and legs as required by employer code.
<b>Respiratory</b>	Respiratory protection is not required for normal use. 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.
<b>Feet</b>	No personal protection measure required.
 Safety glasses    Nitrile gloves	

## 9. Physical and chemical properties

<b>Physical state</b>	Aerosol (liquid)	<b>Flammability</b>	Non-flammable.
<b>Colour</b>	Colourless	<b>Flammability limits</b>	N/Av.
<b>Odour</b>	Slight	<b>Flash point</b>	N/Av.
<b>Odour threshold</b>	N/Av.	<b>Auto-ignition temperature</b>	N/Av.
<b>pH</b>	N/Av.	<b>Sensitivity to electrostatic charges</b>	No
<b>Melting point</b>	N/Av.	<b>Sensitivity to sparks and/or friction</b>	N/Av.
<b>Freezing point</b>	N/Av.	<b>Vapour density</b>	>1 (Air = 1)
<b>Boiling point</b>	-26.5 to 47°C (-15.7 to 116.6°F)	<b>Relative density</b>	1.2 to 1.29 kg/L (Water = 1)
<b>Solubility</b>	Insoluble (<1%) in water.	<b>Partition coefficient n-octanol/water</b>	N/Av.
<b>Evaporation rate</b>	> Ethyl Ether	<b>Decomposition temperature</b>	N/Av.
<b>Vapour pressure</b>	400 to 660kPa (3000 to 4950 mm Hg) @ 20°C (68°F)	<b>Viscosity</b>	N/Av.
<b>Percent Volatile</b>	100%	<b>Molecular mass</b>	N/Av.
N/Av.: Not Available    N/Av.: Not Applicable    Und.: Undetermined    N/E: Not Established			

## 10. Stability and reactivity

<b>Reactivity</b>	No information available.
<b>Chemical stability</b>	Stable under recommended storage conditions. Aerosol containers are unstable at temperatures above 49 °C.
<b>Possibility of hazardous reactions (including polymerizations)</b>	A dangerous reaction will not occur.
<b>Conditions to avoid</b>	Avoid temperatures over 49 °C. Avoid contact with incompatible materials.

<b>Incompatible materials</b>	Strong oxidizing agents (e.g. chlorine, fluorine, nitric acid, perchloric acid, peroxides, nitrates, chlorates, chromates, permanganates and perchlorates), strong reducing agents (e.g. potassium, sodium, lithium, metal hydrides), strong acids.
<b>Hazardous decomposition products</b>	Under normal conditions of storage and use, hazardous decomposition products should not be produced.


## 11. Toxicological information

<b>Numerical measures of toxicity</b>	<p>trans-Dichloroethylene    Ingestion 2122 mg/kg    Mouse LD50  1260 mg/kg    Rat    LD50  Inhalation 24100 ppm/4h    Rat    LC50  Skin &gt;5000 mg/kg    Rabbit LD50</p> <p>1,1,1,2-Tetrafluoroethane    Inhalation &gt;500000 ppm/4h    Rat    LC50  Fluorocarbon    Ingestion &gt;5000 mg/kg    Rat    LD50  Skin &gt;5000 mg/kg    Rat    LD50</p>
<b>Likely routes of exposure</b>	Skin, eyes, inhalation, ingestion.
<b>Delayed, immediate and chronic effects</b>	<p><b>Eye contact</b>    May cause redness and irritation to eyes. Human epidemiological studies have shown evidence of moderate irritation from trans-Dichloroethylene and rabbit eye irritation tests showed reversing irritation within 7 days.</p> <p><b>Skin contact</b>    May cause redness and slight irritation of the skin. Prolonged or repeated exposure can cause skin drying, defatting and dermatitis. Skin Irritation/Corrosion, Rabbit : tests performed with each ingredient of this mixture gave not irritating to slightly irritating results.</p> <p><b>Inhalation</b>    In the workplace, the product is rapidly absorbed by respiratory tract. Harmful if inhaled. Inhalation of vapours may cause central nervous system depression such as drowsiness, headache, dizziness, vertigo, nausea and fatigue. Inhalation in large amounts of 1,1,1,2-Tetrafluoroethane may cause asphyxiation. The severity of symptoms may vary depending on exposure conditions.</p> <p><b>Ingestion</b>    Harmful if swallowed. Ingestion of large amounts may cause depression of the central nervous system characterized by headache, dizziness, convulsions and loss of consciousness.</p> <p><b>Respiratory or skin sensitization</b>    Ingredients present at levels greater than or equal to 0.1% of this product are not skin or respiratory sensitizers.</p> <p><b>IARC/NTP Classification</b>    No ingredients listed.</p> <p><b>Carcinogenicity</b>    Ingredients present at levels greater than or equal to 0.1% of this product are not listed as a carcinogen by IARC, ACGIH, NIOSH, NTP or OSHA.</p> <p><b>Mutagenicity</b>    Ingredients in this product present at levels greater than or equal to 0.1% are not known to cause mutagenic effects.</p> <p><b>Reproductive toxicity</b>    Ingredients in this product present at levels greater than or equal to 0.1% are not known to cause mutagenic effects.</p> <p><b>Specific target organ toxicity - single exposure</b>    Central nervous system.</p> <p><b>Specific target organ toxicity - repeated exposure</b>    No target organ is listed.</p>
<b>Interactive effects</b>	No information available.
<b>Other information</b>	No additional information.

## 12. Ecological information

<b>Ecological toxicity</b>	Fish - <i>Oncorhynchus mykiss</i> - Rainbow trout	LC50	450 mg/L; 96h (1,1,1,2-Tetrafluoroethane)
	Aquatic Invertebrate - <i>Daphnia magna</i>	EC50	980 mg/L; 48h (1,1,1,2-Tetrafluoroethane)
	Algae, <i>Pseudokirchneriella subcapitata</i>	EC50	159 mg/L; 96h (1,1,1,2-Tetrafluoroethane)
	Fish - <i>Lepomis macrochirus</i> - Bluegill	LC50	74 mg/L; 96h (trans-Dichloroethylene)
	Aquatic Invertebrate - <i>Daphnia magna</i>	EC50	79 mg/L; 48h (trans-Dichloroethylene)
	Algae, <i>Pseudokirchneriella subcapitata</i>	EC50	798 mg/L; 96h (trans-Dichloroethylene)
	Fish - <i>Oryzias latipes</i>	LC50	no toxicity at saturation in water (Proprietary Fluorocarbon)
	Aquatic Invertebrate - <i>Daphnia magna</i>	EC50	no toxicity at saturation in water (Proprietary Fluorocarbon)
	Algae, <i>Pseudokirchneriella subcapitata</i>	EC50	no toxicity at saturation in water (Proprietary Fluorocarbon)
<b>Persistence</b>	Persistent in the environment.		
<b>Degradability</b>	Trans-Dichloroethylene is not biodegradable. Degradation by BOD (O <sub>2</sub> consumption) was reported as 0 % in 28 days using an activated sludge inoculum at 2.32 mg/L (TOXNET Databases). trans-Dichloroethylene is degraded in the atmosphere by reaction in gas phase with hydroxyl radicals, ozone and nitrate radical. Direct photodegradation is not expected to play an important role (TOXNET Databases). Degradation of tetrafluoroethane in the atmosphere is slow. The major degradation process for tetrafluoroethane in the atmosphere is oxidation. It has low reactivity towards indirect photo-oxidation by hydroxyl radicals in the troposphere, with an estimated lifetime of 14.3 years for this reaction. Inherent Biodegradability (OECD 302) gave 39.5% of biodegradation for Proprietary Fluorocarbon.		
<b>Bioaccumulative potential</b>	Trans-Dichloroethylene has a Bioconcentration Factor (BCF) value of 11, and its Log Kow value is 2.09, indicating its potential to bioaccumulate is low (TOXNET Databases). Based on the measured partition coefficient Log Kow of 1.06, Tetrafluoroethane is expected to have a low potential for bioaccumulation in the environment. Proprietary Fluorocarbon has Bioconcentration Factor (BCF) value of 1990, indicating that the substance has potential to bioaccumulate.		
<b>Mobility in soil</b>	The estimated Koc value of 59 suggests that trans-dichloroethylene is expected to have high mobility in soil (TOXNET Databases). Tetrafluoroethane is expected to mainly partition to the atmosphere when released with minor partitioning to soil.		
<b>Other adverse effects</b>	This chemical does not deplete the ozone layer. Tetrafluoroethane does not deplete the ozone layer, but it does have a high global warming potential.		

## 13. Disposal considerations

	Important! Prevent waste generation. Use in full. DO NOT puncture, cut, heat or burn container, even after use. Depressurize empty container (empty it of its propellant). Empty containers can be treated (recycled) where there is a recovery program. Observe all federal, state/provincial and municipal regulations. If necessary consult the Department of Environment or the relevant authorities.
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## 14. Transport information

<b>UN Number</b>	UN 1950
<b>UN Proper Shipping Name</b>	AEROSOLS
<b>Environmental hazards</b>	This material is not listed as a marine pollutant.

<b>Special precautions for user</b>	Permit required for transportation with proper DANGER 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 aerosol cans containing =< 1L each.
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### TDG - Transportation of Dangerous Goods (Canada)

<b>Transport hazard class(es)</b>	 Class 2.2
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<b>Packing group</b>	
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<b>Emergency response guidebook 2016</b>	<u>126</u>
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### IMO/IMDG - International Maritime Transport

<b>Classification</b>	UN 1950. Aerosol Class 2.2, Emergency schedules (EmS-No) F-D, S-U
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### IATA - International Air Transport Association

<b>Classification</b>	UN 1950. AEROSOLS, NON-FLAMMABLE. Class 2.2.
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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

### CANADA

Common name	CAS	CEPA	DSL	NDSL	NPRI
trans-Dichloroethylene	156-60-5	X	X		X
1,1,1,2-Tetrafluoroethane	811-97-2		X		
Fluorocarbon	Proprietary 22			X	

- CEPA: List of Toxic Substances Managed Under Canadian Environmental Protection Act
- DSL: Domestic Substances List Inventory
- NDSL: Non-Domestic Substances List Inventory
- NPRI: National Pollutant Release Inventory Substances

### UNITED STATE OF AMERICA

Common name	CAS	TSCA	CER CLA	EPCRA 313	EPCRA 302/304	CAA 112(b) HON	CAA 112(b) HAP	CAA 112(r)	CWA 311	CWA Prio.
trans-Dichloroethylene	156-60-5	X	X							X
1,1,1,2-Tetrafluoroethane	811-97-2	X								
Fluorocarbon	Proprietary 22	X								

- TSCA: Toxic Substance Control Act
- CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act list of hazardous substances
- EPCRA 313: Emergency Planning and Community Right-to-Know Act, Section 313 Toxic Chemicals
- EPCRA 302/304: Emergency Planning and Community Right-to-Know Act, Section 302/304 Extremely Hazardous Substances
- CAA 112(b) HON: Clean Air Act - Hazardous Organic National Emission Standard for Hazardous Air Pollutant
- CAA 112(b) HAP: Clean Air Act - Hazardous Air Pollutants lists pollutants
- CAA 112(r): Clean Air Act - Regulated Chemicals for Accidental Release Prevention
- CWA 311: Clean Water Act - List of Hazardous Substances
- CWA Priority: Clean Water Act - Priority Pollutant list

## California Proposition 65

No ingredients listed.

### Other regulations

#### WHMIS 1988



A

Class A : Compressed Gas

#### HMIS



#### NFPA



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## 16. Other information

**Date**  
(YYYY-MM-DD)

AEROCHEM Inc. 2017-08-24

**Version**

02

**Other information**

#### REFERENCES:

- Haz-Map, Information on Hazardous Chemicals and Occupational Diseases, <http://hazmap.nlm.nih.gov/index.php>
- TOXNET Databases, Toxicology Data Network, NIH U.S. National Library of Medicine, <http://toxnet.nlm.nih.gov/>
- 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>
- OECD Existing Chemicals Database, Chemicals Screening Information DataSet (SIDS) for High Volume Chemicals, UNEP publications, <http://webnet.oecd.org/HPV/UI/Search.aspx>
- 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>

#### DATE OF FIRST VERSION OF SDS:

2015-03-14.

#### CHANGES MADE IN THE VERSION 02:

section 15.

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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