

MATERIAL SAFETY DATA SHEET**SECTION 1: IDENTIFICATION**

Product identifier : **AIR BRAKE ANTI-FREEZE**

Product Use : Prevention of frozen lines, and corrosion of metals, in heavy duty air brake systems.

Chemical Family : Mixture.

Manufacturer part no. : M2832, M2834, M2832C, M2832/6C, M2834C

Supplier's name and address:
Radiator Specialty Co., of Canada
1711 Aimco Blvd.
Mississauga, ON, Canada
L4W 1H7

Manufacturer's name and address:
Refer to Supplier

Information Telephone # : (905) 625-9117 (Monday - Friday, 9AM - 5PM)

24 Hr. Emergency Tel # : 613-996-6666 (CANUTEC)

SECTION 2 - HAZARDS IDENTIFICATION

Classification : WHMIS information: This product is a WHMIS Controlled Product. It meets one or more of the criteria for a controlled product provided in Part IV of the Canadian Controlled Products Regulations (CPR).
WHMIS classification:
Class B2 (Flammable Liquids);
Class D1B (Materials Causing Immediate and Serious Toxic Effects, Toxic Material);
Class D2A (Materials Causing Other Toxic Effects, Very Toxic Material);
Class D2B (Materials Causing Other Toxic Effects, Toxic Material).

Labelling: Phrases recommended to appear on a supplier label, can be found in Section 15.

WHMIS symbols required on a supplier label:



Emergency Overview : Clear, colourless liquid. Mild alcohol odour.
WARNING! Flammable liquid and vapour. Vapour may cause flash fire! Burns with colourless flame. POISON! May be fatal or cause blindness if swallowed in sufficient quantities. Harmful by inhalation and in contact with skin. May cause nausea, vomiting, headache and other central nervous system effects. Causes eye irritation. May cause respiratory irritation. Prolonged or repeated skin contact may cause drying and irritation. May be an aspiration hazard. Possible birth defect hazard - contains material that may cause birth defects, based on animal data.

POTENTIAL HEALTH EFFECTS:**Signs and symptoms of short-term (acute) exposure**

- Inhalation* : May cause irritation to the nose, throat and upper respiratory tract. Symptoms may include pain, headache, nausea, vomiting, dizziness, drowsiness and other central nervous system effects. Affected person could experience a latent period of no symptoms, followed by blurred vision and possibly blindness.
- Skin* : Direct skin contact may result in little or no irritation. May be absorbed and cause symptoms similar to those for inhalation.
- Eyes* : May cause mild to moderate irritation. May cause burning sensation, redness and tearing (watering).
- Ingestion* : May cause blindness if swallowed - cannot be made non-poisonous. May cause irritation of mouth, throat, and stomach. Symptoms may include pain, headache, nausea, vomiting, dizziness, drowsiness and other central nervous system effects. Affected person could experience a latent period of no symptoms, followed by blurred vision and possibly blindness. May result in unconsciousness and possibly death. May be an aspiration hazard. Aspiration into the lungs during swallowing or subsequent vomiting may cause chemical pneumonitis, which can be fatal.

Effects of long-term (chronic) exposure

- Carcinogenic status** : Prolonged or repeated contact may cause drying, cracking and defatting of the skin.
: See TOXICOLOGICAL INFORMATION, Section 11.

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Additional health hazards : May cause birth defects. See TOXICOLOGICAL INFORMATION, Section 11.**Potential environmental effects** : See ECOLOGICAL INFORMATION, Section 12.**SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS**

<u>Ingredients</u>	<u>CAS #</u>	<u>Wt.%</u>
Methyl alcohol	67-56-1	60.00 - 100.00

SECTION 4 - FIRST AID MEASURES

- Inhalation** : Immediately remove person to fresh air. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen by qualified medical personnel only. Seek immediate medical attention/advice.
- Skin contact** : Remove/Take off immediately all contaminated clothing. Wash off immediately with plenty of water for at least 15 minutes. Seek immediate medical attention/advice.
- Eye contact** : Immediately flush eyes with plenty of water for at least 15 minutes. Seek immediate medical attention/advice.
- Ingestion** : Call a physician or poison control centre immediately. Do not induce vomiting, unless directed to do so by qualified medical personnel. If vomiting occurs spontaneously, keep victim's head lowered (forward) to reduce the risk of aspiration. Never give anything by mouth to an unconscious person.
- Notes For Physician** : Treat symptomatically. Immediate medical attention is required. Contains methanol. Administration of ethanol can slow the metabolism of methanol, thus reducing the potential for harmful effects.

SECTION 5 - FIRE FIGHTING MEASURES

- Fire hazards/conditions of flammability** : Flammable liquid and vapour. Will ignite when exposed to heat, flame and other sources of ignition. Burns with colourless flame. Vapours are heavier than air and collect in confined and low-lying areas. Vapour can travel to ignition source and flash back. Closed containers may rupture if exposed to excess heat or flame due to a build-up of internal pressure.
- Oxidizing properties** : None known.
- Explosion data: Sensitivity to mechanical impact / static discharge** : May be sensitive to static discharge. Not expected to be sensitive to mechanical impact.
- Suitable extinguishing media** : Dry chemical, foam, carbon dioxide and water fog. Water may be ineffective because it may not cool product below the flashpoint.
- Special fire-fighting procedures/equipment** : Firefighters should wear proper protective equipment and self-contained breathing apparatus with full face piece operated in positive pressure mode. Move containers from fire area if safe to do so. Water spray may be useful in cooling equipment exposed to heat and flame.
- Hazardous combustion products** : Carbon oxides, formaldehyde and other irritating fumes and smoke.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

- Personal precautions** : All persons dealing with clean-up should wear the appropriate protective equipment including self-contained breathing apparatus. Keep all other personnel upwind and away from the spill/release. Restrict access to area until completion of clean-up.
- Environmental precautions** : Ensure spilled product does not enter drains, sewers, waterways, or confined spaces.
- Spill response/cleanup** : Ventilate area of release. Remove all sources of ignition. Use only non-sparking tools and equipment in the clean-up process. Contain and absorb spilled liquid with non-combustible, inert absorbent material (e.g. sand), then place absorbent material into a container for later disposal (see Section 13). Notify the appropriate authorities as required.
- Prohibited materials** : Do not use combustible absorbents, such as sawdust.

SECTION 7 - HANDLING AND STORAGE

- Safe Handling procedures** : Use in a well-ventilated area. Wear suitable protective equipment during handling. Do not ingest. Avoid breathing vapours. Avoid contact with skin, eyes and clothing. Keep away from heat, sparks, and open flames. Use proper bonding and grounding techniques when transferring liquid. Avoid contact with incompatible materials. Wash thoroughly after handling.
- Storage requirements** : Store in a cool, dry, well-ventilated area. Store away from incompatibles and out of direct sunlight. Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. Inspect periodically for damage or leaks. No smoking in the area.
- Incompatible materials** : Strong oxidizing agents; Acids; Reactive metals.
- Special packaging materials** : Always keep in containers made of the same materials as the supply container.

SECTION 8 - EXPOSURE CONTROLS AND PERSONAL PROTECTION

Exposure Limits

<u>Ingredients</u>	<u>ACGIH TLV</u>		<u>OSHA PEL</u>	
	<u>TWA</u>	<u>STEL</u>	<u>PEL</u>	<u>STEL</u>
Methyl alcohol	200 ppm (skin)	250 ppm (skin)	200 ppm (skin)	N/Av

- Ventilation and engineering measures** : Use general or local exhaust ventilation to maintain air concentrations below recommended exposure limits.
- Respiratory protection** : If the TLV is exceeded, a NIOSH/MSHA-approved respirator is advised. Advice should be sought from respiratory protection specialists.
- Skin protection** : Impervious gloves must be worn when using this product. Advice should be sought from glove suppliers.
- Eye / face protection** : Chemical splash goggles are recommended.
- Other protective equipment** : Wear resistant clothing and boots. An eyewash station and safety shower should be made available in the immediate working area.
- General hygiene considerations** : Handle in accordance with good industrial hygiene and safety practice for diagnostics. Do not eat, drink, smoke or use cosmetics while working with this product. Remove and wash contaminated clothing before re-use. Wash with soap and water after handling.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

- Physical state** : Liquid. **Appearance** : Clear colourless liquid.
- Odour** : Mild alcohol odour. **Odour threshold** : N/Av
- pH** : N/Av
- Boiling point** : 64.6°C **Specific gravity** : 0.7925 @ 20°C
- Melting/Freezing point** : - 97.8°C **Coefficient of water/oil distribution** : N/Av
- Vapour pressure (mmHg @ 20° C / 68° F)** : 96.0 **Solubility in water** : Complete
- Vapour density (Air = 1)** : 1.11 **Evaporation rate (n-Butyl acetate = 1)** : 2
- Volatile organic Compounds (VOC's)** : N/Av **Volatiles (% by weight)** : 100
- Flash point** : 12°C
- Flash point Method** : Tag closed cup **Auto-ignition temperature** : N/Av
- Lower flammable limit (% by vol.)** : 5.5 **Upper flammable limit (% by vol.)** : 36.5
- Flame Projection Length** : N/Av **Flashback observed** : N/Av
- Absolute pressure of container** : N/Av **Viscosity** : N/Av
- General Information** : No additional information.

Section 10: STABILITY AND REACTIVITY

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- Stability and reactivity** : Stable under the recommended storage and handling conditions prescribed.
- Hazardous polymerization** : Hazardous polymerisation does not occur.
- Conditions to avoid** : Avoid heat and open flame. Keep away from direct sunlight. Ensure adequate ventilation, especially in confined areas.
- Materials To Avoid And Incompatibility** : See Section 7 (Handling and Storage) for further details.
- Hazardous decomposition products** : None known, refer to hazardous combustion products in Section 5.

SECTION 11 - TOXICOLOGICAL INFORMATION

- Target organs** : Eyes, skin, respiratory system, digestive system, central nervous system.
- Routes of exposure** : *Inhalation:* YES *Skin Absorption:* YES *Skin & Eyes:* YES *Ingestion:* YES
- Irritancy** : Mild skin irritant. Mild to moderate eye irritant.
- Toxicological data** : There is no available data for the product itself, only for the ingredients. See below for individual ingredient acute toxicity data.

<u>Ingredients</u>	<u>LC₅₀(4hr)</u>	<u>LD₅₀</u>	
	<u>inh, rat</u>	<u>(Oral, rat)</u>	<u>(Rabbit, dermal)</u>
Methyl alcohol	64,000 ppm	5628 mg/kg	15,800 mg/kg

- Carcinogenic status** : No components are listed as carcinogens by ACGIH, IARC, OSHA or NTP.
- Reproductive effects** : Not expected to cause reproductive effects.
- Teratogenicity** : Contains Methanol. Methanol may cause fetotoxic and teratogenic effects, based on animal data. Effects were observed following inhalation of high concentrations of Methanol, at doses which were not maternally toxic.
- Mutagenicity** : Not expected to be mutagenic in humans.
- Epidemiology** : None known or reported by the manufacturer.
- Sensitization to material** : Not expected to be a skin or respiratory sensitizer.
- Synergistic materials** : None known or reported by the manufacturer.
- other important hazards** : CNS depression may result from extreme exposures.
- Conditions aggravated by overexposure** : Pre-existing skin, eye and respiratory disorders.

SECTION 12 - ECOLOGICAL INFORMATION

- Ecotoxicity** : The ecological characteristics of this product have not been fully investigated. The product should not be allowed to enter drains or water courses, or be deposited where it can affect ground or surface waters.
- Mobility** : No data is available on the product itself.
- Persistence** : No data is available on the product itself.
- Bioaccumulation potential** : No data is available on the product itself.
- Other Adverse Environmental effects** : No data is available on the product itself.

SECTION 13 - DISPOSAL CONSIDERATIONS

- Handling for Disposal** : Handle waste according to recommendations in Section 7. Do not cut, weld, drill or grind on or near this container. Empty containers retain residue (liquid and/or vapour) and can be dangerous.
- Methods of Disposal** : Dispose of in accordance with federal, provincial and local hazardous waste laws.

SECTION 14: TRANSPORT INFORMATION

Regulatory Information	UN Number	Shipping Name	Class	Packing Group	Label
TDG	UN1230	METHANOL	3(6.1)	II	 

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TDG Additional information	Document as Class 3 (6.1). May be shipped as LIMITED QUANTITY when transported in containers no larger than 1.0 Litre, in packages not exceeding 30 kg gross mass. Under the TDGR, refer to Section 1.17 for additional exemption information, if shipping under this exemption.
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SECTION 15 - REGULATORY INFORMATION**Labelling:**

WARNING! Flammable liquid and vapour Vapour may cause flash fire! Burns with colourless flame. POISON! May be fatal or cause blindness if swallowed in sufficient quantities. Harmful by inhalation and in contact with skin. May cause nausea, vomiting, headache and other central nervous system effects. Causes eye irritation. May cause respiratory irritation. Prolonged or repeated skin contact may cause drying and irritation. May be an aspiration hazard. Possible birth defect hazard - contains material that may cause birth defects, based on animal data.

PRECAUTIONS: Use in a well-ventilated area. Wear suitable protective equipment during handling. Do not ingest. Avoid breathing vapours. Avoid contact with skin, eyes and clothing. Keep away from heat, sparks, and open flames. Use proper bonding and grounding techniques when transferring liquid. Avoid contact with incompatible materials. Wash thoroughly after handling. Store in a cool, dry, well ventilated area, away from heat and ignition sources.

FIRST AID: If inhaled, move to fresh air. If breathing stopped, begin artificial respiration. If breathing is difficult, give oxygen by qualified medical personnel only. For skin contact, flush with water for at least 15 minutes, while removing contaminated clothing. For eye contact, flush with running water for at least 15 minutes. If swallowed, call a poison control centre or doctor immediately. Do not induce vomiting, unless directed to do so by qualified medical personnel. If vomiting occurs spontaneously, keep victim's head lowered (forward) to reduce the risk of aspiration. Never give anything by mouth to an unconscious person. For all cases, obtain medical attention immediately.

Refer To Material Safety Data Sheet for further information.

Canadian Information:

Canadian Environmental Protection Act (CEPA) information: All ingredients listed appear on the Domestic Substances List (DSL).

WHMIS information: Refer to Section 2 for a WHMIS Classification for this product.

This product has been classified according to the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR.

US Federal Information:


TSCA: All listed ingredients appear on the Toxic Substances Control Act (TSCA) inventory.

SECTION 16 - OTHER INFORMATION

Legend	: ACGIH: American Conference of Governmental Industrial Hygienists CAS: Chemical Abstract Services CNS: Central Nervous System HSDB: Hazardous Substances Data Bank IARC: International Agency for Research on Cancer Inh: Inhalation LC: Lethal Concentration LD: Lethal Dose MSHA: Mine Safety and Health Administration N/Ap: Not Applicable N/Av: Not Available NIOSH: National Institute of Occupational Safety and Health NTP: National Toxicology Program OSHA: Occupational Safety and Health Administration PEL: Permissible exposure limit RTECS: Registry of Toxic Effects of Chemical Substances STEL: Short Term Exposure Limit TDG: Canadian Transportation of Dangerous Goods Act & Regulations TLV: Threshold Limit Values TWA: Time Weighted Average WHMIS: Workplace Hazardous Materials Identification System
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- References** :
1. ACGIH, Threshold Limit Values for Chemical Substances and Physical Agents & Biological Exposure Indices for 2010.
 2. International Agency for Research on Cancer Monographs, searched 2010.
 3. Canadian Centre for Occupational Health and Safety, CCIInfoWeb databases, 2010 (Chempendium, HSDB and RTECs).
 4. Material Safety Data Sheets from manufacturer.

<p>Prepared for: Radiator Specialty Co. of Canada 1711 Aimco Blvd. Mississauga, ON, Canada, L4W 1H7 Telephone: 905-625-9117 (Mon. - Fri., 9 AM - 5 PM) Please direct all enquiries to Radiator Specialty.</p>	
<p>Prepared by: ICC The Compliance Center Inc. http://www.thecompliancecenter.com</p>	

DISCLAIMER OF LIABILITY

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: 08/05/2010

Revision No.

: 2

Revision Information

- : Sections 2 and 3, switched.
(M)SDS sections updated:
2. HAZARDS IDENTIFICATION;
 3. COMPOSITION/INFORMATION ON INGREDIENTS;
 5. FIRE-FIGHTING MEASURES;
 8. EXPOSURE CONTROLS / PERSONAL PROTECTION;
 9. PHYSICAL AND CHEMICAL PROPERTIES;
 11. TOXICOLOGICAL INFORMATION;
 12. ECOLOGICAL INFORMATION;
 15. REGULATORY INFORMATION.

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