SAFETY DATA SHEET

1. PRODUCT AND COMPANY IDENTIFICATION

This SDS is used for the following Arcot products:

Arcot #9622 FC-100 Freezer Cleaner & Ice Melter (previously Arcot #9620A FC-20)
Arcot #9644 AF-44 Concentrated Anti-Freeze Windshield Washer Fluid

Manufacturer: Arcot Manufacturing Corporation, 2950 Mowery Road, Houston, Texas, U.S.A. 77045
Emergency Response Telephone: 1-800-633-8253 (Account #9390)
Arcot Customer Service Telephone: 713-413-9700
Website: www.ArcotManufacturing.com

Recommended Use: Freezer Cleaner & Ice Melter
Restrictions on Use: Highly flammable. Read label and SDS carefully before handling or use.

2. HAZARDS IDENTIFICATION

GHS Classification:

Flammable liquids:	Category 2
Acute toxicity (Oral):	Category 3
Acute toxicity (Inhalation):	Category 3
Acute toxicity (Dermal):	Category 3
Eye irritation:	Category 2A
Specific target organ toxicity - single exposure:	Category 1 (Eyes, Central Nervous System)

GHS Label element

Hazard pictograms:

Signal Word: **DANGER**

Hazard statements:

H225: Highly flammable liquid and vapor.
H301: Toxic if swallowed.
H311: Toxic in contact with skin.
H331: Toxic if inhaled.
H319: Causes serious eye irritation.
H336: May cause drowsiness or dizziness.
H370: Causes damage to organs (Eyes, Central Nervous System).

Precautionary statements:

Prevention:

P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233: Keep container tightly closed.
P240: Ground container and receiving equipment.
P241: Use explosion-proof electrical, ventilating and lighting equipment.
P242: Use only non-sparking tools.
P243: Take precautionary measures against static discharge.
P261: Avoid breathing fumes, gas, mist, vapors or spray.
P264: Wash skin, face and mouth thoroughly after handling.
P270: Do not eat, drink or smoke when using this product.
P271: Use only outdoors or in a well-ventilated area.
P280: Wear protective gloves, protective clothing and eye protection or face protection.

Response:

P305 + P351 + P338 + P337 + P313: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.

P301 + P310 + P330: IF SWALLOWED: Immediately call a POISON CENTER or doctor. Rinse mouth.

P303 + P352 + P361 + P364: IF ON SKIN (or hair): Wash skin with plenty of water. Take off immediately all contaminated clothing and wash it before reuse.

P304 + P340 + P312: IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor if you feel unwell.

P308+311: IF exposed or concerned: Call a POISON CENTER or doctor.

P370 + P378: In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

Storage:

P233: Keep container tightly closed.
P235: Keep cool.
P403: Store in a well-ventilated place.
P405: Store locked up.

Disposal:

P501: Dispose of contents and container to an approved waste disposal plant in accordance with applicable local, state, federal and international regulations.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS #	Concentration (%)
Methanol	67-56-1	proprietary
Ethanol	64-17-5	proprietary
Isopropanol	67-63-0	proprietary
Water	7732-18-5	proprietary

Other ingredients are considered trade secrets. However, all hazardous aspects of the ingredients and of this mixture are considered and included. The exact percentage of composition has been withheld as a trade secret. This SDS is used for a group of substantially similar mixtures.

4. FIRST-AID MEASURES

General advice: Move out of dangerous area. Consult a physician. Show this safety data sheet to the doctor in attendance. Do not leave the victim unattended.

If inhaled: If unconscious place in recovery position and seek medical advice. If symptoms persist, call a physician. Administer oxygen or artificial respiration if needed.

In case of skin contact: If on skin, rinse well with water. If on clothes, remove clothes. If skin irritation persists, call a physician.

In case of eye contact: Immediately flush eyes for at least 15 minutes. Get medical attention. Remove contact lenses. Protect unharmed eye. Keep eye wide open while rinsing. If eye irritation persists, consult a specialist.

If swallowed: Keep respiratory tract clear. Do not give milk or alcoholic beverages. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician. Take victim immediately to hospital.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media: Alcohol-resistant foam, water spray, dry chemical, carbon dioxide (CO_2)

Unsuitable extinguishing media: High volume water jet

Specific hazards during firefighting: Do not allow run-off from firefighting to enter drains or water courses.

Hazardous combustion products: Carbon oxides, toxic fumes

Specific extinguishing methods: Use a water spray to cool fully closed containers.

Further information: Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. For safety reasons in case of fire, cans should be stored separately in closed containments.

Special protective equipment for firefighters: Wear self-contained breathing apparatus for firefighting if necessary.

NFPA Flammable and Combustible Liquids Classification: Flammable Liquid Class IB

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.

Environmental precautions: Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains, inform respective authorities.

Methods and materials for containment and cleaning up: Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local and national regulations (see section 13).

7. HANDLING AND STORAGE

Advice on safe handling: Avoid formation of aerosol. Do not breathe vapors. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Take precautionary measures against static discharges. Provide sufficient air exchange and/or exhaust in work rooms. Container may be opened only under exhaust ventilation hood. Open drum carefully as content may be under pressure. Dispose of rinse water in accordance with local and national regulations.

Conditions for safe storage: No smoking. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Observe label precautions. Electrical installations and working materials must comply with the technological safety standards.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters:

Cas-No.	Components	Value type (Form of exposure)	Control Parameters / Permissible concentration	Basis
67-56-1	Methanol	TWA	200 ppm	ACGIH
		STEL	250 ppm	ACGIH
		TWA	200 ppm 260 mg/m3	NIOSH REL
		ST	250 ppm 325 mg/m3	NIOSH REL
		TWA	200 ppm 260 mg/m3	OSHA Z-1
		STEL	250 ppm 325 mg/m3	OSHA P0
		TWA	200 ppm 260 mg/m3	OSHA P0

Cas-No.	Components	Value type (Form of exposure)	Control Parameters / Permissible concentration	Basis
67-63-0	Isopropyl alcohol	TWA	200 ppm	ACGIH
		STEL	400 ppm	ACGIH
		TWA	400 ppm 980 mg/m3	NIOSH REL
		ST	500 ppm 1,225 mg/m3	NIOSH REL
		TWA	400 ppm 980 mg/m3	OSHA Z-1
		TWA	400 ppm 980 mg/m3	OSHA P0
		STEL	500 ppm 1,225 mg/m3	OSHA P0

Biological occupational exposure limits:

Components	Cas-No.	Control parameters	Biological specimen	Sampling time	Permissible concentration	Basis

Methanol	67-56-1	Methanol	Urine	End of shift (As soon as possible after exposure ceases)	15 mg/l	ACGIH BEI

Components	Cas-No.	Control parameters	Biological specimen	Sampling time	Permissible concentration	Basis
Isopropyl alcohol	67-63-0	Acetone	In urine	End of shift at end of work-week	40 mg/l	ACGIH BEI

Personal protective equipment:

Respiratory protection: No personal respiratory protective equipment normally required. In the case of vapor formation use a respirator with an approved filter.

Hand protection: The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Eye protection: Eye wash bottle with pure water. Tightly fitting safety goggles.

Skin and body protection: Impervious clothing. Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Hygiene measures: Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	liquid
Color	9622: brown; 9644: blue
Odor	mild, alcohol-like
Odor Threshold	No data available
pH	No data available
Freezing Point	<= -40°C (-40°F)
Boiling Point	>= 64°C (147°F)
Flash point	>= 11°C (52°F)
Evaporation rate	<= 5.9 (n-Butyl Acetate = 1)
Flammability (solid, gas)	No data available
Burning rate	No data available
Upper explosion limit	>= 13% (V)
Lower explosion limit	>= 2% (V)
Vapor pressure	<= 96 mmHg @ 20°C (68°F)
Relative vapor density	<= 2 @15-20°C (59-68°F) (air = 1)
Relative density	approximately 0.8 (water = 1)
Density	approximately 6.6
Bulk density	No data available
Solubility:	completely soluble in water
Partition coefficient:	Not determined
Auto-ignition temperature	No data available
Thermal decomposition	No data available

10. STABILITY AND REACTIVITY

Reactivity: No dangerous reaction known under conditions of normal use.

Chemical stability: Stable under normal conditions.

Possibility of hazardous reactions: No hazards to be specially mentioned.

Conditions to avoid: Heat, flames and sparks.

Incompatible materials: strong bases, strong mineral acids, strong organic acids, strong oxidizing agents, halogenated hydrocarbons, aluminum, lead, copper alloys, zinc, magnesium
Hazardous decomposition products: carbon dioxide, carbon monoxide, formaldehyde, formic acid, toxic fumes

11. TOXICOLOGICAL INFORMATION

Acute toxicity (Components):
Acute oral toxicity:

67-56-1: LD50 (rat): 100 mg/kg. Assessment: The component is toxic after single ingestion.
67-63-0: LD50 (rat): 5,045 mg/kg
64-17-5: LD50 (rat): 7,060 mg/kg

Acute inhalation toxicity:

67-56-1: LC50 (rat): 5 mg/l. Assessment: The component is toxic after short-term inhalation.
67-63-0: LC50 (rat): 16000 ppm
64-17-5: LC50 (rat): 124.7 mg/l

Acute dermal toxicity:

67-56-1: LD50 (rabbit): 300 mg/kg. Assessment: The component is toxic after single contact with skin.
67-63-0: LD50 (rabbit): 12,800 mg/kg
64-17-5: No data available

Skin corrosion/irritation (Components):

67-56-1: Species: rabbit. Result: No skin irritation.
67-63-0: Species: rabbit; Result: Mild skin irritation
64-17-5: Species: rabbit; Result: No skin irritation

Serious eye damage/eye irritation (Components):

67-56-1: Species: rabbit. Result: No eye irritation.
67-63-0: Species: rabbit; Result: Irritating to eyes
64-17-5: Species: rabbit; Result: Irritating to eyes

Respiratory or skin sensitization (Components):

67-56-1: Test Type: Maximization Test (GPMT). Species: guinea pig. Method: OECD Test Guideline 406. Result: Did not cause sensitization on laboratory animals.
67-63-0: No data available.
64-17-5: Test Type: lymph node assay. Species: mouse. Method: OECD Test Guideline 429. GLP: No data available. Remarks: Did not cause sensitization on laboratory animals.

Germ cell mutagenicity (Components): Component tests did not show mutagenic effects in animal experiments or on bacterial or mammalian cell cultures.

Carcinogenicity (Components): Not classifiable as a human carcinogen.

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity (Components):

67-56-1: Animal testing did not show any effects on fertility.

67-63-0: Animal testing did not show any effects on fertility. Did not show teratogenic effects in animal experiments.

64-17-5: Fertility classification not possible from current data. Embryotoxicity classification not possible from current data.

STOT - single exposure (Components):

67-56-1: Eyes, Central Nervous System. Causes damage to organs. The substance is classified as specific target organ toxicant, single exposure, category 1.

67-63-0: Inhalation: Central Nervous System. May cause drowsiness or dizziness. The substance is classified as specific target organ toxicant, single exposure, category 3 with narcotic effects.

64-17-5: Inhalation: Central Nervous System. May cause drowsiness or dizziness. The substance is classified as specific target organ toxicant, single exposure, category 3 with narcotic effects.

64-17-5: Inhalation: Respiratory system. May cause respiratory irritation. The substance is classified as specific target organ toxicant, single exposure, category 3 with respiratory tract irritation.

STOT - repeated exposure (Components): No data available

Repeated dose toxicity (Components):

67-56-1: Species: mouse, male and female. NOAEL: 1.3 mg/l. Application Route: Inhalation. Exposure time: 12 mths. Number of exposures: Continuous. Dose: 0, 0.013, 0.13, 1.3 mg/L.

64-17-5: Species: rat, male and female: NOAEL: 10 ml/kg; Application Route: Oral; Exposure time: 7 or 14 wk; Number of exposures: 2 times/d, 7 d/wk; Dose: 5, 10, 20ml/kg of 16.25% etoh; Method: OECD Test Guideline 408; GLP: yes

Aspiration toxicity (Components): No aspiration toxicity classification.

Further information: Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting. Concentrations substantially above the TLV value may cause narcotic effects. Solvents may degrease the skin.

12. ECOLOGICAL INFORMATION

Ecotoxicity (Components):

67-56-1	**Toxicity to fish**: LC50 (Lepomis macrochirus (Bluegill sunfish)): 15,400 mg/l; Exposure time: 96 h; Test Type: flow-through test **Toxicity to daphnia and other aquatic invertebrates**: EC50 (Daphnia magna (Water flea)): > 10,000 mg/l; Exposure time: 48 h; Test Type: static test **Toxicity to algae**: EC50 (Scenedesmus capricornutum (fresh water algae)): 22,000 mg/l; End point: Growth rate; Exposure time: 96 h; Test Type: static test; Method: OECD Test Guideline 201 **Toxicity to bacteria**: IC50 (activated sludge): > 1,000 mg/l; End point: Growth rate; Exposure time: 3 h; Test Type: Static; Method: OECD Test Guideline 209
67-63-0	**Toxicity to fish**: LC50 (Pimephales promelas (fathead minnow)): > 1,000 mg/l; Exposure time: 96 h **Toxicity to daphnia and other aquatic invertebrates**: LC50 (Daphnia magna (Water flea)): > 100 mg/l; Exposure time: 48 h **Toxicity to algae**:

	Remarks: No data available
64-17-5	**Toxicity to fish**: LC50 (Pimephales promelas (fathead minnow)): 15,300 mg/l; Exposure time: 96 h; Test Type: flow-through test **Toxicity to daphnia and other aquatic invertebrates**: EC50 (Ceriodaphnia dubia): 5,012 mg/l; Exposure time: 48 h; Test Type: static test **Toxicity to algae**: EC50 (Chlorella vulgaris (Fresh water algae)): 275 mg/l; End point: Growth rate; Exposure time: 72 h; Test Type: static test; Method: OECD Test Guideline 201; GLP: No data available

Persistence and degradability (Components):

67-56-1: Biodegradability: aerobic. Result: Readily biodegradable. Biodegradation: 72 %. Remarks: Readily biodegradable. Biochemical Oxygen Demand (BOD): 600 - 1,120 mg/g. Chemical Oxygen Demand (COD): 1,420 mg/g. BOD/COD: BOD: 600 - 1120COD: 1420. Stability in water: Hydrolysis: 91 % at19 °C (72 h). Remarks: Hydrolyzes on contact with water. Hydrolyzes readily.
64-17-5: Readily biodegradable.

Bioaccumulative potential (Components):

67-56-1: Bioaccumulation: Species: Cyprinus carpio (Carp). Bioconcentration factor (BCF): 1.0. Exposure time: 72 d. Temperature: 20°C. Concentration: 5 mg/l. Remarks: This substance is not considered to be very persistent nor very bioaccumulating (vPvB). Partition coefficient: n-octanol/water: log Pow: -0.77.
64-17-5: Bioaccumulation is unlikely.

Mobility in soil: No data available.

Other adverse effects: No data available.

Regulation: 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances
Remarks: This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App. A + B).

Additional ecological information: No data available.

13. DISPOSAL CONSIDERATIONS

Disposal methods:

Waste from residues: Dispose of in accordance with all applicable local, state and federal regulations.

Contaminated packaging: Empty remaining contents. Dispose of as unused product. Do not re-use empty containers. Do not burn, or use a cutting torch on, the empty drum.

14. TRANSPORT INFORMATION

Flammable. Do not ship via air. Use ground transportation only.

IATA (International Air Transport Association): UN1993, Flammable liquids, n.o.s. (contains Isopropanol, Ethanol Solutions and Methanol), 3 (6.1), PGII. Flash Point: 11 °C (52 °F)

IMDG (International Maritime Dangerous Goods): UN1993, Flammable liquids, n.o.s. (contains Isopropanol, Ethanol Solutions and Methanol), 3 (6.1), PGII.

DOT (Department of Transportation): UN1993, Flammable liquids, n.o.s. (contains Isopropanol, Ethanol Solutions and Methanol), 3, PGII.

15. REGULATORY INFORMATION

OSHA Hazards: Flammable liquid, Toxic by ingestion, Toxic by skin absorption, Moderate eye irritant
WHMIS Classification: B2: Flammable liquid
D1B: Toxic Material Causing Immediate and Serious Toxic Effects

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity:

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
Methanol	67-56-1	5000	5000

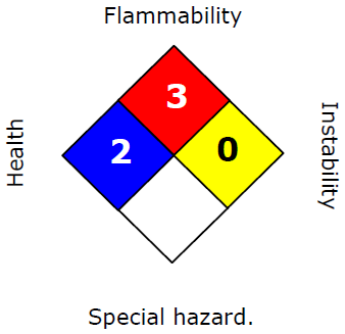
SARA 304 Extremely Hazardous Substances Reportable Quantity: This material does not contain any components with a section 304 EHS RQ.
SARA 311/312 Hazards: Fire Hazard, Acute Health Hazard
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.
SARA 313: The following components are subject to reporting levels established by SARA Title III, Section 313:
67-56-1: Methanol

Clean Air Act
The following chemical(s) are listed as HAP under the U.S. Clean Air Act, Section 12 (40 CFR 61):
67-56-1: Methanol
This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).
The following chemical(s) are listed under the U.S. Clean Air Act Section 111 SOCMI Intermediate or Final VOC's (40 CFR 60.489):
67-56-1: Methanol
67-63-0: Isopropyl alcohol
64-17-5: Ethanol

Clean Water Act
This product does not contain any Hazardous Substances listed under the U.S. Clean Water Act, Section 311, Table 116.4A.
This product does not contain any Hazardous Chemicals listed under the U.S. Clean Water Act, Section 311, Table 117.3.
This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307.

16. OTHER INFORMATION

NFPA: **HMIS III:**



HEALTH	**2**
FLAMMABILITY	**3**
PHYSICAL HAZARD	**0**

0 = not significant, 1 =Slight,
2 = Moderate, 3 = High
4 =Extreme, * = Chronic

HMIS & NFPA ratings involve data interpretations that may vary from company to company. They are intended only for rapid, general identification of the magnitude of the specific hazard. To deal adequately with the safe handling of this material, all the information contained in this SDS must be considered.

Key or legend to abbreviations and acronyms used in the safety data sheet:

ACGIH	American Conference of Government Industrial Hygienists
DSL	Canada, Domestic Substances List
NDSL	Canada, Non-Domestic Substances List
CNS	Central Nervous System
CAS	Chemical Abstract Service
EC50	Effective Concentration
EC50	Effective Concentration 50%
EGEST	EOSCA Generic Exposure Scenario Tool
GHS	Globally Harmonized System
>=	Greater Than or Equal To
IC50	Inhibition Concentration 50%
IARC	International Agency for Research on Cancer
<=	Less Than or Equal To
LC50	Lethal Concentration 50%
LD50	Lethal Dose 50%
LOAEL	Lowest Observed Adverse Effect Level
NFPA	National Fire Protection Agency
NIOSH	National Institute for Occupational Safety & Health
NTP	National Toxicology Program
NZIoC	New Zealand Inventory of Chemicals
NOAEL	No Observable Adverse Effect Level
NOEC	No Observed Effect Concentration
OSHA	Occupational Safety & Health Administration
PEL	Permissible Exposure Limit
PRNT	Presumed Not Toxic
RCRA	Resource Conservation Recovery Act
STEL	Short-term Exposure Limit
SARA	Superfund Amendments and Reauthorization Act.
TLV	Threshold Limit Value
TWA	Time Weighted Average
TSCA	Toxic Substance Control Act
UVCB	Unknown or Variable Composition, Complex Reaction Products, and Biological Materials
WHMIS	Workplace Hazardous Materials Information System

DISCLAIMER: The information contained herein is based upon data obtained from sources believed to be reliable and reflects our best professional judgment. Since it is impossible to anticipate all of the conditions under which our products may be used, we do not guarantee that the recommendations will be adequate for all individuals and situations. Each user of

this product should determine the suitability of the product for his or her particular purpose and should comply with all federal, state and local regulations. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. We shall not be held liable for any damage resulting from handling or from contact with the above product or from improper use of our products. We do not provide any warranties, expressed or implied, and do not assume any responsibility for the accuracy or completeness of the data contained herein. This information is offered for your information, consideration, and investigation. You should satisfy yourself that you have all current data relevant to your particular use. We update SDS and labels on a regular basis. Please do not hesitate to contact us for current information.

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