



Material SAFETY DATA SHEET

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION	
PRODUCT	
Product Name:	RTI F2
Product Description:	Specially formulated automotive air-conditioning flush
Intended Use:	Flushing automotive a/c systems
COMPANY IDENTIFICATION	
Supplier	BVA Inc. 29222 Trident Industrial Blvd. New Hudson, MI 48165 USA +1-248-348-4920
Emergency telephone numbers	USA – Chemtrec: 800-424-9300 All Others – Chemtrec: +1-703-527-3887

SECTION 2: HAZARDS IDENTIFICATION
<p>BVA operates a world-wide system for hazard communication. Some hazards shown in Section 2 may apply to non-EU countries and may not result in classification and labeling in the EU. Please see Section 3 and 15 for country specific classification information, and Section 11 for additional details.</p> <p>Eye: Contact may cause mild eye irritation including stinging, watering, and redness. Contact with the heated material may cause thermal burns. Vapors or fumes may cause watering of the eyes.</p> <p>Skin: Skin irritant. Contact may cause redness, itching, burning, and skin damage. Prolonged or repeated contact can worsen irritation by causing drying and cracking of the skin, leading to dermatitis (inflammation). No harmful effects from skin absorption are expected.</p> <p>Ingestion (Swallowing): No harmful effects reported from ingestion. ASPIRATION HAZARD - This material can enter lungs during swallowing or vomiting and cause lung inflammation and damage.</p> <p>Signs & Symptoms: Effects of overexposure may include irritation of the respiratory tract, irritation of the digestive tract, nausea, vomiting, diarrhea, transient excitation followed by signs of nervous system depression (e.g., headache, drowsiness, dizziness, loss of coordination, disorientation and fatigue).</p> <p>Pre-Existing Medical Conditions: Conditions aggravated by exposure may include skin disorders</p> <p>Health Hazards/Precautionary Measures: Causes skin irritation. Aspiration hazard if swallowed. Can enter lungs and cause damage. Avoid contact with eyes, skin and clothing. Wash thoroughly after handling. Do not taste or swallow. Wear appropriate personal protective equipment.</p> <p>This product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC, ACGIH or NTP.</p> <p>OSHA Regulatory Status This material is combustible, which is defined as having a flash point between 100°F (37.8°C) and 200°F (93.3°C). Combustible materials are hazardous according to the OSHA Hazard Communication Standard (29 CFR 1910.1200).</p>

<u>HMIS / NFPA Rating</u>	HMIS	
SEVERE 4	HEALTH	1
SERIOUS 3	FIRE	2
MODERATE 3	Reactivity	0
SLIGHT 2	Personal Protection	
MINIMAL 1		

Note: This material should not be used for any other purpose than the intended use in Section 1 without expert advice. Health studies have shown that chemical exposure may cause potential human health risks which may vary from person to person.

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SECTION 3: COMPONENT INFORMATION			
Chemical Name	CAS #		Percent (% wt)
Citrus Terpenes	94266-47-4		0 – 95 %
DGBE	111-76-2		0 – 95 %
Hydro-treated Petroleum Distillate	Multiple		0 – 95 %

SECTION 4 : FIRST AID MEASURES	
Inhalation:	If respiratory symptoms develop, move victim away from source of exposure and into fresh air. If symptoms persist, seek medical attention. If victim is not breathing, clear airway and immediately begin artificial respiration. If breathing difficulties develop, oxygen should be administered by qualified personnel. Seek immediate medical attention.
Skin:	Wipe material from skin, remove contaminated shoes and clothing and flush affected area(s) with large amounts of water. If skin surface is damaged, apply a clean dressing and seek medical attention. If skin surface is not damaged, cleanse affected area(s) thoroughly by washing with mild soap and water and, if necessary, a waterless skin cleanser. If irritation or redness develops, seek medical attention.
Eye :	Remove contact lenses at once. Flush with water for at least 15 minutes. If irritation persists, seek medical attention.
Ingestion:	Aspiration hazard: Do not induce vomiting or give anything by mouth because this material can enter the lungs and cause severe lung damage. If victim is drowsy or unconscious and vomiting, place on the left side with the head down. If possible, do not leave victim unattended and observe closely for adequacy of breathing. Seek medical attention.

SECTION 5 : FIRE FIGHTING PROCEDURES	
EXTINGUISHING MEDIA	Dry chemical, carbon dioxide, foam, or water spray is recommended. Water or foam may cause frothing of materials heated above 212°F. Carbon dioxide can displace oxygen. Use caution when applying carbon dioxide in confined spaces.
FIRE FIGHTING	For fires beyond the incipient stage, emergency responders in the immediate hazard area should wear bunker gear. When the potential chemical hazard is unknown, in enclosed or confined spaces, or when explicitly required by DOT, a self contained breathing apparatus should be worn. In addition, wear other appropriate protective equipment as conditions warrant (see Section 8). Isolate immediate hazard area, keep unauthorized personnel out. Stop spill/release if it can be done with minimal risk. Move undamaged containers from immediate hazard area if it can be done with minimal risk. Water spray may be useful in minimizing or dispersing vapors and to protect personnel. Cool equipment exposed to fire with water, if it can be done with minimal risk. Avoid spreading burning liquid with water used for cooling purposes. Hazardous Combustion Products: Smoke, Fume, Carbon Monoxide, Aldehydes,
Unsuitable Extinguishing Media:	Straight streams of water
FLAMMABILITY PROPERTIES	Flash Point ASTM D92 (open cup typical) °C (°F) > 55 (131) Flammable Limits (Approximate volume % in air): LEL%: 0.7 UEL%: 5 Autoignition Temperature: N/D

SECTION 6 : SPILL OR LEAK HANDLING PROCEDURES
Combustible. Keep all sources of ignition and hot metal surfaces away from spill/release. Stay upwind and away from spill/release. Notify persons down wind of the spill/release, isolate immediate hazard area and keep unauthorized personnel out. Stop spill/release if it can be done with minimal risk. Wear appropriate protective equipment including respiratory protection as conditions warrant (see Section 8). Prevent spilled material from entering sewers, storm drains, other unauthorized drainage systems, and natural waterways. Dike far ahead of spill for later recovery or disposal. Spilled material may be absorbed into an appropriate absorbent material. Water spray may be useful in minimizing or dispersing vapors (see Section 5). Notify fire authorities and appropriate federal, state, and local agencies. Immediate cleanup of any spill is recommended. If spill of any amount is made into or upon navigable waters, the contiguous zone, or adjoining shorelines, notify the National Response Center (phone number 800-424-8802).

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SECTION 7 : HANDLING AND STORAGE	
HANDLING	Do not enter confined spaces such as tanks or pits without following proper entry procedures such as ASTM D-4276 and 29CFR 1910.146. The use of appropriate respiratory protection is advised when concentrations exceed any established exposure limits (see Section 8).
STORAGE	Keep container(s) tightly closed. Use and store this material in cool, dry, well-ventilated areas away from heat and all sources of ignition. Store only in approved containers. Protect container(s) against physical damage. Keep away from any incompatible material (see Section 10).
Before working on or in tanks which contain or have contained this material, refer to OSHA regulations, ANSI Z49.1, and other references pertaining to cleaning, repairing, welding, or other contemplated operations.	
"Empty" containers retain residue and may be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, or other sources of ignition. They may explode and cause injury or death. "Empty" drums should be completely drained, properly bunged, and promptly shipped to the supplier or a drum reconditioner. All containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations.	

SECTION 8 : EXPOSURE CONTROLS / PERSONAL PROTECTION	
Exposure limits/standards for materials that can be formed when handling this product: When mists / aerosols can occur, the following are recommended: 5 mg/m ³ - ACGIH TLV, 10 mg/m ³ - ACGIH STEL.	
Note: Information about recommended monitoring procedures can be obtained from the relevant agency(ies)/institute(s)	
ENGINEERING CONTROLS	If current ventilation practices are not adequate to maintain airborne concentrations below the established exposure limits (see Section 2), additional engineering controls may be required.
PERSONAL PROTECTION	Personal protective equipment selections vary based on potential exposure conditions such as applications, handling practices, concentration and ventilation. Information on the selection of protective equipment for use with this material, as provided below, is based upon intended, normal usage.
Respiratory Protection:	Respiratory Protection: If engineering controls do not maintain airborne contaminant concentrations at a level which is adequate to protect worker health, an approved respirator may be appropriate. Respirator selection, use, and maintenance must be in accordance with regulatory requirements, if applicable. Types of respirators to be considered for this material include: No special requirements under ordinary conditions of use and with adequate ventilation. For high airborne concentrations, use an approved supplied-air respirator, operated in positive pressure mode. Supplied air respirators with an escape bottle may be appropriate when oxygen levels are inadequate, gas/vapour warning properties are poor, or if air purifying filter capacity/rating may be exceeded.
Hand Protection:	Any specific glove information provided is based on published literature and glove manufacturer data. Glove suitability and breakthrough time will differ depending on the specific use conditions. Contact the glove manufacturer for specific advice on glove selection and breakthrough times for your use conditions. Inspect and replace worn or damaged gloves. The types of gloves to be considered for this material include: No protection is ordinarily required under normal conditions of use.
Eye Protection:	Approved eye protection to safeguard against potential eye contact, irritation, or injury is recommended. Depending on conditions of use, a face shield may be necessary.
Skin and Body Protection:	Any specific clothing information provided is based on published literature or manufacturer data. The types of clothing to be considered for this material include: No skin protection is ordinarily required under normal conditions of use. In accordance with good industrial hygiene practices, precautions should be taken to avoid skin contact.
Specific Hygiene Measures	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.
ENVIRONMENTAL CONTROLS	See Sections 6, 7, 12, 13.

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SECTION 9 : PHYSICAL & CHEMICAL PROPERTIES			
Typical physical and chemical properties are given below. Consult the Supplier in Section 1 for additional data.			
General Information		HEALTH, SAFETY, AND ENVIRONMENTAL INFORMATION	
Physical State	Liquid	Density at 20°C	0.7982
Color	Clear colorless to pale yellow	Flash Point typical °C (°F)	>55 (131) See Section 5
Odor	Slight Citrus	Flammable Limits	LEL: N/D UEL: N/D
Solubility in Water	Nil	Autoignition Temperature:	ND
Oxidizing Properties		See Sections 3, 15, 16.	ND
OTHER INFORMATION		Vapor Density (Air=1)	NA
Pour Point °C (°F)	-40 (-40) or below	Vapor Pressure	< 0.013 kPa (0.1 mm Hg) at 20°C
Freezing Point	ND	Evaporation Rate (N-Butyl Acetate = 1):	ND

SECTION 10 : STABILITY & REACTIVITY	
STABILITY:	Material is stable under normal conditions.
CONDITIONS TO AVOID:	Excessive heat. High energy sources of ignition.
MATERIALS TO AVOID:	Strong oxidizers
HAZARDOUS DECOMPOSITION PRODUCTS:	Material does not decompose at ambient temperatures.
HAZARDOUS POLYMERIZATION:	Will not occur.

SECTION 11: TOXICOLOGICAL INFORMATION	
ACUTE TOXICITY	
Potential acute health effects	
Inhalation : No known significant effects or critical hazards.	
Ingestion : No known significant effects or critical hazards.	
Skin contact : No known significant effects or critical hazards.	
Eye contact : No known significant effects or critical hazards.	
Based on Similar Materials	
Route of Exposure	Conclusion / Remarks
INHALATION	
Irritation LC50 >5 mg/L (4hour/hours)	Minimally Toxic. Based on test data for structurally similar materials. Negligible hazard at ambient/normal handling temperatures. Based on assessment of the components.
INGESTION	
Toxicity: LD50 > 5 mg/kg (rat)	Minimally Toxic. Based on test data for structurally similar materials.
Skin	
Toxicity: LD50 > 5g/kg (rabbit)	Minimally Toxic. Based on test data for structurally similar materials. Negligible irritation to skin at ambient temperatures. Based on test data for structurally similar materials.
Eye	
Irritation: Data available.	May cause mild, short-lasting discomfort to eyes. Based on test data for structurally similar materials.
OVER – EXPOSURE SIGNS/SYMPTOMS	
Skin	No known significant effects or critical hazards.
Ingestion	No known significant effects or critical hazards.
Inhalation	No known significant effects or critical hazards.
This product is not classified as a carcinogen by OSHA, IARC, ACGIH or NTP. This product has not been shown to produce genetic changes when tested on bacterial or animal cells. This product does not contain known reproductive or developmental toxins. Prolonged or repeated exposure can cause drying or dermatitis of skin. Improper storage and handling may lead to the formation of a possible skin sensitizer.	

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SECTION 12 : ECOLOGICAL INFORMATION

Ecotoxicity: There is no information available at this time for this product. However, a spill may produce significant toxicity to aquatic organisms and ecosystems. When spilled, this product may act as an oil, causing a film, sheen, emulsion or sludge at or beneath the surface of a body of water.

SECTION 13 : DISPOSAL CONSIDERATIONS

This material, if discarded as produced, is not a RCRA "listed" hazardous waste. However, it should be fully evaluated for hazardous waste characteristics prior to disposal (40 CFR 261). Use which results in chemical or physical change or contamination may subject it to regulation as a hazardous waste. Along with properly characterizing all waste materials, consult state and local regulations regarding the proper disposal of this material.

Container contents should be completely used and containers should be emptied prior to discard. Container rinsate could be considered a RCRA hazardous waste and must be disposed of with care and in full compliance with federal, state and local regulations. Larger empty containers, such as drums, should be returned to the distributor or to a drum re-conditioner. To assure proper disposal of smaller empty containers, consult with state and local regulations and disposal authorities.

SECTION 14 : TRANSPORT INFORMATION

US DOT Classification: **Petroleum Distillate Terpene blend NOS Combustible Liquid NOS Class IIIA**

UN 1993

Non-Bulk Package Marking: Not Regulated (173.150 (f) (2)) Non-Bulk Package Labeling: Not Regulated (173.150 (f) (2))

Bulk Package/Placard Marking: Combustible/1993

Packaging - References (Exceptions, Non-Bulk, Bulk): 49 CFR 173.150, 173.203, 173.241 Hazardous Substance: None

UN 1993, Flammable Liquid, N.O.S. (Petroleum Distillate), Class 3, PG III

Emergency Response Guide: 128

MO/IMDG Classification

Hazardous

ICAO/IATA Classification

Hazardous

USA: No special warning labels are required under OSHA 29CFR 1910.1200. OSHA hazard warnings are not applicable for this product; therefore no OSHA Warnings would appear on the label. No EPA hazard classification code.

SECTION 15: Regulatory Information Product Component Ingredients

EPA SARA 311/312 (Title III Hazard Categories) Acute Health: Yes

Chronic Health: No

Fire Hazard: No

Pressure Hazard: No

SARA - Section 313 and 40 CFR 372:

This material contains the following chemicals subject to the reporting requirements of SARA 313 and 40 CFR 372:

--None Known--

CERCLA/SARA - Section 302 Extremely Hazardous Substances and TPQs (in pounds): This material contains the following chemicals subject to the reporting requirements of SARA 302 and 40 CFR 372:

- None Known -

California Proposition 65:

Warning: This material contains the following chemicals which are known to the State of California to cause cancer, birth defects or other reproductive harm, and are subject to the requirements of California Proposition 65 (CA Health & Safety Code Section 25249.5):

Carcinogen Identification:

This material has not been identified as a carcinogen by NTP, IARC, or OSHA. See Section 11 for carcinogenicity information of individual components, if any.

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- None Known --

TSCA

Hazardous Component(s) subject to reporting on the TSCA List.

Canadian Regulations:

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

Canada - Domestic Substances List:

Listed

WHMIS Hazard Class:

B3 - Combustible Liquids

D2B - Materials Causing Other Toxic Effects - Toxic Material

EU Risk and Safety Phrases

R -phrase(s) R65 - Harmful: may cause lung damage if swallowed. R66 - Repeated exposure may cause skin dryness or cracking.

S -phrase(s) S24 - Avoid contact with skin.

S62 - If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label.

International Inventories:

This material is listed on the following inventories:

Australia (AICS)

Canada (DSL)

China

Europe (EINECS)

Korea (Existing and Evaluated Chemical Substances)

Philippines (PICCS)

SECTION 16: OTHER INFORMATION

This product safety data sheet was prepared in compliance with Commission Directive 2001/58/EC , 91/155/EEC, 67/548/EEC and 1999/45/EC as well as their relevant amendments, on the approximation of laws, regulations and administrative provisions relative to the classification, packaging and labeling of dangerous substances and preparations.

N/D = Not determined, N/A = Not applicable

KEY TO THE RISK CODES CONTAINED IN SECTION 2 AND 3 OF THIS DOCUMENT (for information only):

THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS: Updated to GHS format 7 May 2010

Date of ISSUE/Printing April 20, 2011

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