

Material Safety Data Sheet



DFC Plus for Winter

1. Product and company identification

Material uses	: Other non-specified industry: Fuel additive.
Manufacturer	: BG Products Inc. 701 S. Wichita Street Wichita, KS, 67213, USA www.bgprod.com
MSDS #	: 236
Validation date	: 9/1/2010.
Responsible name	: Kolin Anglin, Environmental Coordinator 316-265-2686 msds@bgprod.com
In case of emergency	: (800) 424-9300 (CHEMTREC)

2. Hazards identification

Physical state	: Liquid.
Odor	: Solvents
OSHA/HCS status	: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Emergency overview	: WARNING! COMBUSTIBLE LIQUID AND VAPOR. HARMFUL IF SWALLOWED. MAY BE HARMFUL IF ABSORBED THROUGH SKIN. CONTAINS MATERIAL THAT MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA. SUSPECT CANCER HAZARD - CONTAINS MATERIAL WHICH MAY CAUSE CANCER. Keep away from heat, sparks and flame. Avoid exposure - obtain special instructions before use. Do not breathe vapor or mist. Do not ingest. Do not get in eyes. Avoid contact with skin and clothing. Contains material that may cause target organ damage, based on animal data. Risk of cancer depends on duration and level of exposure. Use only with adequate ventilation.
Potential acute health effects	
Inhalation	: Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
Ingestion	: Toxic if swallowed.
Skin	: Harmful in contact with skin. May cause skin irritation.
Eyes	: May cause eye irritation.
Potential chronic health effects	
Chronic effects	: Contains material that may cause target organ damage, based on animal data.
Carcinogenicity	: Contains material which may cause cancer. Risk of cancer depends on duration and level of exposure.
Target organs	: Contains material which may cause damage to the following organs: blood, kidneys, liver, gastrointestinal tract, upper respiratory tract, skin, eyes, central nervous system (CNS).
Over-exposure signs/symptoms	No known significant effects or critical hazards.
Medical conditions aggravated by over-exposure	: Pre-existing disorders involving any target organs mentioned in this MSDS as being at risk may be aggravated by over-exposure to this product.

See toxicological information (section 11)

3. Composition/information on ingredients

Name	CAS number	%
1,2,4-Trimethyl-benzene	95-63-6	1 - 5
Xylene	1330-20-7	0.5 - 1.5
Naphthalene	91-20-3	0.5 - 1.5
Acetic acid ethenyl ester	108-05-4	0.1 - 1

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

4. First aid measures

- Eye contact** : Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention if symptoms occur.
- Skin contact** : In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention if symptoms occur.
- Inhalation** : Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms occur.
- Ingestion** : Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.
- Notes to physician** : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

5. Fire-fighting measures

- Flammability of the product** : Combustible liquid. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion.
- Extinguishing media**
- Suitable** : Use dry chemical, CO₂, water spray (fog) or foam.
- Not suitable** : Do not use water jet.
- Special exposure hazards** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
- Hazardous thermal decomposition products** : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
nitrogen oxides
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

6. Accidental release measures

- Personal precautions** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see section 8).
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities.
- Methods for cleaning up**
- Small spill** : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor.
- Large spill** : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see section 1 for emergency contact information and section 13 for waste disposal.

7. Handling and storage

- Handling** : Put on appropriate personal protective equipment (see section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use non-sparking tools. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Empty containers retain product residue and can be hazardous. Do not reuse container.
- Storage** : Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

8. Exposure controls/personal protection

Ingredient	Exposure limits

8. Exposure controls/personal protection

1,2,4-Trimethyl-benzene	<p>ACGIH TLV (United States, 1/2008). TWA: 25 ppm 8 hour(s). TWA: 123 mg/m³ 8 hour(s).</p> <p>NIOSH REL (United States, 6/2008). TWA: 25 ppm 10 hour(s). TWA: 125 mg/m³ 10 hour(s).</p>
Xylene	<p>ACGIH TLV (United States, 1/2008). TWA: 100 ppm 8 hour(s). TWA: 434 mg/m³ 8 hour(s). STEL: 150 ppm 15 minute(s). STEL: 651 mg/m³ 15 minute(s).</p> <p>OSHA PEL (United States, 11/2006). TWA: 100 ppm 8 hour(s). TWA: 435 mg/m³ 8 hour(s).</p>
Naphthalene	<p>ACGIH TLV (United States, 1/2008). TWA: 10 ppm 8 hour(s). TWA: 52 mg/m³ 8 hour(s). STEL: 15 ppm 15 minute(s). STEL: 79 mg/m³ 15 minute(s).</p> <p>NIOSH REL (United States, 6/2008). TWA: 10 ppm 10 hour(s). TWA: 50 mg/m³ 10 hour(s). STEL: 15 ppm 15 minute(s). STEL: 75 mg/m³ 15 minute(s).</p> <p>OSHA PEL (United States, 11/2006). TWA: 10 ppm 8 hour(s). TWA: 50 mg/m³ 8 hour(s).</p>
Acetic acid ethenyl ester	<p>ACGIH TLV (United States, 1/2008). TWA: 10 ppm 8 hour(s). TWA: 35 mg/m³ 8 hour(s). STEL: 15 ppm 15 minute(s). STEL: 53 mg/m³ 15 minute(s).</p> <p>NIOSH REL (United States, 6/2008). CEIL: 4 ppm 15 minute(s). CEIL: 15 mg/m³ 15 minute(s).</p>

Consult local authorities for acceptable exposure limits.

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

Engineering measures : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal protection

Respiratory : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Hands : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

8. Exposure controls/personal protection

- Eyes** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.
- Skin** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

9. Physical and chemical properties

- Physical state** : Liquid.
- Flash point** : Closed cup: 72°C (161.6°F)
- Auto-ignition temperature** : Not available.
- Flammable limits** : Not available.
- Color** : Amber.
- Odor** : Solvents
- pH** : Not available.
- Boiling/condensation point** : Not available.
- Melting/freezing point** : Not available.
- Specific gravity** : 0.9382
- Vapor pressure** : Not available.
- Vapor density** : Not available.
- Odor threshold** : Not available.
- Evaporation rate** : Not available.
- Viscosity** : Kinematic (40°C (104°F)): 0.1282 cm²/s (12.82 cSt)
- Solubility** : Insoluble in the following materials: cold water and hot water.
- Density** : 7.825 (lbs/gal)

10. Stability and reactivity

- Chemical stability** : The product is stable.
- Conditions to avoid** : Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Avoid exposure - obtain special instructions before use.
- Materials to avoid** : Reactive or incompatible with the following materials:
oxidizing materials
- Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.
- Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.

11. Toxicological information

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure

11. Toxicological information

1,2,4-Trimethyl-benzene	LC50 Inhalation Vapor	Rat	18000 mg/m ³	4 hours
Naphthalene	LD50 Oral	Rat	5 g/kg	-
	LD50 Dermal	Rabbit	>20 g/kg	-
Xylene	LD50 Dermal	Rat	>2500 mg/kg	-
	LD50 Oral	Rat	490 mg/kg	-
	LC50 Inhalation Gas.	Rat	5000 ppm	4 hours
Acetic acid ethenyl ester	LD50 Dermal	Rabbit	>1700 mg/kg	-
	LD50 Oral	Rat	4300 mg/kg	-
	LC50 Inhalation Vapor	Rat	11400 mg/m ³	4 hours
	LD50 Dermal	Rabbit	2335 mg/kg	-
	LD50 Oral	Rat	2900 mg/kg	-

Carcinogenicity

Classification

Product/ingredient name	ACGIH	IARC	EPA	NIOSH	NTP	OSHA
Xylene	A4	3	-	-	-	-
Naphthalene	A4	2B	-	-	Possible	-
Acetic acid ethenyl ester	A3	2B	-	-	-	-

12. Ecological information

Ecotoxicity : Water polluting material. May be harmful to the environment if released in large quantities.

Product/ingredient name	Result	Species	Exposure
1,2,4-Trimethyl-benzene	Acute LC50 17000 ug/L Marine water	Crustaceans - Cancer magister - Zoea	48 hours
	Acute LC50 7720 ug/L Fresh water	Fish - Pimephales promelas - 34 days	96 hours
Naphthalene	Acute EC50 1600 ug/L Fresh water	Daphnia - Daphnia magna - Neonate - <=24 hours	48 hours
	Acute LC50 2350 ug/L Marine water	Crustaceans - Palaemonetes pugio	48 hours
	Acute LC50 213 ug/L Fresh water	Fish - Melanotaenia fluviatilis - LARVAE - 1 days	96 hours
Xylene	Acute LC50 8500 ug/L Marine water	Crustaceans - Palaemonetes pugio	48 hours
	Acute LC50 3300 ug/L Fresh water	Fish - Oncorhynchus mykiss - 0.6 g	96 hours
Acetic acid ethenyl ester	Acute LC50 10000 to 100000 ug/L Marine water	Crustaceans - Crangon crangon - LARVAE	48 hours
	Acute LC50 14000 ug/L Fresh water	Fish - Pimephales promelas - 1 days	96 hours

Octanol/water partition coefficient : Not available.

13. Disposal considerations

Waste disposal : The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

13. Disposal considerations

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

14. Transport information

Regulatory information	UN number	Proper shipping name	Classes	PG*	Label	Additional information
DOT Classification	UN3082	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (2-Ethylhexyl Nitrate). Marine pollutant (2-Ethylhexyl Nitrate)	9	III		Marine pollutant
IMDG Class	UN3082	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (2-Ethylhexyl Nitrate). Marine pollutant (2-Ethylhexyl Nitrate, Naphthalene)	9	III		Emergency schedules (EmS) F-A, S-F Marine pollutant
IATA-DGR Class	UN3082	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (2-Ethylhexyl Nitrate)	9	III		Passenger and Cargo Aircraft Quantity limitation: 450 L Cargo Aircraft Only Quantity limitation: 450 L Limited Quantities - Passenger Aircraft Quantity limitation: 30 kg Remarks Marine Pollutant:

PG* : Packing group

15. Regulatory information

United States

HCS Classification : Combustible liquid
Toxic material
Carcinogen
Target organ effects

U.S. Federal regulations : **TSCA 4(a) final test rules:** Naphthalene
TSCA 8(a) PAIR: Naphthalene
United States inventory (TSCA 8b): Not determined.
TSCA 12(b) one-time export: Naphthalene

15. Regulatory information

SARA 302/304/311/312 extremely hazardous substances: No products were found.

SARA 302/304 emergency planning and notification: No products were found.

SARA 302/304/311/312 hazardous chemicals: Naphthalene; 1,2,4-Trimethyl-benzene; Xylene

SARA 311/312 MSDS distribution - chemical inventory - hazard identification:

Naphthalene: Fire hazard, Immediate (acute) health hazard, Delayed (chronic) health

hazard; 1,2,4-Trimethyl-benzene: Fire hazard, Delayed (chronic) health hazard; Xylene:

Fire hazard, Immediate (acute) health hazard, Delayed (chronic) health hazard

Clean Water Act (CWA) 307: Naphthalene

Clean Water Act (CWA) 311: Naphthalene; Acetic acid ethenyl ester; Xylene

Clean Air Act (CAA) 112 accidental release prevention: Acetic acid ethenyl ester

Clean Air Act (CAA) 112 regulated toxic substances: Acetic acid ethenyl ester

Clean Air Act Section 112(b) Hazardous Air Pollutants (HAPs) : Listed

SARA 313

	Product name	CAS number	Concentration
Form R - Reporting requirements	1,2,4-Trimethyl-benzene	95-63-6	1 - 5
	Xylene	1330-20-7	0.5 - 1.5
	Naphthalene	91-20-3	0.5 - 1.5
	Acetic acid ethenyl ester	108-05-4	0.1 - 1
Supplier notification	1,2,4-Trimethyl-benzene	95-63-6	1 - 5
	Xylene	1330-20-7	0.5 - 1.5
	Naphthalene	91-20-3	0.5 - 1.5
	Acetic acid ethenyl ester	108-05-4	0.1 - 1

SARA 313 notifications must not be detached from the MSDS and any copying and redistribution of the MSDS shall include copying and redistribution of the notice attached to copies of the MSDS subsequently redistributed.

State regulations

Massachusetts : The following components are listed: PSEUDOCUMENE; XYLENE; NAPHTHALENE

New York : The following components are listed: Xylene (mixed); Vinyl acetate; Naphthalene

New Jersey : The following components are listed: PSEUDOCUMENE; XYLENES; VINYL ACETATE; NAPHTHALENE

Pennsylvania : The following components are listed: PSEUDOCUMENE; BENZENE, DIMETHYL-; ACETIC ACID ETHENYL ESTER; NAPHTHALENE

Rhode Island : None of the components are listed.

California Prop. 65

WARNING: This product contains a chemical known to the State of California to cause cancer.

Ingredient name	Cancer	Reproductive	No significant risk level	Maximum acceptable dosage level
Naphthalene	Yes.	No.	Yes.	No.
Ethylbenzene	Yes.	No.	No.	No.

United States inventory (TSCA 8b) : Not determined.

Canada

WHMIS (Canada) : Class B-3: Combustible liquid with a flash point between 37.8°C (100°F) and 93.3°C (200°F).
Class D-2A: Material causing other toxic effects (Very toxic).
Class D-2B: Material causing other toxic effects (Toxic).

Canadian lists

15. Regulatory information

- Canadian NPRI** : The following components are listed: Light aromatic solvent naphtha; 1,2,4-Trimethylbenzene; Xylene; Heavy aromatic solvent naphtha; Naphthalene
- CEPA Toxic substances** : The following components are listed: Naphthalene
- Canada inventory** : Not determined.

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

International regulations

- International lists** :
- Australia inventory (AICS)**: Not determined.
 - China inventory (IECSC)**: Not determined.
 - Japan inventory**: Not determined.
 - Korea inventory**: Not determined.
 - New Zealand Inventory of Chemicals (NZIoC)**: Not determined.
 - Philippines inventory (PICCS)**: Not determined.

16. Other information

Hazardous Material Information System (U.S.A.) :

Health	*	2
Flammability		2
Physical hazards		0

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on MSDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

National Fire Protection Association (U.S.A.) :



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Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

- Date of issue** : 9/1/2010.
- Date of previous issue** : No previous validation.
- Version** : 1

☑ Indicates information that has changed from previously issued version.

[Notice to reader](#)

16. Other information

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.