

SAFETY DATA SHEET

BG DFC PLUS® WITH CETANE IMPROVER



Section 1. Identification

GHS product identifier : BG DFC PLUS® WITH CETANE IMPROVER
Product code : 248
Other means of identification : P248-XXXX; 248E, 2481, 2485, 24853, 24853E, 248B, 248CC, 248WOR, P248, 248S
Product type : Liquid.

Relevant identified uses of the substance or mixture and uses advised against

Identified uses

Fuel additive.

Supplier's details : BG Products Inc.
740 S. Wichita Street
Wichita, KS, 67213, USA
www.bgprod.com
316-266-8120
msds@bgprod.com

Emergency telephone number (with hours of operation) : (800) 424-9300 (CHEMTREC: CCN656479)
24-hour telephone and/or website

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : FLAMMABLE LIQUIDS - Category 3
ACUTE TOXICITY (oral) - Category 4
SKIN SENSITIZATION - Category 1
CARCINOGENICITY - Category 2
ASPIRATION HAZARD - Category 1
AQUATIC HAZARD (LONG-TERM) - Category 2

GHS label elements

Hazard pictograms



Signal word : Danger

Hazard statements : Flammable liquid and vapor.
Harmful if swallowed.
May be fatal if swallowed and enters airways.
May cause an allergic skin reaction.
Suspected of causing cancer.
Toxic to aquatic life with long lasting effects.
Prolonged or repeated contact may dry skin and cause irritation.

Precautionary statements

Section 2. Hazards identification

- Prevention** : Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves, protective clothing and eye or face protection. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Avoid release to the environment. Avoid breathing vapor. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Contaminated work clothing must not be allowed out of the workplace.
- Response** : Collect spillage. IF exposed or concerned: Get medical advice or attention. IF SWALLOWED: Immediately call a POISON CENTER or doctor. Rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. Wash contaminated clothing before reuse. IF ON SKIN: Wash with plenty of water. If skin irritation or rash occurs: Get medical advice or attention.
- Storage** : Store locked up.
- Disposal** : Dispose of contents and container in accordance with all local, regional, national and international regulations.
- Supplemental label elements** : Avoid contact with skin and clothing. Wash thoroughly after handling.
- Hazards not otherwise classified** : None known.

Section 3. Composition/information on ingredients

- Substance/mixture** : Mixture
- Other means of identification** : P248-XXXX; 248E, 2481, 2485, 24853, 24853E, 248B, 248CC, 248WOR, P248, 248S

Ingredient name	%	CAS number
Naphtha (petroleum), hydrotreated heavy	≥25 - ≤50	64742-48-9
2-ethylhexyl nitrate	≥25 - ≤50	27247-96-7
Solvent naphtha (petroleum), heavy arom.	≥10 - ≤25	64742-94-5
1,2,4-trimethylbenzene	≤3	95-63-6
Solvent naphtha (petroleum), light arom.	≤3	64742-95-6
naphthalene	≤3	91-20-3
xylene	<1	1330-20-7
ethylbenzene	<1	100-41-4
Polyalkylenepolyamine	≤0.3	Proprietary
cumene	≤0.3	98-82-8
mesitylene	≤0.3	108-67-8

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

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

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. 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.
- Skin contact** : Wash skin thoroughly with soap and water or use recognized skin cleanser. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Aspiration hazard if swallowed. Can enter lungs and cause damage. Do not induce vomiting. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

- Eye contact** : No known significant effects or critical hazards.
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : Defatting to the skin. May cause skin dryness and irritation. May cause an allergic skin reaction.
- Ingestion** : Harmful if swallowed. May be fatal if swallowed and enters airways.

Over-exposure signs/symptoms

- Eye contact** : No specific data.
- Inhalation** : No specific data.
- Skin contact** : Adverse symptoms may include the following:
irritation
redness
dryness
cracking
- Ingestion** : Adverse symptoms may include the following:
nausea or vomiting

Indication of immediate medical attention and special treatment needed, if necessary

- 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.
- Specific treatments** : No specific treatment.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. 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.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

- Suitable extinguishing media** : Use dry chemical, CO₂, water spray (fog) or foam.
- Unsuitable extinguishing media** : Do not use water jet.

Specific hazards arising from the chemical

- : Flammable liquid and vapor. Runoff to sewer may create fire or explosion hazard. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. This material is toxic to aquatic life with long lasting effects. 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 actions for fire-fighters

- : 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.

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.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

- : 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. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders

- : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

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. Collect spillage.

Methods and materials for containment and cleaning up

Small spill

- : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. 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. Dispose of via a licensed waste disposal contractor.

Large spill

- : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. 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). 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.

Section 7. Handling and storage

Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not swallow. Avoid breathing vapor or mist. 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 only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.
- Advice on general occupational hygiene** : 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. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
- Conditions for safe storage, including any incompatibilities** : 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. Store locked up. 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. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Naphtha (petroleum), hydrotreated heavy 2-ethylhexyl nitrate Solvent naphtha (petroleum), heavy arom. 1,2,4-trimethylbenzene	None. None. None. ACGIH TLV (United States, 1/2021). TWA: 25 ppm 8 hours. TWA: 123 mg/m ³ 8 hours. OSHA PEL 1989 (United States, 3/1989). TWA: 25 ppm 8 hours. TWA: 125 mg/m ³ 8 hours. NIOSH REL (United States, 10/2020). TWA: 25 ppm 10 hours. TWA: 125 mg/m ³ 10 hours.
Solvent naphtha (petroleum), light arom. naphthalene	None. ACGIH TLV (United States, 1/2021). Absorbed through skin. TWA: 10 ppm 8 hours. TWA: 52 mg/m ³ 8 hours. OSHA PEL 1989 (United States, 3/1989). TWA: 10 ppm 8 hours. TWA: 50 mg/m ³ 8 hours. STEL: 15 ppm 15 minutes. STEL: 75 mg/m ³ 15 minutes. NIOSH REL (United States, 10/2020). TWA: 10 ppm 10 hours. TWA: 50 mg/m ³ 10 hours. STEL: 15 ppm 15 minutes.

Section 8. Exposure controls/personal protection

xylene	<p>STEL: 75 mg/m³ 15 minutes. OSHA PEL (United States, 5/2018). TWA: 10 ppm 8 hours. TWA: 50 mg/m³ 8 hours. ACGIH TLV (United States, 1/2021). TWA: 100 ppm 8 hours. TWA: 434 mg/m³ 8 hours. STEL: 150 ppm 15 minutes. STEL: 651 mg/m³ 15 minutes. OSHA PEL 1989 (United States, 3/1989). TWA: 100 ppm 8 hours. TWA: 435 mg/m³ 8 hours. STEL: 150 ppm 15 minutes. STEL: 655 mg/m³ 15 minutes. OSHA PEL (United States, 5/2018). TWA: 100 ppm 8 hours. TWA: 435 mg/m³ 8 hours.</p>
ethylbenzene	<p>ACGIH TLV (United States, 1/2021). TWA: 20 ppm 8 hours. OSHA PEL 1989 (United States, 3/1989). TWA: 100 ppm 8 hours. TWA: 435 mg/m³ 8 hours. STEL: 125 ppm 15 minutes. STEL: 545 mg/m³ 15 minutes. NIOSH REL (United States, 10/2020). TWA: 100 ppm 10 hours. TWA: 435 mg/m³ 10 hours. STEL: 125 ppm 15 minutes. STEL: 545 mg/m³ 15 minutes. OSHA PEL (United States, 5/2018). TWA: 100 ppm 8 hours. TWA: 435 mg/m³ 8 hours.</p>
Polyalkylenepolyamine cumene	<p>None. OSHA PEL 1989 (United States, 3/1989). Absorbed through skin. TWA: 50 ppm 8 hours. TWA: 245 mg/m³ 8 hours. NIOSH REL (United States, 10/2020). Absorbed through skin. TWA: 50 ppm 10 hours. TWA: 245 mg/m³ 10 hours. ACGIH TLV (United States, 1/2021). TWA: 5 ppm 8 hours. OSHA PEL (United States, 5/2018). Absorbed through skin. TWA: 50 ppm 8 hours. TWA: 245 mg/m³ 8 hours.</p>
mesitylene	<p>ACGIH TLV (United States, 1/2021). TWA: 25 ppm 8 hours. TWA: 123 mg/m³ 8 hours. OSHA PEL 1989 (United States, 3/1989). TWA: 25 ppm 8 hours. TWA: 125 mg/m³ 8 hours. NIOSH REL (United States, 10/2020). TWA: 25 ppm 10 hours. TWA: 125 mg/m³ 10 hours.</p>

Biological exposure indices

No exposure indices known.

Section 8. Exposure controls/personal protection

- Appropriate engineering controls** : 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.
- 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.
- Individual protection measures**
- 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. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Eye/face protection** : 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, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.
- Skin protection**
- Hand protection** : 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. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
- Body protection** : 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. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties and safety characteristics

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

Appearance

- Physical state** : Liquid.
- Color** : Amber.
- Odor** : Solvents
- Odor threshold** : Not available.
- pH** : Not available.
- Melting point/freezing point** : Not available.
- Boiling point, initial boiling point, and boiling range** : Not available.

Section 9. Physical and chemical properties and safety characteristics

Flash point : Closed cup: 53°C (127.4°F) [ASTM D 7094-04]

Evaporation rate : Not available.

Flammability : Highly flammable in the presence of the following materials or conditions: open flames, sparks and static discharge.

Lower and upper explosion limit/flammability limit : Not available.

Vapor pressure :

Ingredient name	Vapor Pressure at 20°C			Vapor pressure at 50°C		
	mm Hg	kPa	Method	mm Hg	kPa	Method
ethylbenzene	9.3	1.2				
xylene	6.7	0.89				
cumene	3.72	0.5				
mesitylene	2.4	0.32				
1,2,4-trimethylbenzene	2.25	0.3				
Naphtha (petroleum), hydrotreated heavy	0.75 to 2.25	0.1 to 0.3				
2-ethylhexyl nitrate	0.2	0.027	OECD 104			
naphthalene	0.05	0.0067	OECD 104			
Solvent naphtha (petroleum), heavy arom.	0.02	0.0027				

Relative vapor density : Not available.

Relative density : 0.8794

Solubility(ies) :

Media	Result
cold water	Not soluble
hot water	Not soluble

Solubility in water : Not available.

Partition coefficient: n-octanol/water : Not applicable.

Auto-ignition temperature :

Ingredient name	°C	°F	Method
2-ethylhexyl nitrate	215	419	NF T 70-504
Solvent naphtha (petroleum), heavy arom.	220 to 250	428 to 482	ASTM E 659
Naphtha (petroleum), hydrotreated heavy	280 to 470	536 to 878	
Solvent naphtha (petroleum), light arom.	280 to 470	536 to 878	
cumene	424	795.2	
xylene	432	809.6	
ethylbenzene	432.22	810	
1,2,4-trimethylbenzene	500	932	
naphthalene	526 to 587	978.8 to 1088.6	DIN 51794
mesitylene	559	1038.2	

Decomposition temperature : Not available.

Viscosity : Kinematic (40°C (104°F)): 2.64 mm²/s (2.64 cSt)

Flow time (ISO 2431) : Not available.

Section 9. Physical and chemical properties and safety characteristics

Particle characteristics

Median particle size : Not applicable.

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

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.

Incompatible materials : 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.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Naphtha (petroleum), hydrotreated heavy 2-ethylhexyl nitrate	LD50 Oral	Rat	>6 g/kg	-
	LD50 Dermal	Rabbit	4800 mg/kg	-
Solvent naphtha (petroleum), heavy arom.	LD50 Oral	Rat	9600 mg/kg	-
	LC50 Inhalation Dusts and mists	Rat	1.97 mg/l	4 hours
1,2,4-trimethylbenzene	LD50 Dermal	Rabbit	3160 mg/kg	-
	LD50 Oral	Rat	5000 mg/kg	-
Solvent naphtha (petroleum), light arom.	LC50 Inhalation Vapor	Rat	18000 mg/m ³	4 hours
	LD50 Oral	Rat	5 g/kg	-
naphthalene	LC50 Inhalation Vapor	Rat	5.61 mg/l	4 hours
	LD50 Dermal	Rabbit	2000 mg/kg	-
xylene	LD50 Oral	Rat	8400 mg/kg	-
	LD50 Dermal	Rabbit	>20 g/kg	-
ethylbenzene	LD50 Oral	Rat	490 mg/kg	-
	LC50 Inhalation Gas.	Rat	5000 ppm	4 hours
Polyalkylenepolyamine	LD50 Oral	Rat	4300 mg/kg	-
	LD50 Dermal	Rabbit	>5000 mg/kg	-
cumene	LD50 Oral	Rat	3500 mg/kg	-
	LD50 Dermal	Rat	1260 mg/kg	-
mesitylene	LD50 Oral	Rat	2100 mg/kg	-
	LC50 Inhalation Vapor	Rat	39000 mg/m ³	4 hours
	LD50 Oral	Rat	1400 mg/kg	-
	LC50 Inhalation Vapor	Rat	24000 mg/m ³	4 hours
	LD50 Oral	Rat	5000 mg/kg	-

Irritation/Corrosion

Section 11. Toxicological information

Product/ingredient name	Result	Species	Score	Exposure	Observation
Solvent naphtha (petroleum), heavy arom.	Skin - Mild irritant	Rabbit	-	24 hours 500 uL	-
Solvent naphtha (petroleum), light arom.	Eyes - Mild irritant	Rabbit	-	24 hours 100 uL	-
naphthalene	Skin - Mild irritant	Rabbit	-	495 mg	-
	Skin - Severe irritant	Rabbit	-	24 hours 0.05 MI	-
xylene	Eyes - Mild irritant	Rabbit	-	87 mg	-
	Eyes - Severe irritant	Rabbit	-	24 hours 5 mg	-
	Skin - Mild irritant	Rat	-	8 hours 60 uL	-
	Skin - Moderate irritant	Rabbit	-	100 %	-
	Skin - Moderate irritant	Rabbit	-	24 hours 500 mg	-
ethylbenzene	Eyes - Severe irritant	Rabbit	-	500 mg	-
	Skin - Mild irritant	Rabbit	-	24 hours 15 mg	-
Polyalkylenepolyamine	Eyes - Moderate irritant	Rabbit	-	-	-
	Skin - Severe irritant	Rabbit	-	-	-
cumene	Eyes - Mild irritant	Rabbit	-	24 hours 500 mg	-
	Eyes - Mild irritant	Rabbit	-	86 mg	-
	Skin - Mild irritant	Rabbit	-	24 hours 10 mg	-
	Skin - Moderate irritant	Rabbit	-	24 hours 100 mg	-
mesitylene	Eyes - Mild irritant	Rabbit	-	24 hours 500 mg	-
	Skin - Moderate irritant	Rabbit	-	24 hours 20 mg	-

Sensitization

Product/ingredient name	Route of exposure	Species	Result
Polyalkylenepolyamine	skin	Guinea pig	Sensitizing

Mutagenicity

Not available.

Carcinogenicity

Not available.

Classification

Product/ingredient name	OSHA	IARC	NTP
naphthalene	-	2B	Reasonably anticipated to be a human carcinogen.
xylene	-	3	-
ethylbenzene	-	2B	-
cumene	-	2B	Reasonably anticipated to be a human carcinogen.

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Section 11. Toxicological information

Name	Category	Route of exposure	Target organs
2-ethylhexyl nitrate	Category 3	-	Respiratory tract irritation
1,2,4-trimethylbenzene	Category 3	-	Respiratory tract irritation
cumene	Category 3	-	Respiratory tract irritation
mesitylene	Category 3	-	Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
ethylbenzene	Category 2	-	hearing organs

Aspiration hazard

Name	Result
BG DFC PLUS® WITH CETANE IMPROVER	ASPIRATION HAZARD - Category 1
Naphtha (petroleum), hydrotreated heavy	ASPIRATION HAZARD - Category 1
Solvent naphtha (petroleum), heavy arom.	ASPIRATION HAZARD - Category 1
Solvent naphtha (petroleum), light arom.	ASPIRATION HAZARD - Category 1
ethylbenzene	ASPIRATION HAZARD - Category 1
cumene	ASPIRATION HAZARD - Category 1

Information on the likely routes of exposure : Not available.

Potential acute health effects

- Eye contact** : No known significant effects or critical hazards.
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : Defatting to the skin. May cause skin dryness and irritation. May cause an allergic skin reaction.
- Ingestion** : Harmful if swallowed. May be fatal if swallowed and enters airways.

Symptoms related to the physical, chemical and toxicological characteristics

- Eye contact** : No specific data.
- Inhalation** : No specific data.
- Skin contact** : Adverse symptoms may include the following:
irritation
redness
dryness
cracking
- Ingestion** : Adverse symptoms may include the following:
nausea or vomiting

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

- Potential immediate effects** : Not available.
- Potential delayed effects** : Not available.

Long term exposure

- Potential immediate effects** : Not available.
- Potential delayed effects** : Not available.

Potential chronic health effects

Section 11. Toxicological information

Product/ingredient name	Result	Species	Dose	Exposure
Polyalkylenepolyamine	Sub-chronic LOAEL Dermal	Rabbit	50 mg/kg	-
	Sub-chronic LOAEL Oral	Rat	43 mg/kg	-

- General** : Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.
- Carcinogenicity** : Suspected of causing cancer. Risk of cancer depends on duration and level of exposure.
- Mutagenicity** : No known significant effects or critical hazards.
- Teratogenicity** : No known significant effects or critical hazards.
- Developmental effects** : No known significant effects or critical hazards.
- Fertility effects** : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapors) (mg/l)	Inhalation (dusts and mists) (mg/l)
BG DFC PLUS® WITH CETANE IMPROVER	1515.15	3334.5	N/A	N/A	N/A
2-ethylhexyl nitrate	500	1100	N/A	11	N/A
Solvent naphtha (petroleum), heavy arom.	5000	3160	N/A	N/A	N/A
1,2,4-trimethylbenzene	5000	N/A	N/A	18	N/A
Solvent naphtha (petroleum), light arom.	8400	N/A	N/A	N/A	N/A
naphthalene	490	N/A	N/A	N/A	N/A
xylene	4300	1100	5000	N/A	N/A
ethylbenzene	3500	N/A	N/A	11	N/A
Polyalkylenepolyamine	2100	1260	N/A	N/A	N/A
cumene	N/A	N/A	N/A	39	N/A
mesitylene	5000	N/A	N/A	24	N/A

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
Naphtha (petroleum), hydrotreated heavy	Acute LC50 10 mg/l	Fish	96 hours
1,2,4-trimethylbenzene	Chronic NOEC 0.68 mg/l	Daphnia	21 days
	Acute LC50 4910 µg/l Marine water	Crustaceans - Elasmopus pecteniscus - Adult	48 hours
naphthalene	Acute LC50 7720 µg/l Fresh water	Fish - Pimephales promelas	96 hours
	Acute EC50 1.6 mg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
	Acute LC50 2350 µg/l Marine water	Crustaceans - Palaemonetes pugio	48 hours
	Acute LC50 213 µg/l Fresh water	Fish - Melanotaenia fluviatilis - Larvae	96 hours
xylene	Chronic NOEC 0.5 mg/l Marine water	Crustaceans - Uca pugnax - Adult	3 weeks
	Chronic NOEC 1.5 mg/l Fresh water	Fish - Oreochromis mossambicus	60 days
	Acute LC50 8500 µg/l Marine water	Crustaceans - Palaemonetes pugio	48 hours
ethylbenzene	Acute LC50 13400 µg/l Fresh water	Fish - Pimephales promelas	96 hours
	Acute EC50 4900 µg/l Marine water	Algae - Skeletonema costatum	72 hours
	Acute EC50 7700 µg/l Marine water	Algae - Skeletonema costatum	96 hours
	Acute EC50 6.53 mg/l Marine water	Crustaceans - Artemia sp. -	48 hours

Section 12. Ecological information

cumene	Acute EC50 2.93 mg/l Fresh water	Nauplii Daphnia - Daphnia magna - Neonate	48 hours
	Acute LC50 4200 µg/l Fresh water Acute EC50 7.4 mg/l Marine water	Fish - Oncorhynchus mykiss Crustaceans - Artemia sp. - Nauplii	96 hours 48 hours
	Acute EC50 10.6 mg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
mesitylene	Acute LC50 2700 µg/l Fresh water Acute LC50 13000 µg/l Marine water	Fish - Oncorhynchus mykiss Crustaceans - Cancer magister - Zoea	96 hours 48 hours
	Acute LC50 12520 µg/l Fresh water Chronic NOEC 400 µg/l Fresh water	Fish - Carassius auratus Daphnia - Daphnia magna	96 hours 21 days

Persistence and degradability

Not available.

Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
Naphtha (petroleum), hydrotreated heavy 2-ethylhexyl nitrate	- 5.24	10 to 2500 -	high high
Solvent naphtha (petroleum), heavy arom. 1,2,4-trimethylbenzene	2.8 to 6.5 3.63	99 to 5780 243	high low
Solvent naphtha (petroleum), light arom. naphthalene	- 3.4	10 to 2500 36.5 to 168	high low
xylene	3.12	8.1 to 25.9	low
ethylbenzene	3.6	-	low
cumene	3.55	35.48	low
mesitylene	3.42	161	low

Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations










Disposal methods : The generation of waste should be avoided or minimized wherever possible. 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. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

United States - RCRA Toxic hazardous waste "U" List

Section 13. Disposal considerations

Ingredient	CAS #	Status	Reference number
Naphthalene	91-20-3	Listed	U165

Section 14. Transport information

	DOT Classification	TDG Classification	Mexico Classification	ADR/RID	IMDG	IATA
UN number	UN1993	UN1993	UN1993	UN1993	UN1993	UN1993
UN proper shipping name	Flammable liquids, n.o.s. (Naphtha (petroleum), hydrotreated heavy, Solvent naphtha (petroleum), heavy arom.)	FLAMMABLE LIQUID, N.O.S. (Naphtha (petroleum), hydrotreated heavy, Solvent naphtha (petroleum), heavy arom.)	LIQUIDO INFLAMABLE, N.E.P. (Naphtha (petroleum), hydrotreated heavy, Solvent naphtha (petroleum), heavy arom.)	FLAMMABLE LIQUID, N.O.S. (Naphtha (petroleum), hydrotreated heavy, Solvent naphtha (petroleum), heavy arom.)	FLAMMABLE LIQUID, N.O.S. (Naphtha (petroleum), hydrotreated heavy, Solvent naphtha (petroleum), heavy arom.)	Flammable liquid, n.o.s. (Naphtha (petroleum), hydrotreated heavy, Solvent naphtha (petroleum), heavy arom.)
Transport hazard class(es)	3 	3  	3 	3  	3  	3 
Packing group	III	III	III	III	III	III
Environmental hazards	No.	Yes.	Yes. The environmentally hazardous substance mark is not required.	Yes.	Yes.	Yes. The environmentally hazardous substance mark is not required.

Additional information

DOT Classification

: This product may be re-classified as "Combustible Liquid," unless transported by vessel or aircraft. Non-bulk packages (less than or equal to 119 gal) of combustible liquids are not regulated as hazardous materials in package sizes less than the product reportable quantity.

Reportable quantity 7426.6 lbs / 3371.7 kg [1012.8 gal / 3834 L]. Package sizes shipped in quantities less than the product reportable quantity are not subject to the RQ (reportable quantity) transportation requirements.

Limited quantity Yes.

Packaging instruction Exceptions: 150. Non-bulk: 203. Bulk: 242.

Quantity limitation Passenger aircraft/rail: 60 L. Cargo aircraft: 220 L.

Special provisions B1, B52, IB3, T4, TP1, TP29

TDG Classification

: Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.18-2.19 (Class 3), 2.7 (Marine pollutant mark).

The marine pollutant mark is not required when transported by road or rail.

Explosive Limit and Limited Quantity Index 5

Passenger Carrying Road or Rail Index 60

Special provisions 16, 150

Mexico Classification

: **Special provisions** 223, 274

Section 14. Transport information

- ADR/RID** : The environmentally hazardous substance mark is not required when transported in sizes of ≤5 L or ≤5 kg.
Hazard identification number 30
Limited quantity 5 L
Special provisions 274, 601
Tunnel code (D/E)
- IMDG** : The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg.
Emergency schedules F-E, _S-E_
Special provisions 223, 274, 955
- IATA** : The environmentally hazardous substance mark may appear if required by other transportation regulations.
Quantity limitation Passenger and Cargo Aircraft: 60 L. Packaging instructions: 355. Cargo Aircraft Only: 220 L. Packaging instructions: 366. Limited Quantities - Passenger Aircraft: 10 L. Packaging instructions: Y344.
Special provisions A3
Remarks Marine Pollutant:
- Special precautions for user** : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to IMO instruments : Not available.

Section 15. Regulatory information

- U.S. Federal regulations** : **TSCA 8(a) PAIR:** naphthalene
TSCA 8(a) CDR Exempt/Partial exemption: Not determined
Clean Water Act (CWA) 307: naphthalene; ethylbenzene; benzene
Clean Water Act (CWA) 311: naphthalene; xylene; ethylbenzene; benzene

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

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

SARA 302/304

Composition/information on ingredients

No products were found.

SARA 304 RQ : Not applicable.

SARA 311/312

Classification : FLAMMABLE LIQUIDS - Category 3
 ACUTE TOXICITY (oral) - Category 4
 SKIN SENSITIZATION - Category 1
 CARCINOGENICITY - Category 2
 ASPIRATION HAZARD - Category 1
 HNOC - Defatting irritant

Composition/information on ingredients

Section 15. Regulatory information

Name	%	Classification
Naphtha (petroleum), hydrotreated heavy 2-ethylhexyl nitrate	≥25 - ≤50	ASPIRATION HAZARD - Category 1 HNOC - Defatting irritant
	≥25 - ≤50	OXIDIZING LIQUIDS - Category 2 ACUTE TOXICITY (oral) - Category 4 ACUTE TOXICITY (dermal) - Category 4 ACUTE TOXICITY (inhalation) - Category 4 SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
Solvent naphtha (petroleum), heavy arom. 1,2,4-trimethylbenzene	≥10 - ≤25	ASPIRATION HAZARD - Category 1
	≤3	FLAMMABLE LIQUIDS - Category 3 ACUTE TOXICITY (inhalation) - Category 4 SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
Solvent naphtha (petroleum), light arom. naphthalene	≤3	ASPIRATION HAZARD - Category 1
xylene	≤3	ACUTE TOXICITY (oral) - Category 4 CARCINOGENICITY - Category 2
	<1	FLAMMABLE LIQUIDS - Category 3 ACUTE TOXICITY (dermal) - Category 4 ACUTE TOXICITY (inhalation) - Category 4 SKIN IRRITATION - Category 2
ethylbenzene	<1	FLAMMABLE LIQUIDS - Category 2 ACUTE TOXICITY (inhalation) - Category 4 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2
	≤0.3	ASPIRATION HAZARD - Category 1 ACUTE TOXICITY (dermal) - Category 4 SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A
Polyalkylenepolyamine	≤0.3	SKIN SENSITIZATION - Category 1
cumene	≤0.3	FLAMMABLE LIQUIDS - Category 3 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
mesitylene	≤0.3	ASPIRATION HAZARD - Category 1 FLAMMABLE LIQUIDS - Category 3 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3

SARA 313

	Product name	CAS number	%
Form R - Reporting requirements	1,2,4-trimethylbenzene	95-63-6	≤3
	naphthalene	91-20-3	≤3
	ethylbenzene	100-41-4	<1
	cumene	98-82-8	≤0.3
Supplier notification	1,2,4-trimethylbenzene	95-63-6	≤3
	naphthalene	91-20-3	≤3
	ethylbenzene	100-41-4	<1
	cumene	98-82-8	≤0.3

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

State regulations

Massachusetts : The following components are listed: PSEUDOCUMENE; NAPHTHALENE

New York : The following components are listed: Naphthalene

Section 15. Regulatory information

New Jersey : The following components are listed: PSEUDOCUMENE; 1,2,4-TRIMETHYL BENZENE; BENZENE, 1,2,4-TRIMETHYL-; NAPHTHALENE; TAR CAMPHOR; MOTH FLAKES; ETHYL BENZENE; BENZENE, ETHYL-

Pennsylvania : The following components are listed: PSEUDOCUMENE; NAPHTHALENE

California Prop. 65

⚠ WARNING: This product can expose you to chemicals including Benzene, which is known to the State of California to cause cancer and birth defects or other reproductive harm. This product can expose you to chemicals including Naphthalene, Ethylbenzene and cumene, which are known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

Ingredient name	No significant risk level	Maximum acceptable dosage level
Naphthalene	Yes.	-
Ethylbenzene	Yes.	-
cumene	-	-
Benzene	Yes.	Yes.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Ingredient name	List name	Status
PAHs	POPs - Annex 3	Listed

Inventory list

Australia : All components are listed or exempted.

Canada : All components are listed or exempted.

China : All components are listed or exempted.

Eurasian Economic Union : **Russian Federation inventory:** Not determined.

Japan : **Japan inventory (CSCL):** Not determined.
Japan inventory (ISHL): Not determined.

New Zealand : All components are listed or exempted.

Philippines : All components are listed or exempted.

Republic of Korea : Not determined.

Taiwan : Not determined.

Thailand : Not determined.

Turkey : Not determined.

United States : All components are active or exempted.

Viet Nam : Not determined.

Section 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 and the associated label are not required on SDSs or products leaving a facility 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 trademark and service mark of the American Coatings Association, Inc.

The customer is responsible for determining the PPE code for this material. For more information on HMIS® Personal Protective Equipment (PPE) codes, consult the HMIS® Implementation Manual.

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



Procedure used to derive the classification

Classification	Justification
FLAMMABLE LIQUIDS - Category 3	On basis of test data
ACUTE TOXICITY (oral) - Category 4	Calculation method
SKIN SENSITIZATION - Category 1	Calculation method
CARCINOGENICITY - Category 2	Calculation method
ASPIRATION HAZARD - Category 1	On basis of test data
AQUATIC HAZARD (LONG-TERM) - Category 2	Calculation method

History

Date of printing	: 3/1/2023
Date of issue/Date of revision	: 3/1/2023
Date of previous issue	: 3/1/2023
Version	: 9.01
Formulation Version number	: 32

Key to abbreviations

: ATE = Acute Toxicity Estimate
: BCF = Bioconcentration Factor
: GHS = Globally Harmonized System of Classification and Labelling of Chemicals
: IATA = International Air Transport Association
: IBC = Intermediate Bulk Container
: IMDG = International Maritime Dangerous Goods
: LogPow = logarithm of the octanol/water partition coefficient
: MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
: N/A = Not available
: SGG = Segregation Group
: UN = United Nations

References

: Not available.

☑ Indicates information that has changed from previously issued version.

Notice to reader

Section 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.