SAFETY DATA SHEET

BG Fuel Injection & Combustion Chamber Cleaner

Section 1. Identification

GHS product identifier : BG Fuel Injection & Combustion Chamber Cleaner

Product code : 201

Other means of identification : P201-xxxx; 201B, 201WOR, 201CCWOR, 2015E, P201

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 2
SKIN IRRITATION - Category 2
SERIOUS EYE DAMAGE - Category 1
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2
ASPIRATION HAZARD - Category 1
AQUATIC HAZARD (ACUTE) - Category 2
AQUATIC HAZARD (LONG-TERM) - Category 2

Percentage of the mixture consisting of ingredient(s) of unknown acute oral toxicity: 10%
Percentage of the mixture consisting of ingredient(s) of unknown acute dermal toxicity: 10%
Percentage of the mixture consisting of ingredient(s) of unknown acute inhalation toxicity: 10%

GHS label elements

Hazard pictograms :

Signal word : Danger

Section 2. Hazards identification

Hazard statements : Highly flammable liquid and vapor.
May be fatal if swallowed and enters airways.
Causes skin irritation.
Causes serious eye damage.
May cause drowsiness or dizziness.
May cause damage to organs through prolonged or repeated exposure. (hearing organs) (oral)
Toxic to aquatic life with long lasting effects.
Prolonged or repeated contact may dry skin and cause irritation.

Precautionary statements

Prevention : 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. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Do not breathe vapor. Wash thoroughly after handling.

Response : Collect spillage. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor if you feel unwell. IF SWALLOWED: Immediately call a POISON CENTER or doctor. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. IF ON SKIN: Wash with plenty of water. If skin irritation occurs: Get medical advice or attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor.

Storage : Store locked up. Store in a well-ventilated place. Keep container tightly closed.

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 : P201-xxxx; 201B, 201WOR, 201CCWOR, 2015E, P201

Ingredient name	%	CAS number
Naphtha (petroleum), hydrotreated heavy	≥10 - ≤25	64742-48-9
Naphtha (petroleum), hydrotreated light	≥10 - ≤25	64742-49-0
xylene	≥10 - ≤20	1330-20-7
propan-2-ol	≥10 - ≤25	67-63-0
2-butoxyethanol	≤10	111-76-2
heptane	≤10	142-82-5
ethylbenzene	≤10	100-41-4
butan-1-ol	≤7.5	71-36-3
morpholine	≤1.7	110-91-8
Alkenyl amine	≤3	Confidential

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.

Section 3. Composition/information on ingredients

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

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Get medical attention immediately. Call a poison center or physician. 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. Chemical burns must be treated promptly by a physician.

Inhalation : Get medical attention immediately. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. 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. 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 : Get medical attention immediately. Call a poison center or physician. 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. Chemical burns must be treated promptly by a physician. 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. Chemical burns must be treated promptly by a physician. 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 : Causes serious eye damage.

Inhalation : Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness.

Skin contact : Causes skin irritation. Defatting to the skin.

Ingestion : Can cause central nervous system (CNS) depression. May be fatal if swallowed and enters airways.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:
pain
watering
redness

Inhalation : Adverse symptoms may include the following:
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness

Section 4. First aid measures

Skin contact : Adverse symptoms may include the following:
pain or irritation
redness
dryness
cracking
blistering may occur

Ingestion : Adverse symptoms may include the following:
stomach pains
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. 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.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Use dry chemical, CO_2, water spray (fog) or foam.

Unsuitable extinguishing media : Do not use water jet.

Specific hazards arising from the chemical : Highly 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. Do not breathe 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".

Section 6. Accidental release measures

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). Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not swallow. 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

Section 8. Exposure controls/personal protection

Ingredient name	Exposure limits
Naphtha (petroleum), hydrotreated heavy	None.
Naphtha (petroleum), hydrotreated light	None.
xylene	**OSHA PEL 1989 (United States, 3/1989). [Xylenes (o-, m-, p-isomers)]** 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). [Xylenes (o-, m-, p-isomers)]** TWA: 100 ppm 8 hours. TWA: 435 mg/m³ 8 hours. **CAL OSHA PEL (United States, 5/2018). [xylene]** STEL: 655 mg/m³ 15 minutes. STEL: 150 ppm 15 minutes. CEIL: 300 ppm TWA: 435 mg/m³ 8 hours. TWA: 100 ppm 8 hours. **ACGIH TLV (United States, 1/2022). [p-xylene and mixtures containing p-xylene] Ototoxicant.** TWA: 20 ppm 8 hours.
propan-2-ol	**ACGIH TLV (United States, 1/2021).** TWA: 200 ppm 8 hours. STEL: 400 ppm 15 minutes. **OSHA PEL 1989 (United States, 3/1989).** TWA: 400 ppm 8 hours. TWA: 980 mg/m³ 8 hours. STEL: 500 ppm 15 minutes. STEL: 1225 mg/m³ 15 minutes. **NIOSH REL (United States, 10/2020).** TWA: 400 ppm 10 hours. TWA: 980 mg/m³ 10 hours. STEL: 500 ppm 15 minutes. STEL: 1225 mg/m³ 15 minutes. **OSHA PEL (United States, 5/2018).** TWA: 400 ppm 8 hours. TWA: 980 mg/m³ 8 hours.
2-butoxyethanol	**OSHA PEL 1989 (United States, 3/1989). Absorbed through skin.** TWA: 25 ppm 8 hours. TWA: 120 mg/m³ 8 hours. **NIOSH REL (United States, 10/2020). Absorbed through skin.** TWA: 5 ppm 10 hours. TWA: 24 mg/m³ 10 hours. **ACGIH TLV (United States, 1/2022).** TWA: 20 ppm 8 hours. **OSHA PEL (United States, 5/2018). Absorbed through skin.** TWA: 50 ppm 8 hours. TWA: 240 mg/m³ 8 hours. **CAL OSHA PEL (United States, 5/2018). Absorbed through skin.** TWA: 97 mg/m³ 8 hours. TWA: 20 ppm 8 hours.
heptane	**ACGIH TLV (United States, 1/2022). [Heptane (all isomers)]**

Section 8. Exposure controls/personal protection

	TWA: 400 ppm 8 hours. TWA: 1640 mg/m³ 8 hours. STEL: 500 ppm 15 minutes. STEL: 2050 mg/m³ 15 minutes. **OSHA PEL 1989 (United States, 3/1989).** TWA: 400 ppm 8 hours. TWA: 1600 mg/m³ 8 hours. STEL: 500 ppm 15 minutes. STEL: 2000 mg/m³ 15 minutes. **NIOSH REL (United States, 10/2020).** TWA: 85 ppm 10 hours. TWA: 350 mg/m³ 10 hours. CEIL: 440 ppm 15 minutes. CEIL: 1800 mg/m³ 15 minutes. **OSHA PEL (United States, 5/2018).** TWA: 500 ppm 8 hours. TWA: 2000 mg/m³ 8 hours. **CAL OSHA PEL (United States, 5/2018).** STEL: 2000 mg/m³ 15 minutes. STEL: 500 ppm 15 minutes. TWA: 1600 mg/m³ 8 hours. TWA: 400 ppm 8 hours.
ethylbenzene	**ACGIH TLV (United States, 1/2022).** **Ototoxicant.** 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. **CAL OSHA PEL (United States, 5/2018).** STEL: 130 mg/m³ 15 minutes. STEL: 30 ppm 15 minutes. TWA: 22 mg/m³ 8 hours. TWA: 5 ppm 8 hours.
butan-1-ol	**ACGIH TLV (United States, 1/2022).** TWA: 20 ppm 8 hours. **OSHA PEL 1989 (United States, 3/1989).** **Absorbed through skin.** CEIL: 50 ppm CEIL: 150 mg/m³ **NIOSH REL (United States, 10/2020).** **Absorbed through skin.** CEIL: 50 ppm CEIL: 150 mg/m³ **OSHA PEL (United States, 5/2018).** TWA: 100 ppm 8 hours. TWA: 300 mg/m³ 8 hours. **CAL OSHA PEL (United States, 5/2018).** **Absorbed through skin.** CEIL: 150 mg/m³ CEIL: 50 ppm
morpholine	**ACGIH TLV (United States, 1/2022).**

Section 8. Exposure controls/personal protection

	Absorbed through skin. TWA: 20 ppm 8 hours. TWA: 71 mg/m³ 8 hours. **OSHA PEL 1989 (United States, 3/1989).** **Absorbed through skin.** TWA: 20 ppm 8 hours. TWA: 70 mg/m³ 8 hours. STEL: 30 ppm 15 minutes. STEL: 105 mg/m³ 15 minutes. **NIOSH REL (United States, 10/2020).** **Absorbed through skin.** TWA: 20 ppm 10 hours. TWA: 70 mg/m³ 10 hours. STEL: 30 ppm 15 minutes. STEL: 105 mg/m³ 15 minutes. **OSHA PEL (United States, 5/2018).** **Absorbed through skin.** TWA: 20 ppm 8 hours. TWA: 70 mg/m³ 8 hours. **CAL OSHA PEL (United States, 5/2018).** **Absorbed through skin.** STEL: 105 mg/m³ 15 minutes. STEL: 30 ppm 15 minutes. TWA: 70 mg/m³ 8 hours. TWA: 20 ppm 8 hours.
Alkenyl amine	None.

Biological exposure indices

Ingredient name	Exposure indices
xylene	**ACGIH BEI (United States, 1/2022)** **[XYLENES (technical or commercial grade)]** BEI: 1.5 g/g creatinine, methylhippuric acids [in urine]. Sampling time: end of shift.
2-butoxyethanol	**ACGIH BEI (United States, 1/2022)** BEI: 200 mg/g creatinine, butoxyacetic acid (BAA) [in urine]. Sampling time: end of shift.
ethylbenzene	**ACGIH BEI (United States, 1/2022)** BEI: 0.15 g/g creatinine, sum of mandelic acid and phenylglyoxylic acid [in urine]. Sampling time: end of shift.

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. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Section 8. Exposure controls/personal protection

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: chemical splash goggles and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead.

Skin protection

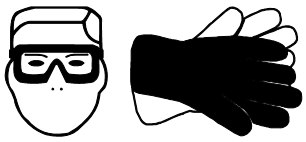
Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are 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.

Personal protective equipment (Pictograms) :



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 : Yellow. [Light]

Odor : Solvent. [Slight]

Odor threshold : Not available.

pH : Not available.

Melting point/freezing point : -46°C (-50.8°F)

Boiling point, initial boiling point, and boiling range : 72°C (161.6°F)

Flash point : Closed cup: 11°C (51.8°F)

Evaporation rate : Not available.

Flammability : Not available.

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

Vapor pressure :

Section 9. Physical and chemical properties and safety characteristics

Ingredient name	Vapor Pressure at 20°C			Vapor pressure at 50°C		
	mm Hg	kPa	Method	mm Hg	kPa	Method
benzene	75.01	10				
Naphtha (petroleum), hydrotreated light	42.15	5.6	OECD 104	357.48	47.7	OECD 104
heptane	34.5	4.6				
Isopropyl alcohol	33	4.4				
ethylbenzene	9.3	1.2				
morpholine	7.35	0.98	OECD 104			
butan-1-ol	<7.5	<1	DIN EN 13016-2			
xylene	6.7	0.89				
cumene	3.72	0.5				
Naphtha (petroleum), hydrotreated heavy	0.75 to 2.25	0.1 to 0.3				
2-butoxyethanol	0.75	0.1				

Relative vapor density : Not available.

Relative density : 0.8137

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-butoxyethanol	230	446	DIN 51794
morpholine	255	491	DIN 51794
Naphtha (petroleum), hydrotreated heavy	280 to 470	536 to 878	
Naphtha (petroleum), hydrotreated light	280 to 470	536 to 878	DIN EN 14522
heptane	285	545	
butan-1-ol	355	671	EU A.15
cumene	424	795.2	
xylene	432	809.6	
ethylbenzene	432.22	810	
Isopropyl alcohol	456	852.8	
benzene	498	928.4	

Decomposition temperature : Not available.

Viscosity : Kinematic (40°C (104°F)): 1.23 mm^2/s (1.23 cSt)

Flow time (ISO 2431) : Not available.

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	LD50 Oral	Rat	>6 g/kg	-
Naphtha (petroleum), hydrotreated light	LC50 Inhalation Dusts and mists	Rat	5.61 mg/l	4 hours
	LD50 Dermal	Rabbit	2000 mg/kg	-
	LD50 Oral	Rat	5000 mg/kg	-
xylene	LC50 Inhalation Gas.	Rat	5000 ppm	4 hours
	LD50 Oral	Rat	4300 mg/kg	-
propan-2-ol	LC50 Inhalation Dusts and mists	Rat	16000 ppm	8 hours
	LC50 Inhalation Vapor	Rat	25 mg/l	4 hours
	LD50 Dermal	Rabbit	12800 mg/kg	-
	LD50 Oral	Rat	5000 mg/kg	-
2-butoxyethanol	LD50 Oral	Rat	917 mg/kg	-
heptane	LC50 Inhalation Dusts and mists	Rat	73.5 mg/l	4 hours
	LC50 Inhalation Gas.	Rat	48000 ppm	4 hours
	LC50 Inhalation Vapor	Rat	103 g/m³	4 hours
	LD50 Dermal	Rabbit	2000 mg/kg	-
	LD50 Oral	Rat	5000 mg/kg	-
ethylbenzene	LD50 Dermal	Rabbit	>5000 mg/kg	-
	LD50 Oral	Rat	3500 mg/kg	-
butan-1-ol	LC50 Inhalation Vapor	Rat	24000 mg/m³	4 hours
	LD50 Dermal	Rabbit	3400 mg/kg	-
	LD50 Oral	Rat	790 mg/kg	-
morpholine	LD50 Oral	Rat	1738 mg/kg	-

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
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	-
propan-2-ol	Eyes - Moderate irritant	Rabbit	-	10 mg	-
	Eyes - Moderate irritant	Rabbit	-	24 hours 100 mg	-

Section 11. Toxicological information

	Eyes - Severe irritant	Rabbit	-	100 mg	-
	Skin - Mild irritant	Rabbit	-	500 mg	-
2-butoxyethanol	Eyes - Moderate irritant	Rabbit	-	24 hours 100 mg	-
	Eyes - Severe irritant	Rabbit	-	100 mg	-
	Skin - Mild irritant	Rabbit	-	500 mg	-
ethylbenzene	Eyes - Severe irritant	Rabbit	-	500 mg	-
	Skin - Mild irritant	Rabbit	-	24 hours 15 mg	-
butan-1-ol	Eyes - Severe irritant	Rabbit	-	0.005 Ml	-
	Eyes - Severe irritant	Rabbit	-	24 hours 2 mg	-
	Skin - Moderate irritant	Rabbit	-	24 hours 20 mg	-
morpholine	Eyes - Severe irritant	Rabbit	-	2 mg	-
	Skin - Moderate irritant	Rabbit	-	500 mg	-

Sensitization

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Classification

Product/ingredient name	OSHA	IARC	NTP
xylene	-	3	-
propan-2-ol	-	3	-
2-butoxyethanol	-	3	-
ethylbenzene	-	2B	-
morpholine	-	3	-

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
BG Fuel Injection & Combustion Chamber Cleaner	Category 3	-	Narcotic effects
propan-2-ol	Category 3	-	Narcotic effects
heptane	Category 3	-	Narcotic effects
butan-1-ol	Category 3	-	Respiratory tract irritation
	Category 3		Narcotic effects
Alkenyl amine	Category 3	-	Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
BG Fuel Injection & Combustion Chamber Cleaner	Category 2	oral	hearing organs
ethylbenzene	Category 2	-	hearing organs

Aspiration hazard

Section 11. Toxicological information

Name	Result
BG Fuel Injection & Combustion Chamber Cleaner	ASPIRATION HAZARD - Category 1
Naphtha (petroleum), hydrotreated heavy	ASPIRATION HAZARD - Category 1
Naphtha (petroleum), hydrotreated light	ASPIRATION HAZARD - Category 1
heptane	ASPIRATION HAZARD - Category 1
ethylbenzene	ASPIRATION HAZARD - Category 1
Alkenyl amine	ASPIRATION HAZARD - Category 1

Information on the likely routes of exposure : Not available.

Potential acute health effects

Eye contact : Causes serious eye damage.

Inhalation : Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness.

Skin contact : Causes skin irritation. Defatting to the skin.

Ingestion : Can cause central nervous system (CNS) depression. May be fatal if swallowed and enters airways.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following:
pain
watering
redness

Inhalation : Adverse symptoms may include the following:
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness

Skin contact : Adverse symptoms may include the following:
pain or irritation
redness
dryness
cracking
blistering may occur

Ingestion : Adverse symptoms may include the following:
stomach pains
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

Not available.

General : May cause damage to organs through prolonged or repeated exposure if swallowed. Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis.

Carcinogenicity : No known significant effects or critical hazards.

Section 11. Toxicological information

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 Fuel Injection & Combustion Chamber Cleaner	7521.3	6990.0	34513.7	73.1	N/A
Naphtha (petroleum), hydrotreated light	5000	N/A	N/A	N/A	5.61
xylene	4300	1100	5000	N/A	N/A
propan-2-ol	5000	12800	N/A	25	N/A
2-butoxyethanol	1200	N/A	N/A	11	N/A
heptane	5000	N/A	48000	103	73.5
ethylbenzene	3500	N/A	N/A	11	N/A
butan-1-ol	790	3400	N/A	24	N/A
morpholine	1738	1100	N/A	11	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
	Chronic NOEC 0.68 mg/l	Daphnia	21 days
xylene	Acute LC50 8500 µg/l Marine water	Crustaceans - Palaemonetes pugio	48 hours
	Acute LC50 13400 µg/l Fresh water	Fish - Pimephales promelas	96 hours
propan-2-ol	Acute EC50 7550 mg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
	Acute LC50 1400000 µg/l Marine water	Crustaceans - Crangon crangon	48 hours
	Acute LC50 4200 mg/l Fresh water	Fish - Rasbora heteromorpha	96 hours
2-butoxyethanol	Acute EC50 >1000 mg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 800000 µg/l Marine water	Crustaceans - Crangon crangon	48 hours
	Acute LC50 1250000 µg/l Marine water	Fish - Menidia beryllina	96 hours
heptane	Acute LC50 375000 µg/l Fresh water	Fish - Oreochromis mossambicus	96 hours
ethylbenzene	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. - Nauplii	48 hours
	Acute EC50 2.93 mg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
	Acute LC50 4200 µg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours
butan-1-ol	Acute EC50 1983 mg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 1730000 µg/l Fresh water	Fish - Pimephales promelas	96 hours
morpholine	Acute LC50 180 mg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours
	Chronic NOEC 50 mg/l	Algae - Desmodesmus subspicatus	3 days
Alkenyl amine	EC50 0.13 mg/l	Algae	3 days
	EC50 0.011 mg/l	Daphnia	2 days
	LC50 0.11 mg/l	Fish	4 days
	NOEC 0.013 mg/l	Daphnia	21 days

Section 12. Ecological information

Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
Alkenyl amine	OECD TG 301 B OECD TG 301 D	66 % - Readily - 28 days 44 % - Readily - 28 days	- -	- -

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Alkenyl amine	-	-	Readily

Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
Naphtha (petroleum), hydrotreated heavy	-	10 to 2500	high
Naphtha (petroleum), hydrotreated light	2.2 to 5.2	10 to 2500	high
xylene	3.12	8.1 to 25.9	low
propan-2-ol	0.05	-	low
2-butoxyethanol	0.81	-	low
heptane	4.66	552	high
ethylbenzene	3.6	-	low
butan-1-ol	1	-	low
morpholine	-2.55	<2.8	low
Alkenyl amine	4.33	500	high

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

Ingredient	CAS #	Status	Reference number
Xylene	1330-20-7	Listed	U239
1-Butanol (I)	71-36-3	Listed	U031

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. (xylene, Isopropyl alcohol)	FLAMMABLE LIQUID, N.O.S. (xylene, Isopropyl alcohol)	LIQUIDO INFLAMABLE, N.E.P. (xylene, Isopropyl alcohol)	FLAMMABLE LIQUID, N.O.S. (xylene, Isopropyl alcohol)	FLAMMABLE LIQUID, N.O.S. (xylene, Isopropyl alcohol)	Flammable liquid, n.o.s. (xylene, Isopropyl alcohol)
Transport hazard class(es)	3 	3 	3 	3 	3 	3 
Packing group	II	II	II	II	II	II
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 :
Reportable quantity 690.13 lbs / 313.32 kg [101.72 gal / 385.06 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: 202. Bulk: 242.
Quantity limitation Passenger aircraft/rail: 5 L. Cargo aircraft: 60 L.
Special provisions IB2, T7, TP1, TP8, TP28

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 1
Passenger Carrying Road or Rail Index 5
Special provisions 16, 150

Mexico Classification :
Special provisions 274

ADR/RID :
The environmentally hazardous substance mark is not required when transported in sizes of ≤5 L or ≤5 kg.
Hazard identification number 33
Limited quantity 1 L
Special provisions 601, 274, 640C
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 274

IATA :
The environmentally hazardous substance mark may appear if required by other transportation regulations.
Quantity limitation Passenger and Cargo Aircraft: 5 L. Packaging instructions: 353. Cargo Aircraft Only: 60 L. Packaging instructions: 364. Limited Quantities - Passenger Aircraft: 1 L. Packaging instructions: Y341.
Special provisions A3

Section 14. Transport information

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**: heptane

TSCA 8(a) CDR Exempt/Partial exemption: Not determined

Clean Water Act (CWA) 307: ethylbenzene; benzene

Clean Water Act (CWA) 311: 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 2
SKIN IRRITATION - Category 2
SERIOUS EYE DAMAGE - Category 1
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2
ASPIRATION HAZARD - Category 1
HNOC - Defatting irritant

Composition/information on ingredients

Name	%	Classification
Naphtha (petroleum), hydrotreated heavy	≥10 - ≤25	ASPIRATION HAZARD - Category 1 HNOC - Defatting irritant
Naphtha (petroleum), hydrotreated light	≥10 - ≤25	ASPIRATION HAZARD - Category 1
xylene	≥10 - ≤20	FLAMMABLE LIQUIDS - Category 3 ACUTE TOXICITY (dermal) - Category 4 ACUTE TOXICITY (inhalation) - Category 4 SKIN IRRITATION - Category 2
propan-2-ol	≥10 - ≤25	FLAMMABLE LIQUIDS - Category 2 EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3
2-butoxyethanol	≤10	ACUTE TOXICITY (oral) - Category 4 ACUTE TOXICITY (inhalation) - Category 4 SKIN IRRITATION - Category 2

Section 15. Regulatory information

heptane	≤10	EYE IRRITATION - Category 2A FLAMMABLE LIQUIDS - Category 2 SKIN IRRITATION - Category 2 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3 ASPIRATION HAZARD - Category 1
ethylbenzene	≤10	FLAMMABLE LIQUIDS - Category 2 ACUTE TOXICITY (inhalation) - Category 4 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2 ASPIRATION HAZARD - Category 1
butan-1-ol	≤7.5	FLAMMABLE LIQUIDS - Category 3 ACUTE TOXICITY (oral) - Category 4 SKIN IRRITATION - Category 2 SERIOUS EYE DAMAGE - Category 1 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3
morpholine	≤1.7	FLAMMABLE LIQUIDS - Category 3 ACUTE TOXICITY (oral) - Category 4 ACUTE TOXICITY (dermal) - Category 4 ACUTE TOXICITY (inhalation) - Category 4 SKIN CORROSION - Category 1B SERIOUS EYE DAMAGE - Category 1
Alkenyl amine	≤3	SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 ASPIRATION HAZARD - Category 1

SARA 313

	Product name	CAS number	%
Form R - Reporting requirements	xylene Isopropyl alcohol 2-butoxyethanol ethylbenzene butan-1-ol cumene	1330-20-7 67-63-0 111-76-2 100-41-4 71-36-3 98-82-8	≥10 - ≤20 ≥10 - ≤25 ≤10 ≤10 ≤7.5 ≤0.3
Supplier notification	xylene Isopropyl alcohol 2-butoxyethanol ethylbenzene butan-1-ol cumene	1330-20-7 67-63-0 111-76-2 100-41-4 71-36-3 98-82-8	≥10 - ≤20 ≥10 - ≤25 ≤10 ≤10 ≤7.5 ≤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: XYLENE; ISOPROPYL ALCOHOL; 2-PROPANOL; 2-BUTOXYETHANOL; HEPTANE; ETHYL BENZENE; N-BUTYL ALCOHOL; MORPHOLINE

New York : The following components are listed: Xylene mixed; Ethylbenzene; Butyl alcohol

New Jersey : The following components are listed: XYLENES; ISOPROPYL ALCOHOL; 2-PROPANOL; ISOPROPANOL; 2-BUTOXY ETHANOL; n-HEPTANE; ETHYL BENZENE; n-BUTYL ALCOHOL; MORPHOLINE

Pennsylvania : The following components are listed: BENZENE, DIMETHYL-; 2-PROPANOL; ETHANOL, 2-BUTOXY-; HEPTANE; BENZENE, ETHYL-; 1-BUTANOL; MORPHOLINE

California Prop. 65

Section 15. Regulatory information

⚠ **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 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
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

Not 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 : All components are listed or exempted.

Taiwan : All components are listed or exempted.

Thailand : All components are listed or exempted.

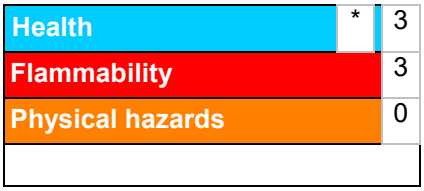
Turkey : All components are listed or exempted.

United States : All components are active or exempted.

Viet Nam : All components are listed or exempted.

Section 16. Other information

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



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.

Section 16. Other information

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 2	On basis of test data
SKIN IRRITATION - Category 2	Calculation method
SERIOUS EYE DAMAGE - Category 1	Calculation method
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3	Calculation method
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2	Calculation method
ASPIRATION HAZARD - Category 1	On basis of test data
AQUATIC HAZARD (ACUTE) - Category 2	Calculation method
AQUATIC HAZARD (LONG-TERM) - Category 2	Calculation method

History

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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.

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