Material Safety Data Sheet

ISC® Induction System Cleaner

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 # : 211

Validation date : 1/24/2011.

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 : Aromatic.

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

Emergency overview : DANGER!

EXTREMELY FLAMMABLE LIQUID AND VAPOR. FLAMMABLE. VAPOR MAY CAUSE FLASH FIRE. MAY BE HARMFUL IF ABSORBED THROUGH SKIN. CONTAINS MATERIAL THAT MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA. POSSIBLE CANCER HAZARD - CONTAINS MATERIAL WHICH MAY CAUSE CANCER, BASED ON ANIMAL DATA.

Do not handle until all safety precautions have been read and understood. Obtain special instructions before use. Do not breathe vapor or mist. Use only with adequate ventilation. Do not eat, drink or smoke when using this product. Avoid prolonged contact with eyes, skin and clothing. Keep away from heat, sparks and flame. Keep container tightly closed. Use personal protective equipment as required. Wash thoroughly after handling.

Potential acute health effects

Inhalation : Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

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, based on animal data. 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-methyl-2-pyrrolidone	872-50-4	30 - 60
xylene	1330-20-7	15 - 40
Ligroine	8032-32-4	5 - 10
ETHYLBENZENE	100-41-4	1 - 5
Isopropanol	67-63-0	1 - 5

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 immediately.

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 immediately.

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 immediately.

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 immediately.

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.

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 : Extremely flammable liquid. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Runoff to sewer may create fire or explosion hazard.

Extinguishing media

Suitable : Use dry chemical, CO_2, 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.

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. Avoid breathing 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).

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. Remove contaminated clothing and protective equipment before entering eating areas. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapor or mist. 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-methyl-2-pyrrolidone	**AIHA WEEL (United States, 1/2009). Absorbed through skin.** TWA: 10 ppm 8 hour(s).
xylene	**ACGIH TLV (United States, 2/2010).** 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). **OSHA PEL 1989 (United States, 3/1989).** TWA: 100 ppm 8 hour(s). TWA: 435 mg/m³ 8 hour(s). STEL: 150 ppm 15 minute(s). STEL: 655 mg/m³ 15 minute(s). **OSHA PEL (United States, 11/2006).** TWA: 100 ppm 8 hour(s). TWA: 435 mg/m³ 8 hour(s).
Ligroine	**OSHA PEL 1989 (United States, 3/1989).** TWA: 300 ppm 8 hour(s). TWA: 1350 mg/m³ 8 hour(s). STEL: 400 ppm 15 minute(s). STEL: 1800 mg/m³ 15 minute(s). **NIOSH REL (United States, 6/2009).** TWA: 350 mg/m³ 8 hour(s). CEIL: 1800 mg/m³ 15 minute(s).
ETHYLBENZENE	**ACGIH TLV (United States, 2/2010).** TWA: 100 ppm 8 hour(s). STEL: 125 ppm 15 minute(s). **OSHA PEL 1989 (United States, 3/1989).** TWA: 100 ppm 8 hour(s). TWA: 435 mg/m³ 8 hour(s). STEL: 125 ppm 15 minute(s). STEL: 545 mg/m³ 15 minute(s). **NIOSH REL (United States, 6/2009).** TWA: 100 ppm 10 hour(s). TWA: 435 mg/m³ 10 hour(s). STEL: 125 ppm 15 minute(s). STEL: 545 mg/m³ 15 minute(s). **OSHA PEL (United States, 11/2006).** TWA: 100 ppm 8 hour(s). TWA: 435 mg/m³ 8 hour(s).
Isopropanol	**ACGIH TLV (United States, 2/2010).** TWA: 200 ppm 8 hour(s). STEL: 400 ppm 15 minute(s). **OSHA PEL 1989 (United States, 3/1989).** TWA: 400 ppm 8 hour(s). TWA: 980 mg/m³ 8 hour(s). STEL: 500 ppm 15 minute(s). STEL: 1225 mg/m³ 15 minute(s). **NIOSH REL (United States, 6/2009).** TWA: 400 ppm 10 hour(s). TWA: 980 mg/m³ 10 hour(s). STEL: 500 ppm 15 minute(s). STEL: 1225 mg/m³ 15 minute(s). **OSHA PEL (United States, 11/2006).** TWA: 400 ppm 8 hour(s). TWA: 980 mg/m³ 8 hour(s).

Consult local authorities for acceptable exposure limits.

8. Exposure controls/personal protection

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.

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: -17°C (1.4°F) [Tagliabue.]

Auto-ignition temperature : 270°C (518°F)

Flammable limits : Lower: 2%
Upper: 12%

Color : Clear.

Odor : Aromatic.

pH : Not available.

Boiling/condensation point : 137°C (278.6°F)

Melting/freezing point : -28°C (-18.4°F)

Specific gravity : 0.8681

Vapor pressure : Not available.

Vapor density : Not available.

Odor threshold : Not available.

Evaporation rate : Not available.

Dispersibility properties : Not dispersible in the following materials: cold water and hot water.

9. Physical and chemical properties

Solubility : Soluble in the following materials: methanol and diethyl ether.
Partially soluble in the following materials: acetone.
Very slightly soluble in the following materials: n-octanol.
Insoluble in the following materials: cold water and hot water.

Density : 7.237 (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.

Materials to avoid : Highly 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
1-methyl-2-pyrrolidone	LD50 Dermal	Rabbit	8 g/kg	-
	LD50 Oral	Rat	3914 mg/kg	-
xylene	LC50 Inhalation Gas.	Rat	5000 ppm	4 hours
	LD50 Dermal	Rabbit	>1700 mg/kg	-
	LD50 Oral	Rat	4300 mg/kg	-
Ligroine	LC50 Inhalation Gas.	Rat	3400 ppm	4 hours
ETHYLBENZENE	LD50 Dermal	Rabbit	>5000 mg/kg	-
	LD50 Oral	Rat	3500 mg/kg	-
Isopropanol	LD50 Dermal	Rabbit	12800 mg/kg	-
	LD50 Oral	Rat	5000 mg/kg	-

Carcinogenicity

Classification

Product/ingredient name	ACGIH	IARC	EPA	NIOSH	NTP	OSHA
xylene	A4	3	-	-	-	-
Ligroine	A3	-	-	-	-	-
ETHYLBENZENE	A3	2B	-	-	-	-
Isopropanol	A4	3	-	-	-	-

12. Ecological information

Product/ingredient name	Result	Species	Exposure
1-methyl-2-pyrrolidone	Acute LC50 1.23 ppm Fresh water	Daphnia - Daphnia magna - <24 hours	48 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
ETHYLBENZENE	Acute EC50 2930 ug/L Fresh water	Daphnia - Daphnia magna - Neonate - <=24 hours	48 hours
	Acute LC50 >5200 ug/L Marine water	Crustaceans - Americamysis bahia - <24 hours	48 hours
	Acute LC50 4200 ug/L Fresh water	Fish - Oncorhynchus mykiss	96 hours
	Chronic NOEC 6800 ug/L Fresh water	Daphnia - Daphnia magna - <=24	48 hours

12. Ecological information

Isopropanol	Chronic NOEC 3300 ug/L Marine water Acute LC50 1400000 ug/L Marine water Acute LC50 >1400000 ug/L	hours Fish - Menidia menidia Crustaceans - Crangon crangon Fish - Gambusia affinis - 20 to 30 mm	96 hours 48 hours 96 hours

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

13. Disposal considerations

Waste disposal : The generation of waste should be avoided or minimized wherever possible. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. 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. 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.

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

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	UN1993	FLAMMABLE LIQUIDS, N.O.S. (1-methyl-2-pyrrolidone, xylene)	3	II		-
IMDG Class	UN1993	FLAMMABLE LIQUIDS, N.O.S. (1-methyl-2-pyrrolidone, xylene)	3	II		**Emergency schedules (EmS)** F-E,S-E
IATA-DGR Class	UN1993	FLAMMABLE LIQUIDS, N.O.S. (1-methyl-2-pyrrolidone, xylene)	3	II		**Passenger and Cargo Aircraft** Quantity limitation: 5 L **Cargo Aircraft Only** Quantity limitation: 60 L **Limited Quantities - Passenger Aircraft** Quantity limitation: 1 L

PG* : Packing group

15. Regulatory information

United States

HCS Classification : Flammable liquid
Carcinogen
Target organ effects

U.S. Federal regulations : **TSCA 8(a) IUR Exempt/Partial exemption**: Not determined

United States inventory (TSCA 8b): All components are listed or exempted.

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: 1-methyl-2-pyrrolidone; xylene; Ligroine; ETHYLBENZENE; Isopropanol
SARA 311/312 MSDS distribution - chemical inventory - hazard identification: 1-methyl-2-pyrrolidone: Fire hazard, Immediate (acute) health hazard, Delayed (chronic) health hazard; xylene: Fire hazard, Immediate (acute) health hazard, Delayed (chronic) health hazard; Ligroine: Fire hazard, Immediate (acute) health hazard; ETHYLBENZENE: Fire hazard, Immediate (acute) health hazard, Delayed (chronic) health hazard; Isopropanol: Fire hazard, Immediate (acute) health hazard, Delayed (chronic) health hazard

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

SARA 313

	Product name	CAS number	Concentration
Form R - Reporting requirements	1-methyl-2-pyrrolidone xylene ETHYLBENZENE Isopropanol	872-50-4 1330-20-7 100-41-4 67-63-0	30 - 60 15 - 40 1 - 5 1 - 5
Supplier notification	1-methyl-2-pyrrolidone xylene ETHYLBENZENE Isopropanol	872-50-4 1330-20-7 100-41-4 67-63-0	30 - 60 15 - 40 1 - 5 1 - 5

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: 1-METHYL-2-PYRROLIDONE; XYLENE; ETHYL BENZENE; ISOPROPYL ALCOHOL

New York : The following components are listed: Xylene (mixed); Ethylbenzene

New Jersey : The following components are listed: 1-METHYL-2-PYRROLIDONE; 2-PYRROLIDINONE, 1-METHYL-; XYLENES; BENZENE, DIMETHYL-; VM & P NAPHTHA; LIGROINE; ETHYL BENZENE; BENZENE, ETHYL-; ISOPROPYL ALCOHOL; 2-PROPANOL

Pennsylvania : The following components are listed: 2-PYRROLIDINONE, 1-METHYL-; BENZENE, DIMETHYL-; LIGROINE; BENZENE, ETHYL-; 2-PROPANOL

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 and birth defects or other reproductive harm.

Ingredient name	Cancer	Reproductive	No significant risk level	Maximum acceptable dosage level

15. Regulatory information

1-methyl-2-pyrrolidone	No.	Yes.	No.	3200 µg/day (inhalation)
ETHYLBENZENE	Yes.	No.	41 µg/day (ingestion) 54 µg/day (inhalation)	No.

United States inventory (TSCA 8b) : All components are listed or exempted.

Canada

WHMIS (Canada) : Class B-2: Flammable liquid
Class D-2A: Material causing other toxic effects (Very toxic).
Class D-2B: Material causing other toxic effects (Toxic).

Canadian lists

Canadian NPRI : The following components are listed: N-Methyl-2-pyrrolidone; Xylene; Solvent naphtha light aliphatic; VM & P naphtha; Ethylbenzene; Isopropyl alcohol

CEPA Toxic substances : None of the components are listed.

Canada inventory : All components are listed or exempted.

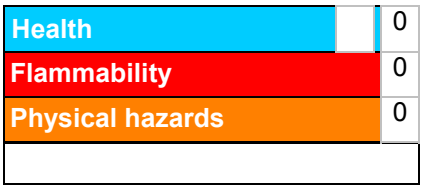
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

International regulations

International lists : **Australia inventory (AICS)**: All components are listed or exempted.
China inventory (IECSC): All components are listed or exempted.
Japan inventory: Not determined.
Korea inventory: All components are listed or exempted.
New Zealand Inventory of Chemicals (NZIoC): All components are listed or exempted.
Philippines inventory (PICCS): All components are listed or exempted.

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 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.) :

Reprinted with permission from NFPA 704-2001, Identification of the Hazards of Materials for Emergency Response Copyright ©1997, National Fire Protection Association, Quincy, MA 02269. This reprinted material is not the complete and official position of the National Fire Protection Association, on the referenced subject which is represented only by the standard in its entirety.

16. Other information

Date of issue : 1/24/2011.

Date of previous issue : No previous validation.

Version : 1.01

Indicates information that has changed from previously issued version.

Notice to reader

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.