

# SAFETY DATA SHEET

## Butane



### Section 1. Identification

**GHS product identifier** : Butane

**Other means of identification** : Commercial butane, Liquefied petroleum gas, Normal butane, N-butane

**Product type** : Liquefied gas.

**Identified uses**

Liquefied petroleum gas

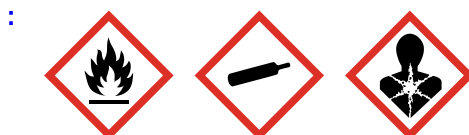
**Supplier's details** : Colonial Pipeline Company  
1185 Sanctuary Parkway  
Suite 100  
Alpharetta, GA 30009  
Tel.: 678-762-2200  
Toll Free: 800-275-3004  
Fax: 678-762-2466  
Email: [info@colpipe.com](mailto:info@colpipe.com)  
Web site: <http://www.colpipe.com/>

**Emergency telephone number (with hours of operation)** : CHEMTREC, U.S. : 1-800-424-9300 International: +1-703-527-3887  
Hours of operation: 24 hours/day, 7 days/week

### 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 GASES - Category 1  
GASES UNDER PRESSURE - Liquefied gas  
GERM CELL MUTAGENICITY - Category 1B  
CARCINOGENICITY - Category 1A

**GHS label elements****Hazard pictograms****Signal word**

: Danger

**Hazard statements**

: Extremely flammable gas.  
Contains gas under pressure; may explode if heated.  
May cause genetic defects.  
May cause cancer.

**Precautionary statements****General**

: Read label before use. Keep out of reach of children. If medical advice is needed, have product container or label at hand.

**Prevention**

: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.





## Section 2. Hazards identification

- Response** : IF exposed or concerned: Get medical attention. Leaking gas fire: Do not extinguish, unless leak can be stopped safely. Eliminate all ignition sources if safe to do so.
- Storage** : Store locked up. Protect from sunlight. Store in a well-ventilated place.
- Disposal** : Dispose of contents and container in accordance with all local, regional, national and international regulations.
- Hazards not otherwise classified** : Liquid can cause burns similar to frostbite.

## Section 3. Composition/information on ingredients

- Substance/mixture** : Mixture
- Other means of identification** : Commercial butane, Liquefied petroleum gas, Normal butane, N-butane

### CAS number/other identifiers

- CAS number** : Not applicable.
- Product code** : Not available.

| Ingredient name   | %        | CAS number |
|---|----------|------------|
| Butane (containing $\geq 0.1\%$ butadiene (203-450-8))    | 95 - 100 | 106-97-8   |
| Isobutane (Containing $\geq 0.1\%$ butadiene (203-450-8)) | 0.1 - 4  | 75-28-5    |
| Pentane   | 0.1 - 2  | 109-66-0   |
| Propane   | 0.1 - 1  | 74-98-6    |

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 as hazardous to health or the environment 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 20 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.
- Skin contact** : Flush contaminated skin with plenty of water. To avoid the risk of static discharges and gas ignition, soak contaminated clothing thoroughly with water before removing it. Continue to rinse for at least 20 minutes. Get medical attention. In case of contact with liquid, warm frozen tissues slowly with lukewarm water and get medical attention. Do not rub affected area. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention. Ingestion of liquid can cause burns similar to frostbite. If frostbite occurs, get medical attention. 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. As this product rapidly becomes a gas when released, refer to the inhalation section.



## Section 4. First aid measures

### Most important symptoms/effects, acute and delayed

#### Potential acute health effects

- Eye contact** : Liquid can cause burns similar to frostbite.
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : Dermal contact with rapidly evaporating liquid could result in freezing of the tissues or frostbite.
- Ingestion** : Ingestion of liquid can cause burns similar to frostbite.

#### Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:  
frostbite
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : Adverse symptoms may include the following:  
frostbite
- Ingestion** : Adverse symptoms may include the following:  
frostbite

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

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- 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 an extinguishing agent suitable for the surrounding fire.
- Unsuitable extinguishing media** : None known.

### Specific hazards arising from the chemical

- : Contains gas under pressure. Extremely flammable gas. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. The vapor/gas is heavier than air and will spread along the ground. Gas may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back, causing fire or explosion.

### Hazardous thermal decomposition products

- : Decomposition products may include the following materials:  
carbon dioxide  
carbon monoxide

### Special protective actions for fire-fighters

- : Contact supplier immediately for specialist advice. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool. If involved in fire, shut off flow immediately if it can be done without risk. If this is impossible, withdraw from area and allow fire to burn. Fight fire from protected location or maximum possible distance. Eliminate all ignition sources if safe to do so.





## Section 5. Fire-fighting measures

- 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. For incidents involving large quantities, thermally insulated undergarments and thick textile or leather gloves should be worn.

## Section 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : Accidental releases pose a serious fire or explosion hazard. 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 gas. 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** : Ensure emergency procedures to deal with accidental gas releases are in place to avoid contamination of the environment. 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 and materials for containment and cleaning up

- Small spill** : Immediately contact emergency personnel. Stop leak if without risk. Use spark-proof tools and explosion-proof equipment.
- Large spill** : Immediately contact emergency personnel. Stop leak if without risk. Use spark-proof tools and explosion-proof equipment. 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). Contains gas under pressure. 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. Avoid breathing gas. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. 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. Empty containers retain product residue and can be hazardous. Do not puncture or incinerate 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. See also Section 8 for additional information on hygiene measures. Remove contaminated clothing and protective equipment before entering eating areas.
- Conditions for safe storage, including any incompatibilities** : Store in accordance with local regulations. Store in a segregated and approved area. Store away from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Store locked up. Eliminate all ignition sources. Keep container tightly closed and sealed until ready for use.



## Section 8. Exposure controls/personal protection

### Control parameters

#### Occupational exposure limits

| <b>Ingredient name</b>                                    | <b>Exposure limits</b>   |
|---|--|
| Butane (containing $\geq 0.1\%$ butadiene (203-450-8))    | <b>ACGIH TLV (United States, 3/2012).</b><br>TWA: 1000 ppm 8 hours.<br><b>NIOSH REL (United States, 6/2009).</b><br>TWA: 1900 mg/m <sup>3</sup> 10 hours.<br>TWA: 800 ppm 10 hours.  |
| Isobutane (Containing $\geq 0.1\%$ butadiene (203-450-8)) | <b>ACGIH TLV (United States, 2/2010).</b><br>TWA: 1000 ppm 8 hours.<br><b>NIOSH REL (United States, 6/2009).</b><br>TWA: 1900 mg/m <sup>3</sup> 10 hours.<br>TWA: 800 ppm 10 hours.  |
| Pentane   | <b>ACGIH TLV (United States, 2/2010).</b><br>TWA: 600 ppm 8 hours.<br><b>NIOSH REL (United States, 6/2009).</b><br>CEIL: 1800 mg/m <sup>3</sup> 15 minutes.<br>CEIL: 610 ppm 15 minutes.<br>TWA: 350 mg/m <sup>3</sup> 10 hours.<br>TWA: 120 ppm 10 hours.<br><b>OSHA PEL (United States, 6/2010).</b><br>TWA: 2950 mg/m <sup>3</sup> 8 hours.<br>TWA: 1000 ppm 8 hours. |
| Propane   | <b>ACGIH TLV (United States, 3/2012).</b><br>TWA: 1000 ppm 8 hours.<br><b>NIOSH REL (United States, 1/2013).</b><br>TWA: 1800 mg/m <sup>3</sup> 10 hours.<br>TWA: 1000 ppm 10 hours.<br><b>OSHA PEL (United States, 6/2010).</b><br>TWA: 1800 mg/m <sup>3</sup> 8 hours.<br>TWA: 1000 ppm 8 hours.   |

### **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.

### 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.

#### **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**



## Section 8. Exposure controls/personal 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. If contact with the liquid is possible, insulated gloves suitable for low temperatures should be worn. 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** : Use a properly fitted, air-purifying or supplied air 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.

## Section 9. Physical and chemical properties

### Appearance

- Physical state** : Liquefied gas. [Clear.]
- Color** : Colorless.
- Odor** : Petroleum.
- Odor threshold** : Not available.
- pH** : Not available.
- Melting point** : Not available.
- Boiling point** : -1°C (30.2°F)
- Flash point** : Closed cup: -73°C (-99.4°F) [Pensky-Martens.]
- Evaporation rate** : >1 (Butyl acetate = 1)
- Flammability (solid, gas)** : Not available.
- Lower and upper explosive (flammable) limits** : Not available.
- Vapor pressure** : 2-10 psia (Reid VP) @ 37.8°C
- Vapor density** : 2 [Air = 1]
- Relative density** : 0.70-0.85 @ 15.6°C
- Solubility** : Not available.
- Partition coefficient: n-octanol/water** : Not available.
- Auto-ignition temperature** : Not available.
- Decomposition temperature** : Not available.
- Viscosity** : Not available.





## 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. Do not allow gas to accumulate in low or confined areas.
- Incompatible materials** : Reactive or incompatible with the following materials: oxidizing materials and acids.
- 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 |
|---|-----------------------|---------|--------------------------|----------|
| Butane (containing $\geq 0.1\%$ butadiene (203-450-8))    | LC50 Inhalation Vapor | Rat     | 658000 mg/m <sup>3</sup> | 4 hours  |
| Isobutane (Containing $\geq 0.1\%$ butadiene (203-450-8)) | LC50 Inhalation Vapor | Rat     | 658000 mg/m <sup>3</sup> | 4 hours  |
| Pentane   | LC50 Inhalation Vapor | Rat     | 364 g/m <sup>3</sup>     | 4 hours  |

#### Irritation/Corrosion

There is no data available.

#### Sensitization

There is no data available.

#### Carcinogenicity

##### Classification

| Product/ingredient name                                   | OSHA | IARC | NTP | ACGIH | EPA | NIOSH |
|---|------|------|-----|-------|-----|-------|
| Isobutane (Containing $\geq 0.1\%$ butadiene (203-450-8)) | -    | -    | -   | -     | -   | None. |

#### Specific target organ toxicity (single exposure)

| Name    | Category   | Route of exposure | Target organs    |
|---------|------------|-------------------|------------------|
| Pentane | Category 3 | Not applicable.   | Narcotic effects |

#### Specific target organ toxicity (repeated exposure)

There is no data available.

#### Aspiration hazard

| Name    | Result                         |
|---------|--------------------------------|
| Pentane | ASPIRATION HAZARD - Category 1 |

**Information on the likely routes of exposure** : Not available.







## Section 11. Toxicological information

### Potential acute health effects

- Eye contact** : Liquid can cause burns similar to frostbite.
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : Dermal contact with rapidly evaporating liquid could result in freezing of the tissues or frostbite.
- Ingestion** : Ingestion of liquid can cause burns similar to frostbite.

### Symptoms related to the physical, chemical and toxicological characteristics

- Eye contact** : Adverse symptoms may include the following:  
frostbite
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : Adverse symptoms may include the following:  
frostbite
- Ingestion** : Adverse symptoms may include the following:  
frostbite

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

#### Short term exposure

- Potential immediate effects** : No known significant effects or critical hazards.
- Potential delayed effects** : No known significant effects or critical hazards.

#### Long term exposure

- Potential immediate effects** : No known significant effects or critical hazards.
- Potential delayed effects** : No known significant effects or critical hazards.

#### Potential chronic health effects

- General** : No known significant effects or critical hazards.
- Carcinogenicity** : May cause cancer. Risk of cancer depends on duration and level of exposure.
- Mutagenicity** : May cause genetic defects.
- 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

There is no data available.

## Section 12. Ecological information

### Toxicity

There is no data available.

### Persistence and degradability

There is no data available.

### Bioaccumulative potential







## Section 12. Ecological information

| Product/ingredient name                              | LogP <sub>ow</sub> | BCF | Potential |
|--|--------------------|-----|-----------|
| Butane (containing >= 0.1% butadiene (203-450-8))    | 2.89               | -   | low       |
| Isobutane (Containing >= 0.1% butadiene (203-450-8)) | 2.8                | -   | low       |
| Pentane  | 3.45               | 171 | low       |
| Propane  | 1.09               | -   | low       |

### Mobility in soil




Soil/water partition coefficient (K<sub>oc</sub>) : 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 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. Empty pressure vessels should be returned to the supplier. 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. Empty containers or liners may retain some product residues. Do not puncture or incinerate container.

## Section 14. Transport information

|                            | DOT Classification   | IMDG   | IATA   |
|----------------------------|--|--|--|
| UN number                  | UN1011   | UN1011   | UN1011   |
| UN proper shipping name    | BUTANE (Butane (containing >= 0.1% butadiene (203-450-8)), Isobutane (Containing >= 0.1% butadiene (203-450-8))) | BUTANE (Butane (containing >= 0.1% butadiene (203-450-8)), Isobutane (Containing >= 0.1% butadiene (203-450-8))) | BUTANE (Butane (containing >= 0.1% butadiene (203-450-8)), Isobutane (Containing >= 0.1% butadiene (203-450-8))) |
| Transport hazard class(es) | 2.1<br>                       | 2.1<br>                       | 2.1<br>                     |
| Packing group              | -  | -  | -  |
| Environmental hazards      | No.  | No.  | No.  |
| Additional information     | -  | -  | -  |

AERG : 115

**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.





## Section 14. Transport information

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code : Not available.

## Section 15. Regulatory information

**U.S. Federal regulations** : TSCA 8(a) PAIR: Pentane  
TSCA 8(a) CDR Exempt/Partial exemption: Not determined  
United States inventory (TSCA 8b): All components are listed or exempted.  
Clean Air Act (CAA) 112 regulated flammable substances: Butane (containing  $\geq 0.1\%$  butadiene (203-450-8)); Isobutane (Containing  $\geq 0.1\%$  butadiene (203-450-8)); Pentane

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Not 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 : Fire hazard  
Sudden release of pressure  
Delayed (chronic) health hazard

#### Composition/information on ingredients

| Name  | %        | Fire hazard | Sudden release of pressure | Reactive | Immediate (acute) health hazard | Delayed (chronic) health hazard |
|---|----------|-------------|----------------------------|----------|---------------------------------|---------------------------------|
| Butane (containing $\geq 0.1\%$ butadiene (203-450-8))    | 95 - 100 | Yes.        | Yes.                       | No.      | No.                             | Yes.                            |
| Isobutane (Containing $\geq 0.1\%$ butadiene (203-450-8)) | 0.1 - 4  | Yes.        | Yes.                       | No.      | No.                             | Yes.                            |
| Pentane   | 0.1 - 2  | Yes.        | No.                        | No.      | Yes.                            | No.                             |
| Propane   | 0.1 - 1  | Yes.        | Yes.                       | No.      | No.                             | No.                             |

### State regulations

**Massachusetts** : The following components are listed: Butane (containing  $\geq 0.1\%$  butadiene (203-450-8)); Isobutane (Containing  $\geq 0.1\%$  butadiene (203-450-8)); Pentane

**New York** : None of the components are listed.

**New Jersey** : The following components are listed: Butane (containing  $\geq 0.1\%$  butadiene (203-450-8)); Isobutane (Containing  $\geq 0.1\%$  butadiene (203-450-8)); Pentane

**Pennsylvania** : The following components are listed: Butane (containing  $\geq 0.1\%$  butadiene (203-450-8)); Isobutane (Containing  $\geq 0.1\%$  butadiene (203-450-8)); Pentane





## Section 15. Regulatory information

### California Prop. 65

No products were found.

### International regulations

#### Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

#### Montreal Protocol (Annexes A, B, C, E)

Not listed.

#### Stockholm Convention on Persistent Organic Pollutants

Not listed.

#### Rotterdam Convention on Prior Inform Consent (PIC)

Not listed.

#### UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

### International lists

#### National inventory

|                          |  |
|--------------------------|--|
| <b>Australia</b>         | : All components are listed or exempted. |
| <b>Canada</b>            | : All components are listed or exempted. |
| <b>China</b>             | : All components are listed or exempted. |
| <b>Europe</b>            | : All components are listed or exempted. |
| <b>Japan</b>             | : All components are listed or exempted. |
| <b>Malaysia</b>          | : Not determined.                        |
| <b>New Zealand</b>       | : All components are listed or exempted. |
| <b>Philippines</b>       | : All components are listed or exempted. |
| <b>Republic of Korea</b> | : All components are listed or exempted. |
| <b>Taiwan</b>            | : Not determined.                        |

## Section 16. Other information

### History

**Date of issue mm/dd/yyyy** : 02/15/2014

**Version** : 1

**Revised Section(s)** : Not applicable.

**Prepared by** : KMK Regulatory Services Inc.

### 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 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)  
UN = United Nations





## Section 16. Other information

### 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.

