

# Material Safety Data Sheet



## Nitrite Test Solution A

### 1. Product and company identification

<b>Material uses</b>	: Other non-specified industry: Laboratory Chemicals and Reagent Kits
<b>Manufacturer</b>	: BG Products Inc. 701 S. Wichita Street Wichita, KS, 67213, USA www.bgprod.com
<b>MSDS #</b>	: 996A
<b>Validation date</b>	: 8/16/2012.
<b>Responsible name</b>	: Kolin Anglin, Environmental Coordinator 316-265-2686 msds@bgprod.com
<b>In case of emergency</b>	: (800) 424-9300 (CHEMTREC)

### 2. Hazards identification

<b>Physical state</b>	: Liquid.
<b>Odor</b>	: Pungent.
<b>OSHA/HCS status</b>	: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
<b>Emergency overview</b>	: <b>WARNING!</b> COMBUSTIBLE LIQUID AND VAPOR. CAUSES EYE IRRITATION. Do not handle until all safety precautions have been read and understood. Obtain special instructions before use. Do not breathe vapor or mist. Do not eat, drink or smoke when using this product. Avoid contact with eyes. Keep away from heat and flame. Use personal protective equipment as required. Wash thoroughly after handling.

#### Potential acute health effects

<b>Inhalation</b>	: Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
<b>Skin</b>	: May cause skin irritation.
<b>Eyes</b>	: Severely irritating to eyes. Risk of serious damage to eyes.

#### Potential chronic health effects

<b>Chronic effects</b>	: Contains material that may cause target organ damage, based on animal data.
<b>Carcinogenicity</b>	: Contains material which can cause cancer. Risk of cancer depends on duration and level of exposure.
<b>Target organs</b>	: Contains material which may cause damage to the following organs: lungs, mucous membranes, upper respiratory tract, skin, eyes, teeth, testes.

#### Over-exposure signs/symptoms

<b>Eyes</b>	: Adverse symptoms may include the following: pain or irritation watering redness
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<b>Medical conditions aggravated by over-exposure</b>	: Pre-existing disorders involving any target organs mentioned in this MSDS as being at risk may be aggravated by over-exposure to this product.
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See toxicological information (Section 11)

### 3. Composition/information on ingredients

Name	CAS number	%
diammonium hexanitratocerate	16774-21-3	5 - 10
sulphuric acid	7664-93-9	5 - 10

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. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.
- Notes to physician** : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

### 5. Fire-fighting measures

- Flammability of the product** : Combustible liquid. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion.
- Extinguishing media**
- Suitable** : Use dry chemical, CO<sub>2</sub>, 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:  
nitrogen oxides  
sulfur oxides  
metal oxide/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). The spilled material may be neutralized with sodium carbonate, sodium bicarbonate or sodium hydroxide. 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. Avoid exposure - obtain special instructions before use. 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. Keep away from alkalis. 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 alkalis. 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
sulphuric acid	<p><b>ACGIH TLV (United States, 1/2011).</b> TWA: 0.2 mg/m<sup>3</sup> 8 hours.</p> <p><b>OSHA PEL 1989 (United States, 3/1989).</b> TWA: 1 mg/m<sup>3</sup> 8 hours.</p> <p><b>NIOSH REL (United States, 6/2009).</b> TWA: 1 mg/m<sup>3</sup> 10 hours.</p> <p><b>OSHA PEL (United States, 6/2010).</b> TWA: 1 mg/m<sup>3</sup> 8 hours.</p>

**Consult local authorities for acceptable exposure limits.**

- Recommended monitoring procedures** : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to appropriate monitoring standards. Reference to national guidance documents for methods for the determination of hazardous substances will also be required.
- 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. 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.
- 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. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.
- 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

<b>Physical state</b>	: Liquid.
<b>Flash point</b>	: Closed cup: 93°C (199.4°F)
<b>Auto-ignition temperature</b>	: Not available.
<b>Flammable limits</b>	: Not available.
<b>Color</b>	: Orange.
<b>Odor</b>	: Pungent.
<b>pH</b>	: 1
<b>Boiling/condensation point</b>	: Not available.
<b>Melting/freezing point</b>	: Not available.
<b>Specific gravity</b>	: 1.08
<b>Vapor pressure</b>	: Not available.
<b>Vapor density</b>	: Not available.
<b>Odor threshold</b>	: Not available.
<b>Evaporation rate</b>	: Not available.
<b>Density</b>	: 9.007 (lbs/gal)

## 10. Stability and reactivity

<b>Chemical stability</b>	: The product is stable.
<b>Conditions to avoid</b>	: 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.
<b>Materials to avoid</b>	: Attacks many metals producing extremely flammable hydrogen gas which can form explosive mixtures with air. Reactive or incompatible with the following materials: alkalis oxidizing materials
<b>Hazardous decomposition products</b>	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.
<b>Possibility of hazardous reactions</b>	: Under normal conditions of storage and use, hazardous reactions will not occur.

## 11. Toxicological information

### Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
sulphuric acid	LD50 Oral	Rat	2140 mg/kg	-

### Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
sulphuric acid	Eyes - Severe irritant	Rabbit	-	250 Micrograms	-
	Eyes - Severe irritant	Rabbit	-	0.5 minutes 5 milligrams	-

### Carcinogenicity

#### Classification

Product/ingredient name	ACGIH	IARC	EPA	NIOSH	NTP	OSHA
diammonium hexanitratocerate	-	2A	-	-	-	-
sulphuric acid	A2	1	-	-	Proven.	-

## 12. Ecological information

Product/ingredient name	Result	Species	Exposure
sulphuric acid	Acute LC50 42500 µg/l Marine water	Crustaceans - Pandalus montagui - Adult	48 hours
	Acute LC50 42000 µg/l Fresh water	Fish - Gambusia affinis - Adult	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. 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.

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
<b>DOT Classification</b>	Not regulated.	-	-	-		
<b>IMDG Class</b>	Not regulated.	-	-	-		-
<b>IATA-DGR Class</b>	Not regulated.	-	-	-		-

PG\* : Packing group

## 15. Regulatory information

### United States

**HCS Classification** : Combustible liquid  
Irritating material  
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.

## 15. Regulatory information

**SARA 302/304/311/312 extremely hazardous substances:** sulphuric acid  
**SARA 302/304 emergency planning and notification:** sulphuric acid  
**SARA 302/304/311/312 hazardous chemicals:** sulphuric acid  
**SARA 311/312 MSDS distribution - chemical inventory - hazard identification:**  
 sulphuric acid: reactive, Immediate (acute) health hazard, Delayed (chronic) health hazard  
**Clean Water Act (CWA) 311:** sulphuric acid

**DEA List II Chemicals (Essential Chemicals)** : Listed

### State regulations

**Massachusetts** : The following components are listed: SULFURIC ACID  
**New York** : The following components are listed: Sulfuric acid  
**New Jersey** : The following components are listed: NITRATE COMPOUNDS; SULFURIC ACID; DIHYDROGEN SULFATE  
**Pennsylvania** : The following components are listed: SULFURIC ACID  
**Rhode Island** : None of the components are listed.  
**California Prop. 65**

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

Ingredient name	Cancer	Reproductive	No significant risk level	Maximum acceptable dosage level
sulphuric acid	Yes.	No.	No.	No.

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

### Canada

**WHMIS (Canada)** : Class B-3: Combustible liquid with a flash point between 37.8°C (100°F) and 93.3°C (200°F).  
 Class D-1A: Material causing immediate and serious toxic effects (Very toxic).  
 Class E: Corrosive material

### Canadian lists

**Canadian NPRI** : The following components are listed: Ammonia (total); Sulphuric acid  
**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.  
**Malaysia Inventory (EHS Register):** Not determined.  
**New Zealand Inventory of Chemicals (NZIoC):** All components are listed or exempted.  
**Philippines inventory (PICCS):** All components are listed or exempted.  
**Taiwan inventory (CSNN):** Not determined.

## 16. Other information

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

Health	2
Flammability	2
Physical hazards	0

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

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

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



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**Date of issue** : 8/16/2012.  
**Date of previous issue** : No previous validation.  
**Version** : 0.1

☑ 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.