# SAFETY DATA SHEET

## 1. Identification

**Product identifier** **URANIUM, 1,000 ppm ICP STANDARD SOLUTION**

**Other means of identification**

**Product code** 1829

**Recommended use** professional, scientific and technical activities: other professional, scientific and technical activities

**Recommended restrictions** None known.

**Manufacturer/Importer/Supplier/Distributor information**

**Manufacturer**

| | | |
|---|---|---|
| **Company name** | GFS Chemicals, Inc. | |
| **Address** | P.O. Box 245<br>Powell, OH 43065<br>United States | |
| **Telephone** | Phone | 740-881-5501 |
| | Toll Free | 800-858-9682 |
| | Fax | 740-881-5989 |
| **Website** | www.gfschemicals.com | |
| **E-mail** | service@gfschemicals.com | |
| **Emergency phone number** | Emergency Assistance | Chemtrec 800-424-9300 |

## 2. Hazard(s) identification

**Physical hazards** Not classified.

**Health hazards**

| | |
|---|---|
| Skin corrosion/irritation | Category 1A |
| Serious eye damage/eye irritation | Category 1 |
| Carcinogenicity | Category 1 |
| Specific target organ toxicity, repeated exposure | Category 2 |

**Environmental hazards** Not classified.

**OSHA defined hazards** Not classified.

**Label elements**

**Signal word** Danger

**Hazard statement** Causes severe skin burns and eye damage. Causes serious eye damage. May cause cancer. May cause damage to organs through prolonged or repeated exposure.

**Precautionary statement**

**Prevention** Do not handle until all safety precautions have been read and understood. Do not breathe mist or vapor. Wear protective gloves/protective clothing/eye protection/face protection. Do not eat, drink or smoke when using this product.

**Response** If swallowed: Rinse mouth. Do NOT induce vomiting. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If inhaled: Remove person to fresh air and keep comfortable for breathing. 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/physician. Wash contaminated clothing before reuse.

**Storage** Store locked up.

**Disposal** Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

**Hazard(s) not otherwise classified (HNOC)** None known.

**Supplemental information** None.

## 3. Composition/information on ingredients

**Mixtures**

| Chemical name | Common name and synonyms | CAS number | % |
|---|---|---|---|
| WATER | | 7732-18-5 | 96.42 |
| NITRIC ACID | | 7697-37-2 | 3 - < 5 |
| URANYL NITRATE | | 13520-83-7 | 0.21 |

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

## 4. First-aid measures

**Inhalation** Move to fresh air. Call a physician if symptoms develop or persist.

**Skin contact** Take off immediately all contaminated clothing. Rinse skin with water/shower. Call a physician or poison control center immediately. Chemical burns must be treated by a physician. Wash contaminated clothing before reuse.

**Eye contact** Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician or poison control center immediately.

**Ingestion** Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.

**Most important symptoms/effects, acute and delayed** Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. Prolonged exposure may cause chronic effects.

**Indication of immediate medical attention and special treatment needed** Provide general supportive measures and treat symptomatically. Chemical burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Keep victim under observation. Symptoms may be delayed.

**General information** IF exposed or concerned: Get medical advice/attention. If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

## 5. Fire-fighting measures

**Suitable extinguishing media** Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).

**Unsuitable extinguishing media** Do not use water jet as an extinguisher, as this will spread the fire.

**Specific hazards arising from the chemical** During fire, gases hazardous to health may be formed.

**Special protective equipment and precautions for firefighters** Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

**Fire fighting equipment/instructions** Move containers from fire area if you can do so without risk.

**Specific methods** Use standard firefighting procedures and consider the hazards of other involved materials.

**General fire hazards** No unusual fire or explosion hazards noted.

## 6. Accidental release measures

**Personal precautions, protective equipment and emergency procedures** Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist or vapor. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

**Methods and materials for containment and cleaning up** Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, dry sand or earth and place into containers. Prevent entry into waterways, sewer, basements or confined areas. Following product recovery, flush area with water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.

**Environmental precautions** Avoid discharge into drains, water courses or onto the ground.

## 7. Handling and storage

**Precautions for safe handling** Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe mist or vapor. Do not get in eyes, on skin, or on clothing. Avoid prolonged exposure. Should be handled in closed systems, if possible. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.

**Conditions for safe storage, including any incompatibilities** Store locked up. Store in original tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).

## 8. Exposure controls/personal protection

**Occupational exposure limits**

**US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)**

| Components | Type | Value |
|---|---|---|
| NITRIC ACID (CAS 7697-37-2) | PEL | 5 mg/m3 |
| | | 2 ppm |
| URANYL NITRATE (CAS 13520-83-7) | PEL | 0.25 mg/m3 |

**US. ACGIH Threshold Limit Values**

| Components | Type | Value |
|---|---|---|
| NITRIC ACID (CAS 7697-37-2) | STEL | 4 ppm |
| | TWA | 2 ppm |
| URANYL NITRATE (CAS 13520-83-7) | STEL | 0.6 mg/m3 |
| | TWA | 0.2 mg/m3 |

**US. NIOSH: Pocket Guide to Chemical Hazards**

| Components | Type | Value |
|---|---|---|
| NITRIC ACID (CAS 7697-37-2) | STEL | 10 mg/m3 |
| | | 4 ppm |
| | TWA | 5 mg/m3 |
| | | 2 ppm |
| URANYL NITRATE (CAS 13520-83-7) | STEL | 0.6 mg/m3 |
| | TWA | 0.2 mg/m3 |

**Biological limit values**

**US. ACGIH. BEIs. Biological Exposure Indices**

| Components | Value | Determinant | Specimen | Sampling Time |
|---|---|---|---|---|
| URANYL NITRATE (CAS 13520-83-7) | 200 µg/l | Uranium | Urine | * |

* - For sampling details, please see the source document.

**Appropriate engineering controls** Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower must be available when handling this product.

**Individual protection measures, such as personal protective equipment**

**Eye/face protection** Chemical respirator with organic vapor cartridge and full facepiece.

**Skin protection**

**Hand protection** Wear appropriate chemical resistant gloves.

**Other** Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.

**Respiratory protection** Chemical respirator with organic vapor cartridge and full facepiece.

**Thermal hazards** Wear appropriate thermal protective clothing, when necessary.

**General hygiene considerations** Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

## 9. Physical and chemical properties

**Appearance**

| | |
|---|---|
| **Physical state** | Liquid. |
| **Form** | Liquid. |
| **Color** | Colorless. |
| **Odor** | Not available. |
| **Odor threshold** | Not available. |
| **pH** | Not available. |
| **Melting point/freezing point** | 32 °F (0 °C) estimated |
| **Initial boiling point and boiling range** | 212 °F (100 °C) estimated |
| **Flash point** | Not available. |
| **Evaporation rate** | Not available. |
| **Flammability (solid, gas)** | Not available. |

**Upper/lower flammability or explosive limits**

| | |
|---|---|
| **Flammability limit - lower (%)** | Not available. |
| **Flammability limit - upper (%)** | Not available. |
| **Explosive limit - lower (%)** | Not available. |
| **Explosive limit - upper (%)** | Not available. |
| **Vapor pressure** | Not available. |
| **Vapor density** | Not available. |
| **Relative density** | Not available. |

**Solubility(ies)**

| | |
|---|---|
| **Solubility (water)** | Not available. |
| **Partition coefficient (n-octanol/water)** | Not available. |
| **Auto-ignition temperature** | Not available. |
| **Decomposition temperature** | Not available. |
| **Viscosity** | Not available. |

**Other information**

| | |
|---|---|
| **Density** | 1.03 g/cm3 estimated |
| **Percent volatile** | 96.42 % estimated |
| **Specific gravity** | 1.03 estimated |

## 10. Stability and reactivity

| | |
|---|---|
| **Reactivity** | The product is stable and non-reactive under normal conditions of use, storage and transport. |
| **Chemical stability** | Material is stable under normal conditions. |
| **Possibility of hazardous reactions** | Hazardous polymerization does not occur. |
| **Conditions to avoid** | Contact with incompatible materials. |
| **Incompatible materials** | Strong oxidizing agents. |
| **Hazardous decomposition products** | No hazardous decomposition products are known. |

## 11. Toxicological information

**Information on likely routes of exposure**

| | |
|---|---|
| **Inhalation** | May cause damage to organs through prolonged or repeated exposure by inhalation. May cause irritation to the respiratory system. Prolonged inhalation may be harmful. |
| **Skin contact** | Causes severe skin burns. |
| **Eye contact** | Causes serious eye damage. |
| **Ingestion** | Causes digestive tract burns. |

**Symptoms related to the physical, chemical and toxicological characteristics** Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result.

**Information on toxicological effects**

**Acute toxicity**

| Product | Species | Test Results |
|---|---|---|
| URANIUM, 1,000 ppm ICP STANDARD SOLUTION (CAS Mixture) | | |
| **Acute** | | |
| *Inhalation* | | |
| LC50 | Mouse | 7218.9351 mg/l, 30 Minutes estimated |
| | | 3110 mg/l |
| | | 1982.2485 mg/l, 4 Hours estimated |
| | Rat | 4082.8403 mg/l, 30 Minutes estimated |
| | | 1923.0769 mg/l, 4 Hours estimated |
| *Other* | | |
| LD50 | Rabbit | 47.619 mg/kg estimated |
| | Rat | 476.1905 mg/kg estimated |

| Components | Species | Test Results |
|---|---|---|
| NITRIC ACID (CAS 7697-37-2) | | |
| **Acute** | | |
| *Inhalation* | | |
| LC50 | Mouse | 244 mg/l, 30 Minutes |
| | | 67 mg/l, 4 Hours |
| | Rat | 334 mg/l, 30 Minutes |
| | | 244 mg/l, 30 Minutes |
| | | 138 mg/l, 30 Minutes |
| | | 65 mg/l, 4 Hours |
| URANYL NITRATE (CAS 13520-83-7) | | |
| **Acute** | | |
| *Other* | | |
| LD50 | Rabbit | 0.1 mg/kg |
| | Rat | 1 mg/kg |

* Estimates for product may be based on additional component data not shown.

**Skin corrosion/irritation** Causes severe skin burns and eye damage.

**Serious eye damage/eye irritation** Causes serious eye damage.

**Respiratory or skin sensitization**

**Respiratory sensitization** Not available.

**Skin sensitization** This product is not expected to cause skin sensitization.

**Germ cell mutagenicity** No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

**Carcinogenicity** May cause cancer.

**Reproductive toxicity** This product is not expected to cause reproductive or developmental effects.

**Specific target organ toxicity - single exposure** Not classified.

**Specific target organ toxicity - repeated exposure** May cause damage to organs through prolonged or repeated exposure.

**Aspiration hazard** Not available.

**Chronic effects** Prolonged inhalation may be harmful. May cause damage to organs through prolonged or repeated exposure.

## 12. Ecological information

**Ecotoxicity** The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

| Product | | Species | Test Results |
|---|---|---|---|
| URANIUM, 1,000 ppm ICP STANDARD SOLUTION (CAS Mixture) | | | |
| **Aquatic** | | | |
| Crustacea | EC50 | Daphnia | 11847.6191 mg/l, 48 hours estimated |
| | LC50 | Daphnia | 8450 mg/l, 48 Hours |
| Fish | LC50 | Fish | 13895.2383 mg/l, 96 hours estimated |
| | | | 4300 mg/l, 48 Hours |

| Components | | Species | Test Results |
|---|---|---|---|
| NITRIC ACID (CAS 7697-37-2) | | | |
| **Aquatic** | | | |
| Crustacea | LC50 | Cockle (Cerastoderma edule) | 330 - 1000 mg/l, 48 hours |
| | | Green or Europeon shore crab (Carcinus maenas) | 180 mg/l, 48 hours |
| Fish | LC50 | Starfish (Asterias rubens) | 100 - 330 mg/l, 48 hours |
| URANYL NITRATE (CAS 13520-83-7) | | | |
| **Aquatic** | | | |
| Crustacea | EC50 | Water flea (Daphnia magna) | 4.84 - 5.9 mg/l, 48 hours |
| Fish | LC50 | Fathead minnow (Pimephales promelas) | 3.1 mg/l, 96 hours |

* Estimates for product may be based on additional component data not shown.

**Persistence and degradability** No data is available on the degradability of this product.

**Bioaccumulative potential** No data available.

**Mobility in soil** No data available.

**Other adverse effects** No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

## 13. Disposal considerations

**Disposal instructions** Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.

**Local disposal regulations** Dispose in accordance with all applicable regulations.

**Hazardous waste code** The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

**Waste from residues / unused products** Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

**Contaminated packaging** Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

## 14. Transport information

**DOT**

**UN number** UN3264

**UN proper shipping name** Corrosive liquid, acidic, inorganic, n.o.s. (NITRIC ACID RQ = 29586 LBS)

**Transport hazard class(es)**

**Class** 8

**Subsidiary risk** -

**Label(s)** 8

**Packing group** III

**Special precautions for user** Read safety instructions, SDS and emergency procedures before handling.

**Special provisions** IB3, T7, TP1, TP28

**Packaging exceptions** 154

**Packaging non bulk** 203

**Packaging bulk** 241

**IATA**

**UN number** UN3264

**UN proper shipping name** Corrosive liquid, acidic, inorganic, n.o.s. (NITRIC ACID)

**Transport hazard class(es)**

**Class** 8

| | |
|---|---|
| **Subsidiary risk** | - |
| **Packing group** | III |
| **Environmental hazards** | No. |
| **ERG Code** | 8L |
| **Special precautions for user** | Read safety instructions, SDS and emergency procedures before handling. |
| **Other information** | |
| **Passenger and cargo aircraft** | Allowed. |
| **Cargo aircraft only** | Allowed. |

**IMDG**

| | |
|---|---|
| **UN number** | UN3264 |
| **UN proper shipping name** | CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID) |
| **Transport hazard class(es)** | |
| **Class** | 8 |
| **Subsidiary risk** | - |
| **Packing group** | III |
| **Environmental hazards** | |
| **Marine pollutant** | No. |
| **EmS** | F-A, S-B |
| **Special precautions for user** | Read safety instructions, SDS and emergency procedures before handling. |

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

**DOT**


**IATA; IMDG**


## 15. Regulatory information

**US federal regulations** This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
All components are on the U.S. EPA TSCA Inventory List.

**TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)**

Not regulated.

**CERCLA Hazardous Substance List (40 CFR 302.4)**

| | |
|---|---|
| NITRIC ACID (CAS 7697-37-2) | Listed. |
| URANYL NITRATE (CAS 13520-83-7) | Listed. |

**SARA 304 Emergency release notification**

| | |
|---|---|
| NITRIC ACID (CAS 7697-37-2) | 1000 LBS |

**Superfund Amendments and Reauthorization Act of 1986 (SARA)**

**Hazard categories**
Immediate Hazard - Yes
Delayed Hazard - Yes
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

**SARA 302 Extremely hazardous substance**

| Chemical name | CAS number | Reportable quantity | Threshold planning quantity | Threshold planning quantity, lower value | Threshold planning quantity, upper value |
|---|---|---|---|---|---|
| NITRIC ACID | 7697-37-2 | 1000 | 1000 lbs | | |

**SARA 311/312 Hazardous chemical** No

**SARA 313 (TRI reporting)**

| Chemical name | CAS number | % by wt. |
|---|---|---|
| NITRIC ACID | 7697-37-2 | 3 - < 5 |

**Other federal regulations**

**Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**

Not regulated.

**Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)**

NITRIC ACID (CAS 7697-37-2)

**Safe Drinking Water Act (SDWA)** Not regulated.

**US state regulations**

**US. California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)**

Not listed.

**US. Massachusetts RTK - Substance List**

NITRIC ACID (CAS 7697-37-2)
URANYL NITRATE (CAS 13520-83-7)

**US. New Jersey Worker and Community Right-to-Know Act**

NITRIC ACID (CAS 7697-37-2)
URANYL NITRATE (CAS 13520-83-7)

**US. Pennsylvania Worker and Community Right-to-Know Law**

NITRIC ACID (CAS 7697-37-2)
URANYL NITRATE (CAS 13520-83-7)

**US. Rhode Island RTK**

NITRIC ACID (CAS 7697-37-2)
URANYL NITRATE (CAS 13520-83-7)

**US. California Proposition 65**

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

**International Inventories**

| Country(s) or region | Inventory name | On inventory (yes/no)* |
|---|---|---|
| Australia | Australian Inventory of Chemical Substances (AICS) | Yes |
| Canada | Domestic Substances List (DSL) | Yes |
| Canada | Non-Domestic Substances List (NDSL) | No |
| China | Inventory of Existing Chemical Substances in China (IECSC) | Yes |
| Europe | European Inventory of Existing Commercial Chemical Substances (EINECS) | Yes |
| Europe | European List of Notified Chemical Substances (ELINCS) | No |
| Japan | Inventory of Existing and New Chemical Substances (ENCS) | No |
| Korea | Existing Chemicals List (ECL) | Yes |
| New Zealand | New Zealand Inventory | Yes |
| Philippines | Philippine Inventory of Chemicals and Chemical Substances (PICCS) | Yes |

| Country(s) or region | Inventory name | On inventory (yes/no)* |
|---|---|---|
| United States & Puerto Rico | Toxic Substances Control Act (TSCA) Inventory | Yes |

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

## 16. Other information, including date of preparation or last revision

**Issue date** June-12-2015

**Version #** 01

**Disclaimer** GFS Chemicals cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.

**Revision Information** Composition / Information on Ingredients: Ingredients
Physical & Chemical Properties: Multiple Properties
Transport Information: Proper Shipping Name/Packing Group