1 Identification

Product identifier

Trade name: Nitrate ISE Ionic Strength Adjuster Solution
Product number: 400424
Relevant identified uses of the substance or mixture and uses advised against
Product description: 2M (NH₄)₂SO₄ Ammonium Sulfate
Application of the substance / the mixture: Buffers, Filling & Calibration Solutions

Details of the supplier of the safety data sheet

Manufacturer/Supplier:
1725 Brannum Lane
Yellow Springs, OH 45387
Phone: (937) 767-7241
Email: MSDSinfo@ysi.com    website: ysi.com

Emergency Contact information: Chemtrec: (US & Canada) 800-424-9300; (International) 001 703-527-3887

2 Hazard(s) identification

Classification of the substance or mixture

![GHS07]
Skin Irrit. 2  H315  Causes skin irritation.
Eye Irrit. 2A H319  Causes serious eye irritation.
STOT SE 3  H335  May cause respiratory irritation.

Label elements

GHS label elements
The product is classified and labeled according to the Globally Harmonized System (GHS).

Hazard pictograms

![GHS07]

Signal word: Warning

Hazard-determining components of labeling:
Ammonium Sulfate

Hazard statements
Causes skin irritation.
Causes serious eye irritation.
May cause respiratory irritation.

Precautionary statements
Avoid breathing dust/fume/gas/mist/vapors/spray.
Use only outdoors or in a well-ventilated area.
Wear protective gloves.
Wear eye protection / face protection.
Wash thoroughly after handling.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Specific treatment (see supplementary first aid instructions on this Safety Data Sheet).
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

(Contd. on page 2)
Trade name: Nitrate ISE Ionic Strength Adjuster Solution

Call a poison center/doctor if you feel unwell.
If skin irritation occurs: Get medical advice/attention.
If eye irritation persists: Get medical advice/attention.
If on skin: Wash with plenty of water.
Take off contaminated clothing and wash it before reuse.
Store locked up.
Store in a well-ventilated place. Keep container tightly closed.
Dispose of contents/container in accordance with local/regional/national/international regulations.

Classification system:

NFPA ratings (scale 0 - 4)

Health = 1
Fire = 0
Reactivity = 0

HMIS-ratings (scale 0 - 4)

HEALTH
Health = 1

FIRE
Fire = 0

REACTIVITY
Reactivity = 0

Hazard(s) not otherwise classified (HNOC): None known

Composition/information on ingredients

| CAS: 7732-18-5 | water, distilled, conductivity or of similar purity | 70-90% |
| RTECS: ZC 0110000 |

Chemical characterization: Mixture
Description: Mixture of substances listed below with nonhazardous additions.

Dangerous Components:

| CAS: 7783-20-2 | Ammonium Sulfate | 15-35% |
| RTECS: BS 4500000 | Skin Irrit. 2, H315; Eye Irrit. 2A, H319; STOT SE 3, H335 |

First-aid measures

Description of first aid measures

After inhalation: Supply fresh air; consult doctor in case of complaints.
After skin contact:
Immediately wash with water and soap and rinse thoroughly.
If skin irritation occurs, consult a doctor.
After eye contact:
Rinse opened eye for at least 15 minutes under running water. If symptoms persist, consult a doctor.
After swallowing:
Rinse out mouth and then drink plenty of water.
Do not induce vomiting.
If swallowed and symptoms occur, consult a doctor.

Information for doctor:

Most important symptoms and effects, both acute and delayed: No further relevant information available.
Indication of any immediate medical attention and special treatment needed
No further relevant information available.

(Contd. on page 3)
YSI Safety Data Sheet (SDS)
OSHA HazCom Standard 29 CFR 1910.1200(g) and GHS Rev 03.

Issue date 05/18/2015 Reviewed on 05/18/2015

Trade name: Nitrate ISE Ionic Strength Adjuster Solution

5 Fire-fighting measures

· Extinguishing media
  · Suitable extinguishing agents:
    CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
  · Special hazards arising from the substance or mixture: No further relevant information available.
  · Advice for firefighters
    Sodium Nitrate is an oxidizer and will release oxygen gas upon decomposition, which may intensify any fires. Use caution.
  · Protective equipment:
    As in any fire, wear self-contained breathing apparatus pressure-demand (NIOSH approved or equivalent), and full protective gear to prevent contact with skin and eyes.

6 Accidental release measures

· Personal precautions, protective equipment and emergency procedures
  Ensure adequate ventilation
  Avoid contact with skin, eyes and clothing.
  · Environmental precautions:
    Dilute with plenty of water.
    Do not allow to enter sewers/ surface or ground water.
  · Methods and material for containment and cleaning up:
    Absorb with liquid-binding material (ie. sand, diatomite, acid binders, universal binders, sawdust).
    Dispose of contaminated material as waste according to section 13.
    Ensure adequate ventilation.
    Dispose of the collected material according to regulations.
  · Reference to other sections
    See Section 7 for information on safe handling.
    See Section 8 for information on personal protection equipment.
    See Section 13 for disposal information.

7 Handling and storage

· Handling:
  · Precautions for safe handling
    Ensure good ventilation/exhaustion at the workplace.
    Prevent formation of aerosols.
  · Information about protection against explosions and fires: No special measures required.
  · Conditions for safe storage, including any incompatibilities
    · Storage:
      · Requirements to be met by storerooms and receptacles: No special requirements.
      · Information about storage in one common storage facility: Not required.
      · Further information about storage conditions: Keep receptacle tightly sealed.
      · Specific end use(s) No further relevant information available.

8 Exposure controls/personal protection

· Additional information about design of technical systems: No further data; see section 7.
  · Control parameters
    All ventilation should be designed in accordance with OSHA standard (29 CFR 1910.94). Use mechanical (general) ventilation for storage areas. Use appropriate ventilation as required to keep Exposure Limits in Air below TLV & PEL limits.

(Contd. on page 4)
Trade name: Nitrate ISE Ionic Strength Adjuster Solution

- **Components with occupational exposure limits:**
  The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
- **Additional information:** The lists that were valid during the creation of this SDS were used as basis.
- **Exposure controls**
  - **Personal protective equipment:**
  - **General protective and hygienic measures:**
    The usual precautionary measures for handling chemicals should be followed.
    Keep away from foodstuffs, beverages and feed.
    Immediately remove all soiled and contaminated clothing and wash before reuse.
    Wash hands before breaks and at the end of work.
    Avoid contact with the eyes and skin.
- **Breathing equipment:** Not required.
- **Protection of hands:**
  - Protective gloves
  The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
  Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.
  Select glove material based on penetration times, rates of diffusion and degradation.
- **Material of gloves**
  The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material cannot be calculated in advance and has therefore to be checked prior to the application.
- **Penetration time of glove material**
  The exact break-through time has to be determined and observed by the manufacturer of the protective gloves.
- **Eye protection:**
  - Tightly sealed goggles
- **Body protection:**
  - Protective work clothing

9 Physical and chemical properties

- **Information on basic physical and chemical properties**
  - **General Information**
  - **Appearance:**
    - Form: Liquid
    - Color: Clear, colorless
    - Odor: Odorless
    - Odor threshold: Not determined.
### 10 Stability and reactivity

- **Reactivity**: No further relevant information available.
- **Chemical stability**: Stable under normal conditions.
- **Thermal decomposition / conditions to be avoided**: No decomposition if used according to specifications.
- **Possibility of hazardous reactions**: No dangerous reactions known.
- **Conditions to avoid**: No further relevant information available.
- **Incompatible materials**: Strong bases and strong oxidizing agents.
- **Hazardous decomposition products**: Sulfur Oxides and Nitrogen Oxides (NOx).
**11 Toxicological information**

- **Information on toxicological effects**
  - **Acute toxicity:**
    - **LD/LC50 values that are relevant for classification:**
      - **7783-20-2 Ammonium Sulfate**
        - Oral LD50: 2840 mg/kg (rat)
        - Inhalative LC50/96 hours: 36.7 mg/l (Trout), 433 mg/l (Water flea)

- **Primary irritant effect:**
  - **on the skin:** Irritant to skin and mucous membranes.
  - **on the eye:**
    - Irritating effect.
    - Causes serious eye irritation.

- **Additional toxicological information:**
  - The product shows the following dangers according to internally approved calculation methods for preparations:
    - Irritant

- **Carcinogenic categories**
  - **IARC (International Agency for Research on Cancer)**
    - Group 1 - Carcinogenic to humans
    - Group 2A - Probably carcinogenic to humans
    - Group 2B - Possibly carcinogenic to humans
    - Group 3 - Not classifiable as to its carcinogenicity to humans
    - Group 4 - Probably not carcinogenic to humans
  - None of the ingredients are listed.

- **NTP (National Toxicology Program)**
  - None of the ingredients are listed.

- **OSHA-Ca (Occupational Safety & Health Administration)**
  - None of the ingredients are listed.

**12 Ecological information**

- **Toxicity** The hazards for the aquatic environment are unknown.
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Behavior in environmental systems:**
  - **Bioaccumulative potential** No further relevant information available.
  - **Mobility in soil** No further relevant information available.
- **Additional ecological information:**
  - **General notes:** Not known to be hazardous to water.
  - **Results of PBT and vPvB assessment**
    - **PBT:** Not applicable.
    - **vPvB:** Not applicable.
  - **Other adverse effects** No further relevant information available.

(Contd. on page 7)
**13 Disposal considerations**

- **Waste treatment methods**
  - **Recommendation:**
    Must not be disposed of together with household garbage. Do not allow product to reach sewage system. Observe all federal, state and local environmental regulations when disposing of this material.

- **Uncleaned packagings:**
  - **Recommendation:**
    Dispose of as unused product. Disposal must be made according to official regulations.

**14 Transport information**

- **UN-Number**
- **DOT, ADR, ADN, IMDG, IATA**
- **UN proper shipping name**
- **DOT, ADR, ADN, IMDG, IATA**
- **Transport hazard class(es)**
- **DOT, ADR, ADN, IMDG, IATA**
- **Class**
- **Packing group**
- **DOT, ADR, IMDG, IATA**
- **Environmental hazards:**
  - **Not applicable.**
- **Special precautions for user**
  - **Not applicable.**
- **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**
  - **Not applicable.**
- **UN "Model Regulation":**
  - **-**

**15 Regulatory information**

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
  - **Sara**
  - **Section 355 (extremely hazardous substances):**
    None of the ingredients are listed.
  - **Section 313 (Specific toxic chemical listings):**
    7783-20-2 Ammonium Sulfate
  - **TSCA (Toxic Substances Control Act):**
    All ingredients are listed.
  - **California Proposition 65**
  - **Chemicals known to cause cancer:**
    None of the ingredients are listed.
  - **Chemicals known to cause reproductive toxicity for females:**
    None of the ingredients are listed.
  - **Chemicals known to cause reproductive toxicity for males:**
    None of the ingredients are listed.
  - **Chemicals known to cause developmental toxicity:**
    None of the ingredients are listed.

(Contd. on page 8)
Trade name: Nitrate ISE Ionic Strength Adjuster Solution

- **Carcinogenic categories**
  - **EPA (Environmental Protection Agency)**
    None of the ingredients are listed.
  - **TLV (Threshold Limit Value established by ACGIH)**
    None of the ingredients are listed.
  - **NIOSH-Ca (National Institute for Occupational Safety and Health)**
    None of the ingredients are listed.

- **GHS label elements**
  The product is classified and labeled according to the Globally Harmonized System (GHS).

- **Hazard pictograms**
  
  GHS07

- **Signal word** Warning

- **Hazard-determining components of labeling:**
  Ammonium Sulfate

- **Hazard statements**
  Causes skin irritation.
  Causes serious eye irritation.
  May cause respiratory irritation.

- **Precautionary statements**
  Avoid breathing dust/fume/gas/mist/vapors/spray.
  Use only outdoors or in a well-ventilated area.
  Wear protective gloves.
  Wear eye protection / face protection.
  Wash thoroughly after handling.
  If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
  Specific treatment (see supplementary first aid instructions on this Safety Data Sheet).
  If INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a poison center/doctor if you feel unwell.
  If skin irritation occurs: Get medical advice/attention.
  If eye irritation persists: Get medical advice/attention.
  If on skin: Wash with plenty of water.
  Take off contaminated clothing and wash it before reuse.
  Store locked up.
  Store in a well-ventilated place. Keep container tightly closed.
  Dispose of contents/container in accordance with local/regional/national/international regulations.

- **National regulations:**
  The product is subject to be classified according with the latest version of the regulations on hazardous substances.

- **State Right to Know**

  | CAS: 7732-18-5 | water, distilled, conductivity or of similar purity | 70-90% |
  | RTECS: ZC 0110000 | (Contd. on page 9) |
YSI Safety Data Sheet (SDS)
OSHA HazCom Standard 29 CFR 1910.1200(g) and GHS Rev 03.

Issue date 05/18/2015
Reviewed on 05/18/2015

Trade name: Nitrate ISE Ionic Strength Adjuster Solution

- CAS: 7783-20-2
- RTECS: BS 4500000
- Ammonium Sulfate
- Skin Irrit. 2, H315; Eye Irrit. 2A, H319; STOT SE 3, H335
- 15-35%
- All ingredients are listed.

**Chemical safety assessment:**
A Chemical Safety Assessment has not been carried out.

**16 Other information**

The information and recommendations in this safety data sheet are, to the best of our knowledge, accurate as of the date of issue. Nothing herein shall be deemed to create warranty, expressed or implied and shall not establish a legally valid contractual relationship. It is the responsibility of the user to determine applicability of this information and the suitability of the material or product for any particular purpose.

- **Date of preparation / last revision** 05/18/2015 / -

**Abbreviations and acronyms:**
- ADR: The European Agreement concerning the International Carriage of Dangerous Goods by Road
- ADN: The European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
- IMDG: International Maritime Code for Dangerous Goods
- DOT: US Department of Transportation
- IATA: International Air Transport Association
- ACGIH: American Conference of Governmental Industrial Hygienists
- EINECS: European Inventory of Existing Commercial Chemical Substances
- ELINCS: European List of Notified Chemical Substances
- CAS: Chemical Abstracts Service (division of the American Chemical Society)
- NFPA: National Fire Protection Association (USA)
- HMIS: Hazardous Materials Identification System (USA)
- LC50: Lethal concentration, 50 percent
- LD50: Lethal dose, 50 percent
- Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2
- Eye Irrit. 2A: Serious eye damage/eye irritation, Hazard Category 2A
- STOT SE 3: Specific target organ toxicity - Single exposure, Hazard Category 3

* Data compared to the previous version altered.

YSI sells this product under agreement with the original manufacturer. YSI assumes no legal liability or responsibility for the accuracy, completeness or usefulness of any information set forth in this MSDS.