



## PRODUCT STEWARDSHIP SUMMARY

### *Nickel nitrate solutions*

#### 1. Chemical identity

- Nickel nitrate, C.A.S. No. 13138-45-9, Chemical formula  $\text{Ni}(\text{NO}_3)_2$
- Water, C.A.S. No. 7732-18-5, Chemical formula  $\text{H}_2\text{O}$
- Nitric Acid, C.A.S. No. 7697-37-2, Chemical formula  $\text{HNO}_3$

#### 2. Uses and Applications

Nickel nitrate solutions have many applications in industry. They are used in battery manufacturing, metal plating, petroleum refinery treatment, and as catalysts for chemical manufacturing.

#### 3. Physical / Chemical Properties

Nickel nitrate solutions are green transparent liquids with a slight odor of nitric acid. They are normally stable. Nickel nitrate solutions are corrosive and may produce oxides of nitrogen upon thermal decomposition.

#### 4. Health Effects

Nickel nitrate solutions are corrosive and will cause burns to eyes and skin if used improperly. In applications where vapors are created, inhaling will irritate the nose and throat. Nickel compounds, in general, have been known to cause allergic reactions by contact with the skin and respiratory tract. The International Agency for Research on Cancer (IARC) has determined that nickel compounds as a group are carcinogenic to humans.

#### 5. Environmental Effects

Nickel nitrate solutions contain nickel nitrate, a chemical recognized by the U.S. Environmental Protection Agency (EPA) as a hazardous substance subject to reporting to the National Response Center, as well as state and local authorities. Releases to the environment in excess of 100 pounds of nickel nitrate are reportable.

#### 6. Exposure

Exposure to nickel nitrate solutions may occur in industrial applications where engineering controls have failed or are not in place. Exposure can also result when safe work procedures are not followed, or workers do not use personal protective equipment.

Exposure to nickel nitrate solutions may occur during environmental releases if response operations are not conducted properly or in a timely manner.



## 7. Risk Management

Engineering controls such as exhaust ventilation, dedicated closed systems, leak detection, welded joints, and proper storage equipment design are recommended to minimize the risk of exposure to nickel nitrate solutions. Safe work practices and worker training on the handling of corrosive liquids is also recommended. Personal protective equipment such as safety glasses, impervious gloves, respirators, and work uniforms are necessary to prevent worker exposure.

In the event of an environmental release of nickel nitrate solutions, emergency personnel should follow appropriate emergency response guidelines and wear adequate protective equipment to minimize exposure during response operations.

## 8. Additional Information

- The Shepherd Chemical Company Material Safety Data Sheets, [www.shepchem.com](http://www.shepchem.com)
- Hazardous Substance Data Bank (HSDB), <http://toxnet.nlm.nih.gov/cgi-bin/sis/htmlgen?HSDB>

## 9. Contact Information

For more information, call (513) 458-6847 or email [bpelsor@shepchem.com](mailto:bpelsor@shepchem.com)