



Johnson Matthey Catalysts

Material Safety Data Sheet

1. Chemical Product and Company Identification

Effective Date: 06/25/2003
Revision: 03

Product Name: PRICAT 9932

Principal Use: Hydrogenation catalyst

Description: Nickel finely dispersed on a silica support and suspended in hardened triglyceride.

Johnson Matthey Catalysts
Two TransAm Plaza Drive
OAKBROOK TERRACE IL 60181
1-630-268-6300

* Medical Emergency (24 hr.): In USA and Canada dial 1-877-630-4584

* Chemical Emergency (24 hr.) Involving Transportation Spills, Leaks, Fires
or Accidents: 1-800-424-9300

2. Composition/Information on Ingredients

<u>Hazardous Ingredients</u>	<u>%(w/w)</u>
Nickel (metal) (CAS 7440-02-0)	1.0-<30
Silica, amorphous (CAS 7631-86-9)	--

Ingredients not precisely identified are proprietary or nonhazardous. Values are not product specifications.

3. Hazards Identification

Emergency Overview:

Appearance: Dark gray pellets

Physical Hazards: None

Health Hazards:

- Irritant (eyes and respiratory passages).
- Inhalation (TLV).
- Nickel/nickel compounds classified (IARC) as carcinogenic to humans.
- May cause sensitization by skin contact.

*** continued***

Emergency Overview (continued):

* Hazard summary defined by OSHA Hazard Comm. Std., 29 CFR 1910.1200.

Potential Health Effects:

General: This health hazard assessment based on information from commercial and scientific literature.

Ingestion:

- Ingestion may cause irritation of the gastrointestinal tract.
- May cause headache, nausea or vomiting.

Eye Contact:

- Dust may cause irritation.

Skin contact:

- May cause sensitization by skin contact.
- Repeated or prolonged contact may cause mild irritation.

Skin absorption:

- This product will probably not be absorbed through human skin.

Inhalation:

- Unlikely to be hazardous by inhalation unless present as a dust. High concentrations of dust may be irritating to the upper respiratory tract. Dust may enter the lungs and be slow to clear.

4. First Aid Measures**Skin:**

- Remove contaminated clothing.
- Wash material off skin with soap and plenty of water.
- If redness, itching or a burning sensation develops, get medical attention.

Eyes:

- Immediately flush with eyewash solution or clean water.
- If redness, itching or a burning sensation develops, have eyes examined and treated by medical personnel.

Ingestion:

- Do not induce vomiting.
- Give 1 or 2 glasses of water to drink. (Never give anything by mouth to an unconscious person).
- If gastrointestinal symptoms develop, consult medical personnel.

Inhalation:

- Remove person to fresh air, keep warm and at rest.
 - If a cough or other respiratory symptoms develop, consult medical personnel.
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5. Fire Fighting Measures

Flashpoint and method: 300 deg. C (COC) triglyceride

Autoignition temperature: 350 deg. C (triglyceride)

Flammable limits (STP): Not applicable

General hazards: Discharged catalyst may be pyrophoric (See Section 8, Exposure Controls\Personal Protection).

Firefighting instructions:

- Water spray, foam, dry powder or carbon dioxide.

Firefighting equipment:

- Self-contained breathing apparatus with full faceshield and protective clothing.

Hazardous combustion products:

- None known.

6. Accidental Release Measures

- Do not allow to enter drains, sewers or watercourses.
- Wear skin, eye and respiratory protection during cleanup.
- Sweep up material (avoid creating dust) and put into a container for reclaiming or disposal.

7. Handling and Storage

- Store new and spent material in sealed containers.
- Do not eat, drink or smoke in areas where material is present.
- Avoid creating dust.
- When discharging the material from a reactor, personnel should wear full protective equipment to prevent skin contact, eye contact and inhalation of dust (See Section 8, Exposure Controls).
- Further advice is also given in the Johnson Matthey Catalysts publication, "Catalyst Handling."

8. Exposure Controls/Personal Protection

Exposure guidelines: No ACGIH TLV or OSHA PEL is assigned to this mixture.

Hazardous Ingredient	OSHA PEL 8 Hr TWA	ACGIH 8 Hr TWA
Nickel (metal)	1 mg/m ³ Nickel, metal and insoluble compounds	1.5 mg/m ³ Nickel, elemental, inhalable particulate mass
Silica, amorphous	5mg/m ³ Respirable fraction 15 mg/m ³ Total dust. Particulates, not otherwise regulated	-

continued

Engineering controls: (continued)

- Where dust may be generated, provide exhaust ventilation to keep dust levels below TLV.
- The reduced material should not be exposed to gases containing carbon monoxide at temperatures between 120 °F (50 °C) and 400 °F (200 °C) because of the danger of formation of nickel carbonyl under these conditions.
- Further advice is given in the Johnson Matthey Catalysts publication, "Catalyst Handling."

Respiratory protection:

- If not possible to keep dust level below TLV, wear a NIOSH/MSHA approved or equivalent dust respirator, 29 CFR 1910.134 (See ANSI Z 88.2, 1980 for requirements and selection) to prevent chronic exposure.

Protective clothing:

- Protect the skin with appropriate personal protective equipment.

Eye protection:

- Protect the eyes with appropriate personal protective equipment.

9. Physical and Chemical Properties

Appearance: Dark gray pellets

Boiling point: Not applicable

Vapor pressure (mm Hg at 20°C.): Not applicable

Vapor density (air = 1): Not applicable

Solubility in water: Insoluble

pH: Not applicable

Bulk density: approx. 50 lbs/ft³

% Volatile by volume: 0%

10. Stability and Reactivity

Stability:

- Stable under normal conditions.
- Under certain conditions of temperature and pressure, material containing metallic nickel can form significant concentrations of nickel carbonyl when exposed to gases containing carbon monoxide. See Section 11, Toxicological Information, for health hazard information.

Incompatibility:

- Strong acids, strong oxidizing agents and reducing agents.

Hazardous decomposition products:

- Under certain conditions of low temperature and high pressure, material containing metallic nickel can form significant concentrations of nickel carbonyl when exposed to gases containing carbon monoxide. See Section 8, Exposure Controls/Personal Protection, and Section 11, Toxicological Information.

Hazardous polymerization:

- Will not occur.
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11. Toxicological Information

Possible Human Health Effects:

Inhalation:

- Unlikely to be hazardous by inhalation unless present as a dust. High concentrations of dust may be irritating to the upper respiratory tract. Dust may enter lungs and be slow to clear.
- Under certain conditions (low temperatures and high pressures), material containing metallic nickel can form significant concentrations of nickel carbonyl when exposed to gases containing carbon monoxide. Nickel carbonyl is a low boiling point liquid whose vapors cause severe pulmonary irritation. Nickel carbonyl is highly toxic and lethal to humans at 0.46 ppm / 3.2 mg/m³ for 10 minute exposure, 0.16 ppm / 1.1 mg/m³ for 1-hour exposure (AEGL-3).
Initial symptoms are headaches and vomiting. Delayed symptoms (12-36 hours after exposure) include blue color of the skin, decreased white blood cell count and difficult breathing. Animal inhalation studies for cancer have been positive. Also see Section 8, Exposure Controls/Personal Protection, and Section 10, Stability and Reactivity, for additional information.

Skin contact:

- May cause sensitization by skin contact.

Eye contact:

- Dust may cause irritation.

Ingestion:

- The acute LD50 (rat) for nickel is >2000mg/kg.
- Ingestion may cause irritation of the gastrointestinal tract.
- May cause headache, nausea or vomiting.

Other effects of overexposure:

- The International Agency for Research on Cancer (IARC) has classified nickel and nickel compounds as carcinogenic to humans. This classification applies to the group of chemicals as a whole and not necessarily to all individual chemicals within the group. The National Toxicology Program (NTP) has stated that nickel and certain nickel compounds show sufficient evidence of carcinogenicity in experimental animals.

12. Ecological Information

The product is essentially insoluble in water. Although, unused product is not a hazardous waste under RCRA, 40 CFR 261, because of environmental concerns, care should be taken to minimize release to the environment (See Section 13, Disposal Considerations).

13. Disposal Considerations

Disposal method:

- Discarded unused product is not a hazardous waste under RCRA, 40 CFR 261. However, used material may have different hazards from their new material.
- It is recommended that unwanted new and used (spent) material be collected for recycling/reclamation.
- Johnson Matthey Catalysts has established the CATALYST CARE program. Under this program, Johnson Matthey Catalysts has arranged for catalyst recycling services be made available directly to users of Johnson Matthey catalysts and absorbents.

Container disposal:

- Empty container retains product residue.
- Observe all hazard precautions.
- Do not distribute, make available, furnish or reuse empty container when once emptied of original product.
- Remove all product residue from container and puncture or otherwise destroy empty container before disposal.

14. Transport Information

Dot Hazard Description: Not regulated

15. Regulatory Information

TSCA (Toxic Substances Control Act) Regulations, 40 CFR 710:
All ingredients are on the TSCA Chemical Substances Inventory.

CERCLA and SARA Regulations (40 CFR 355, 370 and 372):
Section 313 Supplier Notification: This product contains the following toxic chemicals subject to the reporting requirements of SARA Section 313:

Nickel (metal) (CAS 7440-02-0)
Aluminum oxide (CAS 1344-28-1)

California Proposition 65:
WARNING: This product contains nickel compounds which are known to the State of California to cause cancer.

16. Other Information

Users Responsibility

This product Material Safety Data Sheet provides health and safety information. The product is to be used in applications consistent with our product literature. Individuals handling this product should be informed of the recommended safety precautions and should have access to this information. You should evaluate any other uses and their exposures so that appropriate handling practices and training programs can be established to ensure safe workplace operations. Please consult your Johnson Matthey Catalysts sales representative for any further information.

CATALYST CARE is a service mark of the Johnson Matthey group of companies.