

SAFETY DATA SHEET

1. Identification

Product identifier: Copper, 1,000 xg/mL or 10,000

Other means of identification

Product No.: 6451, 5729, 5713

Recommended use and restriction on use

Recommended use: Not available.

Restrictions on use: Not known.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer

Company Name: Avantor Performance Materials, Inc.
Address: 3477 Corporate Parkway, Suite 200
Center Valley, PA 18034

Telephone: Customer Service: 855-282-6867

Fax:
Contact Person: Environmental Health & Safety
e-mail: info@avantormaterials.com

Emergency telephone number:

24 Hour Emergency: 908-859-2151

Chemtrec: 800-424-9300

2. Hazard(s) identification

Hazard classification

Health hazards

Skin corrosion/irritation Category 2

Environmental hazards

Acute hazards to the aquatic environment Category 2

Label elements

Hazard symbol:



Signal word: Warning

Hazard statement: Causes skin irritation.
Harmful to aquatic life.

Precautionary statement

Prevention: Wash hands thoroughly after handling. Avoid release to the environment.
Wear protective gloves.

Response: IF ON SKIN: Wash with plenty of water. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse. Specific treatment (see this label).

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.

Other hazards which do not result in GHS classification: None.

3. Composition/information on ingredients

Mixtures

Chemical identity	Common name and synonyms	CAS number	Content in percent (%) [*]
NITRIC ACID		7697-37-2	<4%
COPPER		7440-50-8	0.1 - 1%

^{*} All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

General information: Get medical advice/attention if you feel unwell. Show this safety data sheet to the doctor in attendance.

Ingestion: Rinse mouth. Call a POISON CENTER or doctor/physician if you feel unwell.

Inhalation: Move to fresh air. Get medical attention if symptoms occur.

Skin contact: Wash skin thoroughly with soap and water. Get medical attention if irritation persists after washing. Wash contaminated clothing before reuse.

Eye contact: Flush thoroughly with water. If irritation occurs, get medical assistance.

Most important symptoms/effects, acute and delayed

Symptoms: Irritating to eyes, respiratory system and skin.

Indication of immediate medical attention and special treatment needed

Treatment: Treat symptomatically.

5. Fire-fighting measures

General fire hazards: In case of fire and/or explosion do not breathe fumes.

Suitable (and unsuitable) extinguishing media

Suitable extinguishing media: Use fire-extinguishing media appropriate for surrounding materials.

Unsuitable extinguishing media: None known.

Specific hazards arising from the chemical: Contact with metals may evolve flammable hydrogen gas.

Special protective equipment and precautions for firefighters

Special fire fighting procedures:	Move containers from fire area if you can do so without risk. Use water spray to keep fire-exposed containers cool. Cool containers exposed to flames with water until well after the fire is out.
Special protective equipment for fire-fighters:	Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures:	Keep unauthorized personnel away. Ventilate closed spaces before entering them. Avoid inhalation of vapors and spray mists. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Use personal protective equipment. See Section 8 of the MSDS for Personal Protective Equipment.
Methods and material for containment and cleaning up:	Absorb spill with vermiculite or other inert material, then place in a container for chemical waste. Clean surface thoroughly to remove residual contamination.
Notification Procedures:	Inform authorities if large amounts are involved. Prevent runoff from entering drains, sewers, or streams.
Environmental precautions:	Do not contaminate water sources or sewer. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling:	Use personal protective equipment as required. Avoid contact with eyes, skin, and clothing. Avoid inhalation of dust. Wash thoroughly after handling.
Conditions for safe storage, including any incompatibilities:	Keep containers tightly closed. Store in cool, dry place. Store in a well-ventilated place. Store away from incompatible materials.

8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Chemical identity	Type	Exposure Limit values	Source
NITRIC ACID	TWA	2 ppm	US. ACGIH Threshold Limit Values (2011)
	STEL	4 ppm	US. ACGIH Threshold Limit Values (2011)
	STEL	4 ppm 10 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	REL	2 ppm 5 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	PEL	2 ppm 5 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
	TWA	2 ppm 5 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
	STEL	4 ppm 10 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
COPPER - Fume.	TWA	0.2 mg/m3	US. ACGIH Threshold Limit Values (2011)
COPPER - Dust and mist. - as Cu	TWA	1 mg/m3	US. ACGIH Threshold Limit Values (2011)
	REL	1 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
COPPER - Fume. - as Cu	PEL	0.1 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
COPPER - Dust and mist. - as Cu	PEL	1 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
COPPER - Fume. - as Cu	TWA	0.1 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
COPPER - Dust and mist. - as Cu	TWA	1 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)

Appropriate engineering controls

No data available.

Individual protection measures, such as personal protective equipment

General information: 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. An eye wash and safety shower must be available in the immediate work area.

Eye/face protection: Wear safety glasses with side shields (or goggles).

Skin protection

Hand protection: Chemical resistant gloves

Other: Wear suitable protective clothing.

Respiratory protection: In case of inadequate ventilation use suitable respirator.

Hygiene measures: Provide eyewash station and safety shower. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing to remove contaminants. Discard contaminated footwear that cannot be cleaned.

9. Physical and chemical properties

Appearance

Physical state: Liquid
Form: Liquid
Color: Pale blue

Odor:	Odorless
Odor threshold:	No data available.
pH:	No data available.
Melting point/freezing point:	No data available.
Initial boiling point and boiling range:	No data available.
Flash Point:	Not applicable
Evaporation rate:	No data available.
Flammability (solid, gas):	No data available.
Upper/lower limit on flammability or explosive limits	
Flammability limit - upper (%):	No data available.
Flammability limit - lower (%):	No data available.
Explosive limit - upper (%):	No data available.
Explosive limit - lower (%):	No data available.
Vapor pressure:	No data available.
Vapor density:	No data available.
Relative density:	No data available.
Solubility(ies)	
Solubility in water:	Completely Soluble
Solubility (other):	No data available.
Partition coefficient (n-octanol/water):	No data available.
Auto-ignition temperature:	No data available.
Decomposition temperature:	No data available.
Viscosity:	No data available.

10. Stability and reactivity

Reactivity:	No dangerous reaction known under conditions of normal use.
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 bases. Powdered metal. Flammable/combustible material.
Hazardous decomposition products:	Nitrogen Oxides

11. Toxicological information

Information on likely routes of exposure

Ingestion:	May cause irritation of the gastrointestinal tract.
Inhalation:	May cause damage to mucous membranes in nose, throat, lungs and bronchial system.
Skin contact:	Causes skin irritation.
Eye contact:	May cause irritation.

Information on toxicological effects**Acute toxicity (list all possible routes of exposure)****Oral****Product:** No data available.**Dermal****Product:** No data available.**Inhalation****Product:** No data available.**Specified substance(s):**

NITRIC ACID LC 50 (Rat, 4 h): 65 mg/l

Repeated dose toxicity**Product:** No data available.**Skin corrosion/irritation****Product:** Causes skin irritation.**Serious eye damage/eye irritation****Product:** May irritate eyes.**Respiratory or skin sensitization****Product:** Not a skin sensitizer.**Carcinogenicity****Product:** This substance has no evidence of carcinogenic properties.**IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:**

No carcinogenic components identified

US. National Toxicology Program (NTP) Report on Carcinogens:

No carcinogenic components identified

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050):

No carcinogenic components identified

Germ cell mutagenicity**In vitro****Product:** No mutagenic components identified**In vivo****Product:** No mutagenic components identified**Reproductive toxicity****Product:** No components toxic to reproduction**Specific target organ toxicity - single exposure****Product:** None known.**Specific target organ toxicity - repeated exposure****Product:** None known.**Aspiration hazard****Product:** Not classified**Other effects:**

None known.

12. Ecological information

Ecotoxicity:

Acute hazards to the aquatic environment:

Fish

Product: No data available.

Specified substance(s):

NITRIC ACID LC 50 (Fish, 48 h): 100 - 330 mg/l Mortality

COPPER LC 50 (Fathead minnow (*Pimephales promelas*), 96 h): 3.3 mg/l Mortality

Aquatic invertebrates

Product: No data available.

Specified substance(s):

NITRIC ACID LC 50 (Cockle (*Cerastoderma edule*), 48 h): 330 - 1,000 mg/l Mortality
LC 50 (Green or European shore crab (*Carcinus maenas*), 48 h): 180 mg/l Mortality

COPPER EC 50 (Water flea (*Daphnia magna*), 48 h): 0.102 mg/l Intoxication
LC 50 (Water flea (*Daphnia magna*), 48 h): 0.026 - 0.036 mg/l Mortality

Chronic hazards to the aquatic environment:

Fish

Product: No data available.

Aquatic invertebrates

Product: No data available.

Toxicity to Aquatic Plants

Product: No data available.

Specified substance(s):

COPPER LC 50 (Green algae (*Scenedesmus dimorphus*), 9 d): 0.0627 mg/l Mortality

Persistence and degradability

Biodegradation

Product: There are no data on the degradability of this product.

BOD/COD ratio

Product: No data available.

Bioaccumulative potential

Bioconcentration factor (BCF)

Product: No data available on bioaccumulation.

Partition coefficient n-octanol / water (log Kow)

Product: No data available.

Mobility in soil: The product is water soluble and may spread in water systems.

Other adverse effects: Harmful to aquatic organisms.

13. Disposal considerations

Disposal instructions:	Discharge, treatment, or disposal may be subject to national, state, or local laws.
Contaminated packaging:	Since emptied containers retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT

UN number:	UN 3264
UN proper shipping name:	Corrosive liquid, acidic, inorganic, n.o.s.(NITRIC ACID)
Transport hazard class(es)	
Class(es):	8
Label(s):	8
Packing group:	III
Marine Pollutant:	No

IMDG

UN number:	UN 3264
UN proper shipping name:	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.(NITRIC ACID)
Transport hazard class(es)	
Class(es):	8
Label(s):	8
EmS No.:	F-A, S-B
Packing group:	III
Marine Pollutant:	No

IATA

UN number:	UN 3264
Proper Shipping Name:	Corrosive liquid, acidic, inorganic, n.o.s.(NITRIC ACID)
Transport hazard class(es):	
Class(es):	8
Label(s):	8
Marine Pollutant:	No
Packing group:	III

15. Regulatory information

US federal regulations

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

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

None present or none present in regulated quantities.

CERCLA Hazardous Substance List (40 CFR 302.4):

NITRIC ACID	Reportable quantity: 1000 lbs.
COPPER	Reportable quantity: 5000 lbs.

Superfund amendments and reauthorization act of 1986 (SARA)

Hazard categories

☒ Acute (Immediate) ☐ Chronic (Delayed) ☐ Fire ☐ Reactive ☐ Pressure Generating

SARA 302 Extremely hazardous substance

Chemical identity	RQ	Threshold Planning Quantity
NITRIC ACID	1000 lbs.	1000 lbs.

SARA 304 Emergency release notification

Chemical identity	RQ
NITRIC ACID	1000 lbs.
COPPER	5000 lbs.

SARA 311/312 Hazardous chemical

Chemical identity	Threshold Planning Quantity
NITRIC ACID	500lbs
COPPER	500 lbs

SARA 313 (TRI reporting)

Chemical identity	Reporting threshold for other users	Reporting threshold for manufacturing and processing
NITRIC ACID	10000 lbs	25000 lbs.
COPPER	10000 lbs	25000 lbs.

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3)

NITRIC ACID	Reportable quantity: 1000 lbs.
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Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):

NITRIC ACID	Threshold quantity: 15000 lbs
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US state regulations
US. California Proposition 65

No ingredient regulated by CA Prop 65 present.

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

NITRIC ACID	Listed
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US. Massachusetts RTK - Substance List

NITRIC ACID	Listed
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US. Pennsylvania RTK - Hazardous Substances

NITRIC ACID	Listed
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US. Rhode Island RTK

NITRIC ACID	Listed
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Inventory Status:

Australia AICS:	On or in compliance with the inventory
Canada DSL Inventory List:	On or in compliance with the inventory
EU EINECS List:	On or in compliance with the inventory
Japan (ENCS) List:	On or in compliance with the inventory
Korea Existing Chemicals Inv. (KECI):	On or in compliance with the inventory
Philippines PICCS:	On or in compliance with the inventory
US TSCA Inventory:	On or in compliance with the inventory
Australia AICS:	On or in compliance with the inventory
EINECS, ELINCS or NLP:	On or in compliance with the inventory
China Inv. Existing Chemical Substances:	Not in compliance with the inventory.
Canada NDSL Inventory:	Not in compliance with the inventory.
New Zealand Inventory of Chemicals:	On or in compliance with the inventory.
Japan ISHL Listing:	Not in compliance with the inventory.
Japan Pharmacopoeia Listing:	Not in compliance with the inventory.

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

NFPA Hazard ID



Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe
COR: Corrosive

Issue date: 07-16-2014

Revision date: No data available.

Version #: 2.0

Further information: No data available.

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