

**Section 1: Product & Company Information**

**Product Identifier:** Nitric Acid, 50%

**Other Means of Identification**

Product Number: No data available.

**Recommended Use and Restrictions on Use**

Recommended Use: Laboratory chemicals.  
Restrictions on Use: Not for food, drug, pesticide or biocidal product use

**Manufacturer / Importer / Supplier / Distributor Information**

**Company Name:** CORECHEM Inc.  
**Address:** 4320 Greenway Drive  
Knoxville, TN 37918  
USA

**Information Telephone Number:** 1-865-524-4239  
**Fax Number:** 1-865-524-3375  
**Website:** www.corecheminc.com  
**Contact Person:** Regulatory Manager  
**E-mail:** regulatory@corecheminc.com

**Emergency Phone Number:** Chemtrec® 1-800-424-9300 / Outside USA 1-703-527-3887 (monitored 24 hours/day)

**Section 2: Hazards Identification**

**GHS Hazard Classification(s)**

In accordance with OSHA Hazard Communication Standard 29 CFR 1910.1200 (HazCom 2012).

**Physical Hazard(s)**

Oxidizing, Liquids - 3 (O / Warning / H272 / P210, P220, P221, P280 / P370+P378 / - / P501)  
Corrosive to Metals - 1 (C / Warning / H290 / P234 / P390 / P406 / -)

**Health Hazard(s)**

Corrosion/Irritation, Skin - 1A (C / Danger / H314 / P260, P264, P280 / P301+P330+P331, P303+P361+P353, P363, P304+P340, P310, P321, P305+P351+P338 / P405 / P501)  
(Corrosion)Damage/Irritation, Eye - 1 (C / Danger / H318 / P280 / P305+P351+P338, P310 / - / -)

**Environmental Hazard(s)**

Not classified.

**Label Elements**

**Signal Word**  
**DANGER**

**Hazard Symbol(s)**



**Hazard Statement(s)**

H314: Causes severe skin burns and eye damage.  
H318: Causes serious eye damage.  
H272: May intensify fire; oxidizer.  
H290: May be corrosive to metals.

**Precautionary Statements**

**General**  
Not applicable.

**Prevention**

P210: Keep away from heat/sparks/open flames/hot surfaces. No smoking.  
P220: Keep/Store away from clothing/combustible materials.

P221: Take any precaution to avoid mixing with combustibles.  
 P234: Keep only in original container.  
 P260: Do not breathe dust/fume/gas/mist/vapors/spray.  
 P264: Wash face, hands and any exposed skin thoroughly after handling.  
 P280: Wear protective gloves/protective clothing/eye protection/face protection.

#### Response

P301 + P330 + P331: IF SWALLOWED: rinse mouth. Do NOT induce vomiting.  
 P303 + P361 + P353: IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.  
 P304 + P340: IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.  
 P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
 P310: Immediately call a POISON CENTER or doctor/physician.  
 P321: Specific treatment (see supplemental first aid instructions on this label).  
 P363: Wash contaminated clothing before reuse.  
 P370 + P378: In case of fire: Use suitable extinguishing media for extinction.  
 P390: Absorb spillage to prevent material damage.

#### Storage

P405: Store locked up.  
 P406: Store in corrosive resistant container with a resistant inner liner.

#### Disposal

P501: 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.

## Section 3: Composition/Information on Ingredients

#### Mixture

Chemical Identity <sup>2</sup>	Common Name/Synonym(s)	CAS # <sup>3</sup>	Weight %	Impurity or Stabilizing Additive
Nitric Acid	-	7697-37-2	50%	No

- Information regarding the composition and the percentage ranges of the mixtures ingredients are not presented as it Confidential Business Information (CBI). Where a medical emergency exists (as determined by medical professional), timely disclosure of CBI is assured. The information omitted pertains to only the names of the substances and the concentration in the mixture (product) and can only be requested by a doctor/physician or Local/State/Provincial or Federal Authority.
- Non-hazardous ingredients are not presented as to protect the proprietary formula of the product.
- "—" Indicates ingredient is a mixture and contains multiple ingredients or may have no identifying CAS number.

## Section 4: First-Aid Measures

#### General Information

Immediate medical attention is required. Show this safety data sheet to the doctor in attendance.

#### Inhalation

If breathing is difficult, give oxygen. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Remove from exposure, lie down. Call a physician immediately.

#### Skin Contact

Wash off immediately with plenty of water for at least 15 minutes. Remove and wash contaminated clothing before re-use. Call a physician immediately.

#### Eye Contact

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required.

#### Ingestion

Do not induce vomiting. Never give anything by mouth to an unconscious person. Clean mouth with water. Call a physician immediately.

#### Most important symptoms/effects, acute and delayed

##### Symptoms

Causes burns by all exposure routes. Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation: Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated

#### Indication of immediate medical attention and special treatment needed

##### Hazards

No data available.

##### Treatment

Treat symptomatically.

## Section 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

CO<sub>2</sub>, dry chemical, dry sand, alcohol-resistant foam.

#### Unsuitable Extinguishing Media

None known.

### Specific Hazards Arising from the Chemical

Thermal decomposition can lead to the release of irritating gases and vapors. The product causes burn of eyes, skin and mucous membranes. Oxidizer: Contact with combustible/organic material may cause fire. May ignite combustibles (wood paper, oil, clothing, etc.).

### Special Protective Equipment and Precautions for Firefighters

#### Special Fire-Fighting Equipment 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

As in any fire, wear self-contained breathing apparatus pressure-demand (OSHA/NIOSH approved or equivalent) and full protective gear.

## Section 6: Accidental Release Measures

### Personal Precautions, Protective Equipment and Emergency Procedures

Evacuate personnel to safe areas. Keep people away from upwind spill/leak. Ensure adequate ventilation. Use personal protective equipment.

### Methods and Materials for Containment and Clean-Up

Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. Sweep up and shovel into suitable containers for disposal.

### Notification Procedures

Prevent entry into waterways, sewer, basements or confined areas. Inform authorities if large amounts are involved.

### 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.

## Section 7: Handling and Storage

### Precautions for Safe Handling

Use only under a chemical fume hood. Wear personal protective equipment. Do not get in eyes, on skin, or on clothing. Do not ingest. Do not breathe vapor or spray mist. Keep away from clothing and other combustible materials.

### Conditions for Safe Storage, including any Incompatibilities

Keep containers tightly closed in a dry, cool and well-ventilated place. Do not store near combustible materials. Do not store in metal containers. Keep in properly labeled containers. Corrosives area.

## Section 8: Exposure Controls/Personal Protection

### Control Parameters

#### Occupational Exposure Limits

Chemical Identity	Type	Value	Source
Nitric Acid	TWA	2 ppm	US. ACGIH Threshold Limit Values
Nitric Acid	STEL	4 ppm	US. ACGIH Threshold Limit Values
Nitric Acid	(Vacated) TWA	2 ppm	US OSHA Table Z-1
Nitric Acid	(Vacated) TWA	5 mg/m <sup>3</sup>	US OSHA Table Z-1
Nitric Acid	(Vacated) STEL	4 ppm	US OSHA Table Z-1
Nitric Acid	(Vacated) STEL	10 mg/m <sup>3</sup>	US OSHA Table Z-1
Nitric Acid	TWA	2 ppm	US OSHA Table Z-1
Nitric Acid	TWA	5 mg/m <sup>3</sup>	US OSHA Table Z-1
Nitric Acid	IDLH	25 ppm	NIOSH IDLH
Nitric Acid	TWA	2 ppm	NIOSH IDLH
Nitric Acid	TWA	5 mg/m <sup>3</sup>	NIOSH IDLH
Nitric Acid	STEL	4 ppm	NIOSH IDLH
Nitric Acid	STEL	10 mg/m <sup>3</sup>	NIOSH IDLH
Nitric Acid	TWA	2 ppm	Mexico OEL (TWA)

Nitric Acid	TWA	5 mg/m <sup>3</sup>	Mexico OEL (TWA)
Nitric Acid	STEL	4 ppm	Mexico OEL (TWA)
Nitric Acid	STEL	10 mg/m <sup>3</sup>	Mexico OEL (TWA)

### Biological Limit Values

The product does not contain any relevant quantities of hazardous materials with assigned biological limit values.

### Appropriate Engineering Controls

Use only under a chemical fume hood. Ensure that eyewash stations and safety showers are close to the workstation location. Ensure adequate ventilation, especially in confined areas.

### Individual protection measures, such as personal protective equipment (PPE)

#### 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. Eye wash facilities and emergency shower must be available when handling this product.

#### Eye/Face Protection

Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166. Tightly fitting safety goggles. Face-shield.

#### Skin Protection

##### Hand Protection

Wear appropriate chemical resistant gloves.

##### Other

Wear appropriate chemical resistant clothing.

#### Respiratory Protection

Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirators if exposure limits are exceeded or if irritation or other symptoms are experienced.

#### 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. Do not get in eyes. Do not get this material in contact with skin.

## Section 9: Physical and Chemical Properties

### Appearance:

Physical State: Liquid  
Color: Colorless to slightly yellow

**Odor:** Strong Acrid.

**Odor Threshold:** No data available.

**pH:** < 1.0 (0.1M)

**Melting Point/Freezing Point:** -41 °C / -41.8 °F

**Initial Boiling Point and Boiling Range:** Not applicable.

**Flash Point:** Not applicable.

**Evaporation Rate** (butyl acetate=1): 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:** 0.94 kPa (20°C)

**Vapor Density** (air =1): No data available.

**Relative Density** (water=1): 1.40

### Solubility(ies):

Solubility in water: Miscible.

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.

### Other Information:

Molecular Weight: 63.01

Formula: HNO<sub>3</sub>

## Section 10: Stability and Reactivity

### Reactivity

Yes

### Chemical Stability

Oxidizer: Contact with combustible/organic material may cause fire.

### Possibility of Hazardous Reactions

Hazardous polymerization does not occur. Decomposes on heating.

### Conditions to Avoid

Incompatible products. Combustible material. Excess heat. Exposure to air or moisture over prolonged periods.

### Incompatible Materials

Combustible material, Strong bases, Reducing agents, Metals, Powdered metals, Organic materials, Aldehydes, Alcohols, Cyanides, Ammonia, Strong reducing agents

### Hazardous Decomposition Products

Nitrogen oxides (NOx), Thermal decomposition can lead to release of irritating gases and vapors.

## Section 11: Toxicological Information

### Information on routes of exposure

**Ingestion:** May cause burns of the gastrointestinal tract if swallowed.

**Inhalation:** May cause damage to mucous membranes in nose, throat, lungs and bronchial system.

**Skin Contact:** Causes severe skin burns.

**Eye Contact:** Causes serious eye damage.

### Information on Toxicological Effects

#### Acute Toxicity (List all possible routes of exposure)

##### Oral

No data available.

##### Dermal

No data available.

##### Inhalation

Nitric Acid: LC 50 = 2500 ppm. (Rat) 1h

##### Repeated Dose Toxicity

No data available.

### Skin Corrosion/Irritation

Causes severe burns by all exposure routes.

### Serious Eye Damage/Eye Irritation

Causes severe burns by all exposure routes.

### Respiratory/Skin Sensitization

Not a skin nor a respiratory sensitizer.

### Carcinogenicity

#### IARC Monographs on the Evaluation of Carcinogenic Risks to Humans

No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

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

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

#### US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1052)

No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

### Germ Cell Mutagenicity

#### In Vitro

No mutagenic components identified.

#### In Vivo

No mutagenic components identified.

### Reproductive Toxicity

None known.

**Specific Target Organ Toxicity – Single Exposure**

None known.

**Specific Target Organ Toxicity – Repeated Exposure**

None known.

**Aspiration Hazard**

Not classified.

**Other Effects**

The toxicological properties have not been fully investigated.

## Section 12: Ecological Information

**Ecotoxicity**

**Acute Hazards to the Aquatic Environment**

**Fish**

LC50: = 72 mg/L, 96h (Gambusia affinis)

**Aquatic Invertebrates**

No data available.

**Toxicity to Aquatic Plants**

No data available.

**Chronic Hazards to the Aquatic Environment**

**Fish**

No data available.

**Aquatic Invertebrates**

No data available.

**Toxicity to Aquatic Plants**

No data available.

**Persistence and Degradability**

**Biodegradation**

Miscible with water Persistence is unlikely based on information available.

**BOD/COD Ratio**

No data available.

**Bioaccumulative Potential**

**Bioconcentration Factor (BCF)**

No data available on bioaccumulation.

**Partition Coefficient n-octanol / water (log Kow)**

Log Pow- -2.3

**Mobility in Soil**

Will likely be mobile in the environment due to its water solubility.

**Other Adverse Effects**

The product may affect the acidity (pH-factor) in water with risk of harmful effects to aquatic organisms.

## Section 13: Disposal Considerations

**Disposal Instructions**

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

**Contaminated Packaging**

Since emptied containers retain product residue, follow label warnings even after container is emptied.

## Section 14: Transportation Information

**US Department of Transportation (DOT)**

UN Number: UN2031

UN Proper Shipping Name: Nitric Acid

Technical Name: -

Hazard Class: 8  
Subsidiary Hazard Risk: -  
Packing Group: II  
DOT Label/Placard Exemptions: Not determined  
Special Provisions: A212, B2, B47, B53, IB2, IP15, T8, TP2.  
Packaging Exceptions: 49CFR 173.154  
Packaging Non-Bulk: 49CFR 173.158  
Packaging Bulk: 49CFR 173.242  
Reportable Quantity (RQ): 1000lb (454kg)  
Marine Pollutant: No  
Poison Inhalation Hazard: No  
Special precautions for user: Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.  
Emergency Response Guidebook (ERG) #: 157

*Important Note: Shipping descriptions may vary based on mode of transport, quantities, package size, and/or origin and destination. Consult your company's Hazardous Materials/Dangerous Goods expert for information specific to your situation.*

## Section 15: Regulatory Information

### US Federal Regulations

#### Toxic Substance Control Act (TSCA), Chemical Substance Inventory, Section 8(b)

This product or ingredient(s) are listed on the TSCA inventory. Any impurities present in this product are exempt from listing.

#### Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Hazardous Substance List (40 CFR 302.4)

The following chemical(s) in this material are subject to reporting levels established by CERCLA:

Nitric Acid: (CAS# 7697-37-2)

#### Clean Air Act (CAA), Section 112(r)

No chemical(s) in this material are subject to the reporting requirements of CAA.

#### Emergency Planning and Community Right-To-Know Act (EPCRA)

##### EPCRA 302 Extremely Hazardous Substance

The following chemical(s) in this material are subject to reporting levels established by SARA Title III, Section 302:

Nitric Acid: (CAS# 7697-37-2)

##### EPCRA 304 Emergency Response Notification

The following chemical(s) in this material are subject to reporting levels established by SARA Title III, Section 304:

Nitric Acid: (CAS# 7697-37-2)

##### EPCRA 311/312 Emergency and Hazardous Materials Reporting

Fire Hazard: No  
Sudden Release of Pressure: No  
Reactive: Yes  
Acute (Immediate) Health Hazard: Yes  
Chronic (Delayed) Health Hazard: Yes

##### EPCRA 313 Toxic Chemical Release Inventory (TRI) Reporting

The following chemical(s) in this material are subject to reporting levels established by SARA Title III, Section 313:

Nitric Acid: (CAS# 7697-37-2)

### US State Regulations

#### California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65)

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

*Important Note: Due to the changing nature of regulatory requirements, the information in this document should NOT be considered all-inclusive or authoritative. Users should make their own investigations to determine the suitability of the information for their particular purposes. International, Federal, State and Local regulations should be consulted to determine compliance with all required reporting requirements.*

## Section 16: Other Information

### Hazardous Materials Identification System (HMIS®) Classification

Health Hazard: 4

Chronic Health Hazard: \*

Flammability: 0

Physical Hazard: 0

(Hazard Rating: 0 – Minimal / 1 – Slight / 2 – Moderate / 3 – Serious / 4 – Severe)

### National Fire Protection Association (NFPA 704) Rating

Health Hazard: 4

Fire Hazard: 0

Reactivity Hazard: 0

Special: OX

(Hazard Rating: 0 – Minimal / 1 – Slight / 2 – Moderate / 3 – Serious / 4 – Severe)

Prepared By: Regulatory Manager  
Version #: 001  
Issue Date: July 9, 2015  
Revision Date: 8/1/2023  
Revisions: 1

#### Key to Abbreviations and Acronyms

ATE - Acute Toxicity Estimate	ACGIH - American Conference of Industrial Hygienists
BCF - Bioconcentration Factor	AIHA - American Industrial Hygiene Association
EC50 - Effective concentration, 50%	BEI - Biological Exposure Indices
IDHL - Immediately Dangerous to Life and Health	CAS - Chemical Abstracts Service
Kg - Kilogram	DOT - US Department of Transportation
l - Liter	EPA - US Environmental Protection Agency
lb - Pound	GHS - Globally Harmonized System of Classification and Labelling of Chemicals
LC50 - Lethal Concentration, 50%	IARC - International Agency for Research on Cancer
LD50 - Lethal Dose, 50%	IATA - International Air Transport Association
mg - milligram	IBC - Intermediate Bulk Container
ml - milliliter	IMDG - International Maritime Dangerous Goods
N/A - Not Applicable	NIOSH - National Institute for Occupational Safety and Health
N/D - Not Determined	NTP - National Toxicology Program
PEL - Permissible Exposure Limit	OSHA - US Occupational Health and Safety Administration
REL - Recommended Exposure Limit	SARA - US EPA Superfund Amendments and Reauthorization Act
STEL - Short-term Exposure Limit	TSCA - US EPA Toxic Substances Control Act
TWA - Time weighted average	UN - United Nations

#### References

HSDB® - Hazardous Substances Data Bank

#### Disclaimer

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