# Nitric Acid, 50% v/v (1+1)

Safety Data Sheet

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## SECTION 1: Identification

### 1.1. Identification

Product form : Mixtures

Product name : Nitric Acid, 50% v/v (1+1)

Product code : LC17770

### 1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : For laboratory and manufacturing use only.

### 1.3. Details of the supplier of the safety data sheet

LabChem Inc
Jackson's Pointe Commerce Park Building 1000, 1010 Jackson's Pointe Court
Zelienople, PA 16063 - USA
T 412-826-5230 - F 724-473-0647
info@labchem.com - www.labchem.com

### 1.4. Emergency telephone number

Emergency number : CHEMTREC: 1-800-424-9300 or 011-703-527-3887

## SECTION 2: Hazard(s) identification

### 2.1. Classification of the substance or mixture

**GHS-US classification**

| | |
|---|---|
| Corrosive to metals Category 1 | H290 |
| Skin corrosion/irritation Category 1B | H314 |
| Serious eye damage/eye irritation Category 1 | H318 |

Full text of H statements : see section 16

### 2.2. Label elements

**GHS-US labeling**

Hazard pictograms (GHS-US) :

GHS05

Signal word (GHS-US) : Danger

Hazard statements (GHS-US) : H290 - May be corrosive to metals
H314 - Causes severe skin burns and eye damage

Precautionary statements (GHS-US) : P234 - Keep only in original container
P260 - Do not breathe mist, vapors, spray
P264 - Wash exposed skin thoroughly after handling
P280 - Wear protective gloves, protective clothing, eye protection, face protection
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
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
P363 - Wash contaminated clothing before reuse
P390 - Absorb spillage to prevent material damage
P405 - Store locked up
P406 - Store in corrosive resistant container with a resistant inner liner
P501 - Dispose of contents/container to comply with local, state and federal regulations
If inhaled: Remove person to fresh air and keep comfortable for breathing

### 2.3. Other hazards

Other hazards not contributing to the classification : None.

### 2.4. Unknown acute toxicity (GHS US)

Not applicable

## SECTION 3: Composition/Information on ingredients

### 3.1. Substances

Not applicable

### 3.2. Mixtures

| Name | Product identifier | % | GHS-US classification |
|---|---|---|---|
| Water | (CAS No) 7732-18-5 | 60 | Not classified |
| Nitric Acid, 70% w/w | (CAS No) 7697-37-2 | 40 | Ox. Liq. 3, H272<br>Met. Corr. 1, H290<br>Skin Corr. 1A, H314<br>Eye Dam. 1, H318 |

Full text of hazard classes and H-statements : see section 16

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

First-aid measures general : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

First-aid measures after inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a poison center or doctor/physician.

First-aid measures after skin contact : Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Immediately call a poison center or doctor/physician.

First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center or doctor/physician.

First-aid measures after ingestion : Rinse mouth. Do NOT induce vomiting. Immediately call a poison center or doctor/physician.

### 4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries : Causes severe skin burns and eye damage.

Symptoms/injuries after eye contact : Causes serious eye damage.

### 4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

Suitable extinguishing media : Foam. Dry powder. Carbon dioxide. Water spray. Sand.

Unsuitable extinguishing media : Do not use a heavy water stream.

### 5.2. Special hazards arising from the substance or mixture

Reactivity : Thermal decomposition generates : Corrosive vapors.

### 5.3. Advice for firefighters

Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.

Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

#### 6.1.1. For non-emergency personnel

Protective equipment : Protective goggles. Protective clothing. Gloves. Combined gas/dust mask with filter type B/P3.

Emergency procedures : Evacuate unnecessary personnel.

#### 6.1.2. For emergency responders

Protective equipment : Equip cleanup crew with proper protection.

Emergency procedures : Ventilate area.

### 6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

### 6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials. Absorb spillage to prevent material damage.

### 6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Additional hazards when processed : May be corrosive to metals.

Precautions for safe handling : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor. Do not breathe mist, vapors, spray.

Hygiene measures : Wash exposed skin thoroughly after handling. Wash contaminated clothing before reuse.

### 7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Comply with applicable regulations.

Storage conditions : Keep only in the original container in a cool, well ventilated place away from : incompatible materials. Keep container closed when not in use.

Incompatible products : Strong bases. Halogens. metals. aluminum. Strong reducing agents.

Incompatible materials : Sources of ignition. Direct sunlight.

Packaging materials : Store in a corrosion resistant container with a resistant inner liner.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

| **Nitric Acid, 70% w/w (7697-37-2)** | | |
|---|---|---|
| ACGIH | ACGIH TWA (ppm) | 2 ppm (Nitric acid; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value) |
| ACGIH | ACGIH STEL (ppm) | 4 ppm (Nitric acid; USA; Short time value; TLV - Adopted Value) |
| OSHA | OSHA PEL (TWA) (mg/m³) | 5 mg/m³ |
| OSHA | OSHA PEL (TWA) (ppm) | 2 ppm |
| IDLH | US IDLH (ppm) | 25 ppm |
| NIOSH | NIOSH REL (TWA) (mg/m³) | 5 mg/m³ |
| NIOSH | NIOSH REL (TWA) (ppm) | 2 ppm |
| NIOSH | NIOSH REL (STEL) (mg/m³) | 10 mg/m³ |
| NIOSH | NIOSH REL (STEL) (ppm) | 4 ppm |

| **Water (7732-18-5)** |
|---|
| Not applicable |

### 8.2. Exposure controls

Appropriate engineering controls : Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Provide adequate general and local exhaust ventilation.

Personal protective equipment : Combined gas/dust mask with filter type B/P3. Gloves. Protective clothing. Protective goggles.

Hand protection : Wear protective gloves.

Eye protection : Chemical goggles or face shield.

Skin and body protection : Wear suitable protective clothing.

Respiratory protection : Wear appropriate mask.

Other information : Do not eat, drink or smoke during use.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state : Liquid

| | | |
|---|---|---|
| Appearance | : | Colorless to pale yellow liquid. |
| Color | : | Colourless to light yellow |
| Odor | : | characteristic Pungent |
| Odor threshold | : | No data available |
| pH | : | No data available |
| Melting point | : | No data available |
| Freezing point | : | No data available |
| Boiling point | : | No data available |
| Flash point | : | No data available |
| Relative evaporation rate (butyl acetate=1) | : | No data available |
| Flammability (solid, gas) | : | Non flammable. |
| Vapor pressure | : | No data available |
| Relative vapor density at 20 °C | : | No data available |
| Relative density | : | No data available |
| Specific gravity / density | : | 1.25 g/ml |
| Solubility | : | Soluble in water. |
| Log Pow | : | No data available |
| Auto-ignition temperature | : | No data available |
| Decomposition temperature | : | No data available |
| Viscosity, kinematic | : | 1.25 cSt |
| Viscosity, dynamic | : | No data available |
| Explosion limits | : | No data available |
| Explosive properties | : | No data available |
| Oxidizing properties | : | No data available |

### 9.2. Other information

No additional information available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

Thermal decomposition generates : Corrosive vapors.

### 10.2. Chemical stability

Not established.

### 10.3. Possibility of hazardous reactions

Not established.

### 10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures.

### 10.5. Incompatible materials

Strong reducing agents. Strong bases. metals. aluminum. Ammonia. combustible materials. Halogens.

### 10.6. Hazardous decomposition products

Nitrogen oxides. Thermal decomposition generates : Corrosive vapors.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

| | | |
|---|---|---|
| Likely routes of exposure | : | Inhalation; Skin and eye contact |
| Acute toxicity | : | Not classified |

| **Water (7732-18-5)** | |
|---|---|
| LD50 oral rat | ≥ 90000 mg/kg |
| ATE US (oral) | 90000.000 mg/kg body weight |

| | | |
|---|---|---|
| Skin corrosion/irritation | : | Causes severe skin burns and eye damage. |
| Serious eye damage/irritation | : | Causes serious eye damage. |

| | | |
|---|---|---|
| Respiratory or skin sensitization | : | Not classified |
| Germ cell mutagenicity | : | Not classified |
| Carcinogenicity | : | Not classified |
| Reproductive toxicity | : | Not classified |
| Specific target organ toxicity – single exposure | : | Not classified |
| Specific target organ toxicity – repeated exposure | : | Not classified |
| Aspiration hazard | : | Not classified |
| Potential Adverse human health effects and symptoms | : | Based on available data, the classification criteria are not met. |
| Symptoms/injuries after eye contact | : | Causes serious eye damage. |

## SECTION 12: Ecological information

### 12.1. Toxicity

| Nitric Acid, 70% w/w (7697-37-2) | |
|---|---|
| EC50 Daphnia 1 | 180 mg/l (EC50; 48 h) |
| LC50 fish 2 | 72 ppm (LC50; 96 h) |
| Threshold limit algae 1 | > 19 mg/l (EC0) |

### 12.2. Persistence and degradability

| Nitric Acid, 50% v/v (1+1) | |
|---|---|
| Persistence and degradability | Not established. |

| Nitric Acid, 70% w/w (7697-37-2) | |
|---|---|
| Persistence and degradability | Biodegradability: not applicable. No test data on mobility of the components available. |
| Biochemical oxygen demand (BOD) | Not applicable |
| Chemical oxygen demand (COD) | Not applicable |
| ThOD | Not applicable |

| Water (7732-18-5) | |
|---|---|
| Persistence and degradability | Not established. |

### 12.3. Bioaccumulative potential

| Nitric Acid, 50% v/v (1+1) | |
|---|---|
| Bioaccumulative potential | Not established. |

| Nitric Acid, 70% w/w (7697-37-2) | |
|---|---|
| BCF fish 1 | <= 1 (BCF) |
| Log Pow | -2.3 (OECD 107: Partition Coefficient (n-octanol/water): Shake Flask Method) |
| Bioaccumulative potential | Bioaccumulation: not applicable. |

| Water (7732-18-5) | |
|---|---|
| Bioaccumulative potential | Not established. |

### 12.4. Mobility in soil

No additional information available

### 12.5. Other adverse effects

| | | |
|---|---|---|
| Effect on the global warming | : | No known effects from this product. |
| GWPmix comment | : | No known effects from this product. |
| Other information | : | Avoid release to the environment. |

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to comply with local, state and federal regulations.

Ecology - waste materials : Avoid release to the environment.

## SECTION 14: Transport information

### Department of Transportation (DOT)

In accordance with DOT

Transport document description : UN2031 Nitric acid (other than red fuming, with more than 20% and less than 65 percent nitric acid), 8, II

UN-No.(DOT) : UN2031

Proper Shipping Name (DOT) : Nitric acid
other than red fuming, with more than 20% and less than 65 percent nitric acid

Transport hazard class(es) (DOT) : 8 - Class 8 - Corrosive material 49 CFR 173.136

Packing group (DOT) : II - Medium Danger

Hazard labels (DOT) : 8 - Corrosive


DOT Packaging Non Bulk (49 CFR 173.xxx) : 158

DOT Packaging Bulk (49 CFR 173.xxx) : 242

DOT Special Provisions (49 CFR 172.102) : A6 - For combination packaging, if plastic inner packaging are used, they must be packed in tightly closed metal receptacles before packing in outer packaging.
B2 - MC 300, MC 301, MC 302, MC 303, MC 305, and MC 306 and DOT 406 cargo tanks are not authorized.
B47 - Each tank may have a reclosing pressure relief device having a start-to-discharge pressure setting of 310 kPa (45 psig).
B53 - Packaging must be made of either aluminum or steel.
IB2 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized.
IP15 - For UN2031 with more than 55% nitric acid, rigid plastic IBCs and composite IBCs with a rigid plastic inner receptacle are authorized for two years from the date of IBC manufacture.
T8 - 4 178.274(d)(2) Normal..... Prohibited
TP2 - a. The maximum degree of filling must not exceed the degree of filling determined by the following: (image) Where: tr is the maximum mean bulk temperature during transport, tf is the temperature in degrees celsius of the liquid during filling, and a is the mean coefficient of cubical expansion of the liquid between the mean temperature of the liquid during filling (tf) and the maximum mean bulk temperature during transportation (tr) both in degrees celsius. b. For liquids transported under ambient conditions may be calculated using the formula: (image) Where: d15 and d50 are the densities (in units of mass per unit volume) of the liquid at 15 C (59 F) and 50 C (122 F), respectively.

DOT Packaging Exceptions (49 CFR 173.xxx) : None

DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) : Forbidden

DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : 30 L

DOT Vessel Stowage Location : D - The material must be stowed ‘‘on deck only’’ on a cargo vessel and on a passenger vessel carrying a number of passengers limited to not more than the larger of 25 passengers or one passenger per each 3 m of overall vessel length, but the material is prohibited on passenger vessels in which the limiting number of passengers is exceeded.

DOT Vessel Stowage Other : 44 - Stow ‘‘away from’’ oxidizers,66 - Stow ‘‘separated from’’ flammable solids,74 - Stow ‘‘separated from’’ oxidizers,89 - Segregation same as for oxidizers,90 - Stow ‘‘separated from’’ radioactive materials

Other information : No supplementary information available.

## SECTION 15: Regulatory information

### 15.1. US Federal regulations

| **Nitric Acid, 50% v/v (1+1)** | |
|---|---|
| SARA Section 311/312 Hazard Classes | Immediate (acute) health hazard |

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

Chemical(s) subject to the reporting requirements of Section 313 or Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986 and 40 CFR Part 372.

| | | |
|---|---|---|
| Nitric Acid, 70% w/w | CAS No 7697-37-2 | 40% |

| **Nitric Acid, 70% w/w (7697-37-2)** | |
|---|---|
| RQ (Reportable quantity, section 304 of EPA's List of Lists) | 1000 lb |
| SARA Section 302 Threshold Planning Quantity (TPQ) | 1000 lb |
| SARA Section 311/312 Hazard Classes | Immediate (acute) health hazard |

### 15.2. International regulations

**CANADA**

| **Nitric Acid, 50% v/v (1+1)** | |
|---|---|
| WHMIS Classification | Class E - Corrosive Material |

| **Nitric Acid, 70% w/w (7697-37-2)** | |
|---|---|
| WHMIS Classification | Class E - Corrosive Material<br>Class C - Oxidizing Material |

| **Water (7732-18-5)** | |
|---|---|
| WHMIS Classification | Uncontrolled product according to WHMIS classification criteria |

**EU-Regulations**

No additional information available

**National regulations**

No additional information available

### 15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

## SECTION 16: Other information

Revision date : 02/20/2017

Other information : None.

Full text of H-phrases: see section 16:

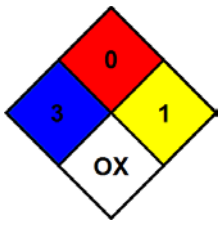
| | |
|---|---|
| H272 | May intensify fire; oxidizer |
| H290 | May be corrosive to metals |
| H314 | Causes severe skin burns and eye damage |
| H318 | Causes serious eye damage |

NFPA health hazard : 3 - Materials that, under emergency conditions, can cause serious or permanent injury.

NFPA fire hazard : 0 - Materials that will not burn under typical dire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand.

NFPA reactivity : 1 - Materials that in themselves are normally stable but can become unstable at elevated temperatures and pressures.

NFPA specific hazard : OX - Materials that posses oxidizing properties.



| | | |
|---|---|---|
| HMIS III Rating | | |
| Health | : | 3 Serious Hazard - Major injury likely unless prompt action is taken and medical treatment is given |
| Flammability | : | 0 Minimal Hazard - Materials that will not burn |
| Physical | : | 1 Slight Hazard - Materials that are normally stable but can become unstable (self-react) at high temperatures and pressures. Materials may react non-violently with water or undergo hazardous polymerization in the absence of inhibitors. |
| Personal protection | : | H<br>H - Splash goggles, Gloves, Synthetic apron, Vapor respirator |

SDS US LabChem