

SECTION 1: Identification

1.1. Identification

Product form : Mixtures
Product name : Strong Acid Solution, for Phosphorus
Product code : LC25370

1.2. Recommended use and restrictions on use

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

1.3. Supplier

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	May be corrosive to metals
Skin corrosion/irritation Category 1B	H314	Causes severe skin burns and eye damage
Hazardous to the aquatic environment - Acute Hazard Category 3	H402	Harmful to aquatic life

Full text of H statements : see section 16

2.2. GHS Label elements, including precautionary statements

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
H402 - Harmful to aquatic life

Precautionary statements (GHS-US) : P234 - Keep only in original container
P260 - Do not breathe mist, spray, vapors
P264 - Wash exposed skin thoroughly after handling
P273 - Avoid release to the environment
P280 - Wear eye protection, face protection, protective clothing, protective gloves
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 victim 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 ... on this label)
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

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P501 - Dispose of contents/container to comply with local, state and federal regulations

2.3. Other hazards which do not result in classification

Other hazards not contributing to the classification : None under normal conditions.

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	58.43	Not classified
Sulfuric Acid	(CAS-No.) 7664-93-9	41.17	Skin Corr. 1A, H314 Eye Dam. 1, H318
Nitric Acid, 70% w/w	(CAS-No.) 7697-37-2	0.4	Ox. Liq. 3, H272 Met. Corr. 1, H290 Skin Corr. 1A, H314 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 (acute and delayed)

- Symptoms/effects : Causes severe skin burns and eye damage.
- Symptoms/effects after inhalation : Coughing. Irritation of the respiratory tract.
- Symptoms/effects after skin contact : Caustic burns/corrosion of the skin.
- Symptoms/effects after eye contact : Corrosion of the eye tissue.
- Symptoms/effects after ingestion : Bleeding of the gastrointestinal tract.
- Symptoms/effects upon intravenous administration : Not available.
- Chronic symptoms : Respiratory difficulties. Inflammation/damage of the eye tissue. Irritation of the respiratory tract. Skin rash/inflammation.

4.3. Immediate medical attention and special treatment, if necessary

Obtain medical assistance.

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) 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. Specific hazards arising from the chemical

- Fire hazard : Reacts exothermically with water (moisture).
- Explosion hazard : Not applicable.
- Reactivity : Thermal decomposition generates : Corrosive vapors.

5.3. Special protective equipment and precautions for fire-fighters

- 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.

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

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Evacuate area.

6.1.1. For non-emergency personnel

Protective equipment : Face-shield. Gloves. Protective clothing. Protective goggles.
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.

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

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. Avoid contact during pregnancy/while nursing.
Hygiene measures : Wash exposed skin thoroughly after handling.

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. combustible materials. metals.
Incompatible materials : Sources of ignition. Direct sunlight.
Prohibitions on mixed storage : KEEP SUBSTANCE AWAY FROM: (strong) bases. combustible materials. metals. metal powders.
Storage area : Keep container in a well-ventilated place. Keep only in the original container.
Packaging materials : MATERIAL TO AVOID: aluminium, bronze, copper, iron, lead, monel steel, nickel, steel, tin, zinc.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Sulfuric Acid (7664-93-9)		
ACGIH	ACGIH TWA (mg/m³)	0.2 mg/m³ (Sulfuric acid; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value; Thoracic fraction)
OSHA	OSHA PEL (TWA) (mg/m³)	1 mg/m³
IDLH	US IDLH (mg/m³)	15 mg/m³
NIOSH	NIOSH REL (TWA) (mg/m³)	1 mg/m³
Water (7732-18-5)		
Not applicable		
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)

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Nitric Acid, 70% w/w (7697-37-2)		
ACGIH	ACGIH STEL (ppm)	4 ppm (Nitric acid; USA; Short time value; TLV - Adopted Value)
OSHA	OSHA PEL (TWA) (mg/m ³)	5 mg/m ³
OSHA	OSHA PEL (TWA) (ppm)	2 ppm
IDLH	US IDLH (ppm)	25 ppm
NIOSH	NIOSH REL (TWA) (mg/m ³)	5 mg/m ³
NIOSH	NIOSH REL (TWA) (ppm)	2 ppm
NIOSH	NIOSH REL (STEL) (mg/m ³)	10 mg/m ³
NIOSH	NIOSH REL (STEL) (ppm)	4 ppm

8.2. Appropriate engineering controls

Appropriate engineering controls : Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.

8.3. Individual protection measures/Personal protective equipment

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

Thermal hazard protection:

None necessary.

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	: Clear, colorless liquid.
Color	: Colorless
Odor	: odorless
Odor threshold	: No data available
pH	: ≤ 1
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)	: Not flammable Non flammable.
Vapor pressure	: No data available
Relative vapor density at 20 °C	: No data available
Relative density	: No data available
Specific gravity / density	: 1.31 g/ml

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Solubility	: Exothermically soluble in water.
Log Pow	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity, kinematic	: 2.1 cSt
Viscosity, dynamic	: No data available
Explosion limits	: No data available
Explosive properties	: Not applicable.
Oxidizing properties	: None.

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

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Reacts violently with (some) bases: release of heat.

10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures.

10.5. Incompatible materials

Strong bases. metals. combustible materials.

10.6. Hazardous decomposition products

Sulfur compounds. Nitrogen oxides.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Likely routes of exposure	: Skin and eye contact
Acute toxicity	: Not classified

Sulfuric Acid (7664-93-9)	
LD50 oral rat	2140 mg/kg body weight (Rat; Experimental value)
ATE US (oral)	2140 mg/kg body weight
Water (7732-18-5)	
LD50 oral rat	≥ 90000 mg/kg
ATE US (oral)	90000 mg/kg body weight

Skin corrosion/irritation	: Causes severe skin burns and eye damage. pH: ≤ 1
Serious eye damage/irritation	: Not classified pH: ≤ 1
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified
	Based on available data, the classification criteria are not met
Carcinogenicity	: Not classified

Sulfuric Acid (7664-93-9)	
Additional information	Strong inorganic acid mists containing sulfuric acid are carcinogenic to humans
IARC group	1 - Carcinogenic to humans
National Toxicology Program (NTP) Status	2 - Known Human Carcinogens

Reproductive toxicity	: Not classified Based on available data, the classification criteria are not met
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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/effects after inhalation	: Coughing. Irritation of the respiratory tract.
Symptoms/effects after skin contact	: Caustic burns/corrosion of the skin.
Symptoms/effects after eye contact	: Corrosion of the eye tissue.
Symptoms/effects after ingestion	: Bleeding of the gastrointestinal tract.
Symptoms/effects upon intravenous administration	: Not available.
Chronic symptoms	: Respiratory difficulties. Inflammation/damage of the eye tissue. Irritation of the respiratory tract. Skin rash/inflammation.

SECTION 12: Ecological information

12.1. Toxicity

Sulfuric Acid (7664-93-9)	
LC50 fish 1	42 mg/l (LC50; 96 h)
EC50 Daphnia 1	29 mg/l (EC50; 24 h)
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

Strong Acid Solution, for Phosphorus	
Persistence and degradability	Not established.
Sulfuric Acid (7664-93-9)	
Persistence and degradability	Biodegradability: not applicable.
Biochemical oxygen demand (BOD)	Not applicable
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
Water (7732-18-5)	
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

12.3. Bioaccumulative potential

Strong Acid Solution, for Phosphorus	
Bioaccumulative potential	Not established.
Sulfuric Acid (7664-93-9)	
Log Pow	-2.2 (Estimated value)
Bioaccumulative potential	Bioaccumulation: not applicable.
Water (7732-18-5)	
Bioaccumulative potential	Not established.

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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.

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. Disposal 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	: UN3264 Corrosive liquid, acidic, inorganic, n.o.s. (Sulfuric acid, nitric acid), 8, II
UN-No.(DOT)	: UN3264
Proper Shipping Name (DOT)	: Corrosive liquid, acidic, inorganic, n.o.s.
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)	: 202
DOT Packaging Bulk (49 CFR 173.xxx)	: 242
DOT Symbols	: G - Identifies PSN requiring a technical name
DOT Special Provisions (49 CFR 172.102)	: B2 - MC 300, MC 301, MC 302, MC 303, MC 305, and MC 306 and DOT 406 cargo tanks are not authorized. 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. T11 - 6 178.274(d)(2) Normal..... 178.275(d)(3) 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. TP27 - A portable tank having a minimum test pressure of 4 bar (400 kPa) may be used provided the calculated test pressure is 4 bar or less based on the MAWP of the hazardous material, as defined in 178.275 of this subchapter, where the test pressure is 1.5 times the MAWP.
DOT Packaging Exceptions (49 CFR 173.xxx)	: 154
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27)	: 1 L

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

DOT Vessel Stowage Location : B - (i) The material may be stowed "on deck" or "under deck" 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; and (ii) "On deck only" on passenger vessels in which the number of passengers specified in paragraph (k)(2)(i) of this section is exceeded.

DOT Vessel Stowage Other : 40 - Stow "clear of living quarters"

Emergency Response Guide (ERG) Number : 154

Other information : No supplementary information available.

Transport by sea

Transport document description (IMDG) : UN 3264 CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Sulfuric acid, nitric acid), 8, II

UN-No. (IMDG) : 3264

Proper Shipping Name (IMDG) : CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.

Class (IMDG) : 8 - Corrosive substances

Packing group (IMDG) : II - substances presenting medium danger

Limited quantities (IMDG) : 1 L

Air transport

Transport document description (IATA) : UN 3264 Corrosive liquid, acidic, inorganic, n.o.s. (Sulfuric acid, nitric acid), 8, II

UN-No. (IATA) : 3264

Proper Shipping Name (IATA) : Corrosive liquid, acidic, inorganic, n.o.s.

Class (IATA) : 8 - Corrosives

Packing group (IATA) : II - Medium Danger

SECTION 15: Regulatory information

15.1. US Federal regulations

Strong Acid Solution, for Phosphorus

Listed on the United States TSCA (Toxic Substances Control Act) inventory

RQ (Reportable quantity, section 304 of EPA's List of Lists)	1000 lb
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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.

Sulfuric Acid, ACS	CAS-No. 7664-93-9	41.17%
Nitric Acid, 70% w/w	CAS-No. 7697-37-2	0.4%

Sulfuric Acid (7664-93-9)

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

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

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15.2. International regulations

CANADA

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Listed on the Canadian DSL (Domestic Substances List)

EU-Regulations

No additional information available

National regulations

Strong Acid Solution, for Phosphorus

Listed on the Canadian IDL (Ingredient Disclosure List)

Sulfuric Acid (7664-93-9)

Listed on IARC (International Agency for Research on Cancer)

Listed as carcinogen on NTP (National Toxicology Program)

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 : 01/04/2018

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
H402	Harmful to aquatic life

NFPA health hazard

: 4 - Materials that, under emergency conditions, can be lethal.

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

: W - Materials that react violently or explosively with water.

Hazard Rating

Health

: 4 Severe Hazard - Life-threatening, major or permanent damage may result from single or repeated overexposures

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

H - Splash goggles, Gloves, Synthetic apron, Vapor respirator



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