

1. Identification of the substance/preparation and of the company/undertaking

Product Name REVIVE

UN/ID No. See section 14

Synonyms None

Recommended use of the chemical and restrictions on use

Recommended Use Heavy Duty Liquid Lime Scale Remover.

Uses advised against No information available

Supplier Address

Anderson Chemical Company, 325 South Davis Avenue, Litchfield, MN 55355 (320-693-2477)

Emergency telephone number

Chemtrec 1-800-424-9300

2. Hazards identification

Classification

OSHA Regulatory Status

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute Toxicity-Inhalation Category 3

Skin Corrosion/Irritation Category 1 Sub-category B

Serious Eye Damage/Irritation Category 1

Corrosive to Metals Category 1

Label Elements

Signal word: **Danger**

Hazard Statements

Toxic if inhaled.

Causes severe skin burns and eye damage.

May be corrosive to metals.

Precautionary Statements - Prevention

Do not breathe dust/fume/gas/mist/vapors/spray. Use only in well-ventilated areas.

Wash face, hands and any exposed skin thoroughly after handling.

Wear protective gloves/protective clothing/eye protection/face protection.

Keep only in original container.

Precautionary Statements - Response

Immediately call a POISON CENTER or doctor/physician. Specific treatment (see Section 4 on the SDS).

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse.

IF INHALED: Remove victim to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/physician.

IF SWALLOWED: Rinse mouth. DO NOT induce vomiting.

Absorb spillage to prevent material damage.

Precautionary Statements - Storage

Store in a well-ventilated place. Keep container tightly closed.

Store locked up. Store in a corrosive resistant container.

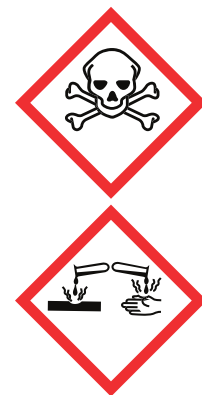
Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant.

Hazards not otherwise classified (HNOC)

Other Information

Harmful to aquatic life with long lasting effects.



3. Composition/information on ingredients

Chemical Name	CAS Number	% by Weight
Phosphoric Acid	7664-38-2	27.5
Nitric Acid	7697-37-2	4

*The exact percentage (concentration) of composition has been withheld as a trade secret.

4. First aid measures

Eye contact

Flush immediately with water for 15 minutes. Lift upper and lower eyelids for complete rinsing. Get immediate medical attention.

Skin Contact

Flush with water for 15 minutes. Get medical attention. Remove contaminated clothing and wash before reuse.

Inhalation

Remove victim to fresh air. If breathing difficulty occurs or persists, get medical attention.

Ingestion

Rinse mouth with water. Give water to dilute. Do not induce vomiting. Get immediate medical attention. Never give anything by mouth to a semi-comatose, comatose, convulsing or unconscious person

Self-protection of the first aider

Most important symptoms and effects, both acute and delayed

Symptoms

Corrosive. Causes tissue destruction, permanent damage to the cornea, blindness. Causes irritation (possibly severe), burns to the skin. Mists may cause lung irritation, shortness of breath, fluid in lungs. Ingestion causes nausea, vomiting, diarrhea, corrosion, burns to mouth and esophagus, abdominal pain, chest pain, shortness of breath, seizures, death.

Indication of any immediate medical attention and special treatment needed

Note to physicians

Treat symptomatically.

5. Fire-fighting measures

Suitable extinguishing media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media

None known.

Specific hazards arising from the chemical

If the stock solution container breaks, the solution should be handled with care as it is corrosive.

Hazardous combustion products

At flame temperatures, toxic phosphoric oxide fumes may be emitted. Nitrogen oxides (NOx).

Explosion Data

Sensitivity to mechanical impact None

Sensitivity to static discharge None

Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Use water spray to cool fire exposed containers. Move containers from fire area if you can do it without risk.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions

Evacuate nonessential personnel. Ventilate area. Wear appropriate personal protection equipment.

Environmental precautions

See Section 12 for additional ecological information.

Methods for containment

Completely contain spilled material with dikes or sand bags, etc.

Methods for cleaning up

Recover as much material as possible into containers for disposal or reuse. Remaining material may be diluted with water and neutralized. Flush spill area with water. Neutralization products, both solid and liquid, must be recovered for disposal.

7. Handling and storage

Precautions for safe handling

Advice on safe handling

Do not get in eyes, on skin, or clothing. Do not breathe vapors or mists. Do not ingest. Wash thoroughly after handling. Wear protective clothing/equipment. Use with adequate ventilation.

Conditions for safe storage, including any incompatibilities

Storage Conditions

Keep containers tightly closed and properly labeled. This product reacts violently with bases liberating heat and causes spattering. Store in a cool, dry, well-ventilated area. Wash hands before eating, drinking, using tobacco, applying make-up or using the toilet. Do not store, use, and/or consume foods, beverages, tobacco in areas where this product is stored.

Incompatible materials

Fluorine, strong oxidizing and reducing agents, bases, metals, sulfur tioxide, and phosphorus petoxide. Contact with metals may evolve flammable hydrogen gas.

8. Exposure controls/personal protection

Control parameters

Exposure Guideline

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Phosphoric Acid 7664-38-2	STEL: 3 mg/m ³ TWA: 1 mg/m ³	TWA: 1 mg/m ³ (vacated) TWA: 1 mg/m ³ (vacated) STEL: 3 mg/m ³	IDLH: 1000 mg/m ³ TWA: 1 mg/m ³ STEL: 3 mg/m ³
Nitric Acid 7697-37-2	STEL: 4 ppm TWA: 2 ppm	TWA: 2 ppm TWA: 5 mg/m ³ (vacated) TWA: 2 ppm (vacated) TWA: 5 mg/m ³ (vacated) STEL: 4 ppm (vacated) STEL: 10 mg/m ³	IDLH: 25 ppm TWA: 2 ppm TWA: 5 mg/m ³ STEL: 4 ppm STEL: 10 mg/m ³

Appropriate engineering controls

Showers
Eyewash stations
Ventilation systems

Individual protection measures, such as personal protective equipment

Eye/face protection

Wear safety glasses with side shields (or goggles).

Skin and body protection

Natural rubber, neoprene or nitrile gloves should be worn. If contact is anticipated, wear protective clothing appropriate to use conditions.

Respiratory protection

If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

General Hygiene Considerations

Wash contaminated clothing before reuse.

9. Physical and chemical properties

Information on basic physical and chemical properties

Physical state	Liquid
Color	clear colorless
Odor	Orderless
Odor threshold	No information available
pH	1.9, 1% solution
Melting point/freezing point	No information available
Boiling point / boiling range	No information available
Flash point	No information available
Evaporation rate	No information available
Flammability (solid, gas)	No information available
Flammability upper limit in air	No information available
Flammability lower limit in air	No information available

Vapor pressure	No information available
Vapor density	No information available
Specific Gravity	1.188
Water solubility	Soluble in water
Partition coefficient	No information available
Autoignition temperature	No information available
Decomposition temperature	No information available
Kinematic viscosity	No information available
Dynamic viscosity	No information available

10. Stability and reactivity

Reactivity

No information available

Chemical stability

Stable under recommended storage conditions.

Possibility of Hazardous Reactions

None under normal processing.

Conditions to avoid

None known

Incompatible materials

Fluorine, strong oxidizing and reducing agents, bases, metals, sulfur tioxide, and phosphorus petoxide. Contact with metals may evolve flammable hydrogen gas.

Hazardous Decomposition Products

At flame temperatures, toxic phosphoric oxide fumes may be emitted. Nitrogen oxides (NOx).

11. Toxicological information

Information on likely routes of exposure

Product Information	No information available
Inhalation	Inhalation of vapors in high concentration may cause irritation of respiratory system.
Eye contact	Risk of serious damage to eyes.
Skin Contact	Contact causes severe skin irritation and possible burns.
Ingestion	Toxic if swallowed.

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Phosphoric Acid 7664-38-2	= 1530 mg/kg (Rat)	= 2730 mg/kg (Rabbit)	> 850 mg/m 3 (Rat) 1 h
Nitric Acid 7697-37-2	-	-	= 67 ppm (Rat) 4 h

Information on toxicological effects

Symptoms No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Sensitization	No information available
Germ cell mutagenicity	No information available
Carcinogenicity	No information available

Chemical Name	ACGIH	IARC	NTP	OSHA
Nitric Acid 7697-37-2	-	Group 2A	-	X

Reproductive toxicity	No information available
STOT - single exposure	No information available
STOT - repeated exposure	No information available
Aspiration hazard	No information available

Numerical measures of toxicity - Product Information

The following values are calculated based on chapter 3.1 of the GHS document .

ATEmix (oral)	5564 mg/kg
ATEmix (dermal)	9927 mg/kg
ATEmix (inhalation-dust/mist)	0.8 mg/l
ATEmix (inhalation-vapor)	1675 mg/l

12. Ecological information

Ecotoxicity

Harmful to aquatic life with long lasting effects

Chemical Name	Algae/aquatic plants	Fish	Crustacea
Phosphoric Acid 7664-38-2	-	3 - 3.5: 96 h Gambusia affinis mg/L LC50	4.6: 12 h Daphnia magna mg/L EC50
Nitric Acid 7697-37-2	-	72: 96 h Gambusia affinis mg/L LC50	-

Persistence and degradability No information available

Bioaccumulation No information available

Chemical Name	Partition coefficient
Nitric Acid 7697-37-2	-2.3

Other adverse effects No information available

13. Disposal considerations

Waste treatment methods

Disposal of wastes Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated packaging Do not reuse container.

Chemical Name	California Hazardous Waste Status
Phosphoric Acid 7664-38-2	Corrosive
Nitric Acid 7697-37-2	Toxic Corrosive Ignitable

14. Transport information

DOT LTD QTY - if packaged in <1.3 gallon containers (Non Hazardous)

UN/ID No. See section 14

Proper shipping name Corrosive liquid, acidic, inorganic, n.o.s.

Hazardous ingredients (phosphoric acid/nitric acid)

Hazard class 8

Packing group III

15. Regulatory information

US Federal Regulations

SARA 313

This product contains the following EPCRA section 313 chemical(s) subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know-Act of 1986 (40 CFR 372):

Chemical Name	% by Weight
Nitric Acid 7697-37-2	4

SARA 311/312 Hazards

Acute Toxicity-Inhalation
Skin Corrosion/Irritation
Serious Eye Damage/Irritation
Corrosive to Metals

CWA (Clean Water Act)

This product does contain substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

Chemical Name	Reportable Quantities	Toxic Pollutants	Priority Pollutants	Hazardous Substances
Phosphoric Acid 7664-38-2	5000 lb	-	-	X
Nitric Acid 7697-37-2	1000 lb	-	-	X

CERCLA

This material, as supplied, contains substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

Chemical Name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
Phosphoric Acid 7664-38-2	5000 lb	-	RQ 5000 lb final RQ RQ 2270 kg final RQ
Nitric Acid 7697-37-2	1000 lb	1000 lb	RQ 1000 lb final RQ RQ 454 kg final RQ

US State Regulations**California Proposition 65**

This product does not contain any Proposition 65 chemicals.

U.S. EPA Label Information

EPA Pesticide Registration Number Not Applicable

16. OTHER INFORMATION

NFPA Health hazards 3 Flammability 0 Instability 0 Physical and Chemical Properties -
HMIS Health hazards 3 Flammability 0 Physical hazards 0 Personal protection X
 Prepared By L. Tipka
 Issue Date 2024-03-25
 Revision Date 2024-03-25
 Revision Note New product name

Disclaimer

The information provided in this Material Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet