SAFETY DATA SHEET

Revision Date 18-Jan-2023 **Version** 1

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier

Product Name **KC-431**

Other means of identification

Product Code 20431

Recommended use of the chemical and restrictions on use

Recommended Use Low Foaming Acid Detergent

Uses advised against Follow the directions for use on the label when applying this product

Details of the supplier of the safety data sheet

Manufacturer Address

Safe Foods Chemical Innovations
1501 E. 8th Street
North Little Rock, AR 72114

Emergency telephone number

Company Phone Number 501-758-8500

Emergency Telephone 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 (Vapors)	Category 4
Acute toxicity - Inhalation (Dusts/Mists)	Category 2
Skin corrosion/irritation	Category 1
Serious eye damage/eye irritation	Category 1
Carcinogenicity	Category 1A
Oxidizing liquids	Category 3

Label elements

Emergency Overview

Danger

Hazard statements

Fatal if inhaled
Causes severe skin burns and eye damage
May cause cancer upon inhalation of strong inorganic acid mists
May intensify fire; oxidizer

Appearance Aqueous solution **Color** Clear, Colorless **Odor** Sour

Precautionary Statements - Prevention

Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Use personal protective equipment as required
Do not breathe dusts or mists
Use only outdoors or in a well-ventilated area
Wear respiratory protection
Wash face, hands and any exposed skin thoroughly after handling
Keep away from heat/sparks/open flames/hot surfaces. No smoking
Keep/Store away from clothing/combustible materials
Take any precaution to avoid mixing with combustibles.

Precautionary Statements - Response

Specific treatment is urgent (see Section 4 on SDS). Immediately call a POISON CENTER or doctor

IF IN EYES: 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
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower. Wash contaminated clothing before reuse
IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting
In case of fire: Use CO_2, dry chemical, or foam for extinction

Precautionary Statements - Storage

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

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)

Not applicable

Other Information

• Harmful to aquatic life with long lasting effects

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No.	Weight-%
Water	7732-18-5	65-75
Nitric acid	7697-37-2	20-25
Phosphoric acid	7664-38-2	5-10
Trade Secret 1	Proprietary	< 0.8
Isopropyl alcohol	67-63-0	< 0.1
Trade Secret 2	Proprietary	< 0.1

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

4. FIRST AID MEASURES

First aid measures

Eye contact Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after first 5 minutes, then continue rinsing eye. Seek immediate medical attention/advice.

Skin contact Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. For severe burns, immediate medical attention is required. Wash contaminated clothing and shoes before reuse.

Inhalation Remove to fresh air. Administer oxygen if breathing is difficult. Call a physician immediately.

Ingestion Do NOT induce vomiting. Drink plenty of water. Never give anything by mouth to an unconscious person. Call a physician immediately.

Most important symptoms and effects, both acute and delayed

Symptoms See Section 11 for symptom information.

Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media

Dry chemical. Water spray (fog). Carbon dioxide (CO_2). Foam.

Unsuitable extinguishing media Do not use straight streams.

Specific hazards arising from the chemical

NFPA Class 1 oxidizer. Exothermic reaction will occur upon dilution with water. Pressure burst may occur due to decomposition in confined spaces.

Hazardous combustion products Carbon monoxide. Carbon dioxide (CO_2). Phosphorus oxides. Nitrogen oxides (NO_x).

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. Cool containers with flooding quantities of water until well after fire is out. Non-combustible, substance itself does not burn but may decompose upon heating to produce corrosive and/or toxic fumes.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions Use personal protection recommended in Section 8. Ensure adequate ventilation, especially in confined areas.

For emergency responders Isolate area. Keep unnecessary personnel away.

Environmental precautions

Environmental precautions Prevent entry into waterways, sewers, basements or confined areas. See section 12 for additional ecological information.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so. Contain and collect spillage with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see Section 13).

Methods for cleaning up Ventilate affected area. Collect spillage. Soak up with inert absorbent material. Sweep up and shovel into suitable containers for disposal. Following product recovery, flush area with water.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling Use personal protection recommended in Section 8. Avoid contact with skin, eyes or clothing. Use only in well-ventilated areas. Avoid breathing vapors or mists. Wash thoroughly after handling. Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place. Containers must be vented. Keep/store only in original container. Keep from freezing. NFPA Class 1 oxidizer. Oxidizers need to be separated by at least 25 feet from flammable and combustible liquid containers. Separation shall be maintained by dikes, drains, or floor slopes to prevent flammable liquid leakage from encroaching on the separation (NFPA 400 15.2.12.13.1). For Class 1 oxidizers where stored in quantities in excess of 4,000 lbs.; at least one side of each pile of oxidizers shall be on an aisle (NFPA 400, 15.3.2.2.2.1). NFPA Class 1 oxidizers must be separated by al least 8 feet from incompatible materials and combustible commodities (NFPA 400 Table 15.3.2.2.2.2(A)(b)).

Incompatible materials Chlorinated compounds. Alkali. Ammonia. Turpentine. Cyanides. Sulfides. Carbides. Alcohols. Hydrogen Sulfide. Certain soft metals. Organic material. Combustible material. Reducing agent.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines

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

Appropriate engineering controls

Engineering Controls Showers, eyewash stations, ventilation system.

Individual protection measures, such as personal protective equipment

Eye/face protection Splash proof chemical goggles and face shield.

Skin and body protection Wear protective Neoprene™ gloves or rubber gloves. Wear suitable protective clothing. Rubber boots recommended.

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 face, hands and any exposed skin thoroughly after handling. Wash contaminated clothing and shoes before reuse. Do not eat, drink or smoke when using this product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state Liquid
Appearance Aqueous solution
Color Clear, Colorless
Odor Sour
Odor threshold No information available

Property	Values	Remarks • Method
pH	1	±1 @ 21°C
Melting point / freezing point	No information available	
Boiling point / boiling range	No information available	
Flash point	Not flammable	
Evaporation rate	No information available	
Flammability (solid, gas)	No information available	
Flammability Limit in Air		

Upper flammability limit:	No information available
Lower flammability limit:	No information available
Vapor pressure	No information available
Vapor density	No information available
Specific Gravity	1.17 g/cc
Water solubility	Completely soluble
Solubility in other solvents	No information available
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
Explosive properties	No information available
Oxidizing properties	No information available
VOC Content (%)	0.09% (0.0092 lbs./gal)

10. STABILITY AND REACTIVITY

Reactivity

May intensify fire; oxidizer

Chemical stability

This product will maintain its physical character when stored closed at moderate temperatures, between 28°F and 105°F.

Possibility of Hazardous Reactions

Pressure burst may occur due to decomposition in confined spaces.

Conditions to avoid

Moisture. Add product to water, never add water to this product. Exothermic reaction will occur upon dilution with water.

Incompatible materials

Chlorinated compounds. Alkali. Ammonia. Turpentine. Cyanides. Sulfides. Carbides. Alcohols. Hydrogen Sulfide. Certain soft metals. Organic material. Combustible material. Reducing agent.

Hazardous Decomposition Products

Carbon monoxide. Carbon dioxide (CO2). Phosphorus oxides. Nitrogen oxides (NOx).

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Inhalation	Inhalation of vapors in high concentration may cause irritation of respiratory system. Vapors may be irritating to eyes, nose, throat, and lungs.
Eye contact	Risk of serious damage to eyes. Corrosive to the eyes and may cause severe damage including blindness.
Skin Contact	Corrosive. Contact causes severe skin irritation and possible burns.
Ingestion	Harmful if swallowed. Can burn mouth, throat, and stomach. Ingestion causes burns of the upper digestive and respiratory tracts.

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Nitric acid 7697-37-2	-	-	= 130 mg/m^3 (Rat) 4 h = 2500 ppm (Rat) 1 h
Phosphoric acid 7664-38-2	= 1530 mg/kg (Rat)	= 2740 mg/kg (Rabbit)	> 850 mg/m^3 (Rat) 1 h
Isopropyl alcohol 67-63-0	= 1870 mg/kg (Rat)	= 4059 mg/kg (Rabbit)	= 72600 mg/m^3 (Rat) 4 h
Trade Secret 2	> 10000 mg/kg (Rat)	> 4 g/kg (Rabbit)	-

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 The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical Name	ACGIH	IARC	NTP	OSHA
Nitric acid 7697-37-2	-	Group 2A Group 1	-	X

IARC (International Agency for Research on Cancer)

Group 2A - Probably Carcinogenic to Humans (Nitrate or nitrite (ingested) has been shown to be carcinogenic only under conditions that result in endogenous nitrosation)

Group 1 - Carcinogenic to Humans (May cause cancer upon inhalation of strong inorganic acid mists)

OSHA (Occupational Safety and Health Administration of the US Department of Labor)

X - Present

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

Unknown Acute Toxicity ~ 30 % of the mixture consists of ingredient(s) of unknown toxicity

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

Oral LD50 15,890.00 mg/kg

Dermal LD50 28,456.00 mg/kg

Mist 0.49 mg/l

Vapor 14.57 mg/l

12. ECOLOGICAL INFORMATION

Ecotoxicity

Harmful to aquatic life with long lasting effects

Chemical Name	Algae/aquatic plants	Fish	Crustacea
Nitric acid 7697-37-2	-	72: 96 h Gambusia affinis mg/L LC50	-
Phosphoric acid 7664-38-2	-	3 - 3.5: 96 h Gambusia affinis mg/L LC50	4.6: 12 h Daphnia magna mg/L EC50
Isopropyl alcohol 67-63-0	1000: 96 h Desmodesmus subspicatus mg/L EC50 1000: 72 h Desmodesmus subspicatus mg/L EC50	9640: 96 h Pimephales promelas mg/L LC50 flow-through 11130: 96 h Pimephales promelas mg/L LC50 static 1400000: 96 h Lepomis macrochirus µg/L LC50	13299: 48 h Daphnia magna mg/L EC50
Trade Secret 2	-	13500 - 14500: 96 h Pimephales promelas mg/L LC50 6800: 96 h Pimephales promelas mg/L LC50 static 3040 - 4380: 96 h Lepomis macrochirus mg/L LC50 static 13500: 96 h Lepomis macrochirus mg/L LC50	630: 96 h Daphnia magna mg/L EC50 2564: 48 h Daphnia magna mg/L EC50

Persistence and degradability

No information available.

Bioaccumulation

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

Mobility

Soluble in water.

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 Dispose of in accordance with federal, state and local regulations.

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

14. TRANSPORT INFORMATION

DOT

UN/ID No. 3264

Proper shipping name Corrosive liquid, acidic, inorganic, n.o.s. (contains phosphoric and nitric acids)

Hazard Class 8

Packing Group II

Emergency Response Guide Number 154

15. REGULATORY INFORMATION

International Inventories

TSCA Complies

DSL/NDSL Complies

EINECS/ELINCS Complies

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical Name	SARA 313 - Threshold Values %
Nitric acid - 7697-37-2	1.0

SARA 311/312 Hazard Categories

Acute health hazard	Yes
Chronic Health Hazard	Yes
Fire hazard	Yes
Sudden release of pressure hazard	No
Reactive Hazard	No

CWA (Clean Water Act)

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

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

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

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

US State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Nitric acid 7697-37-2	X	X	X
Phosphoric acid 7664-38-2	X	X	X

U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

16. OTHER INFORMATION

NFPA **Health hazards** 3 **Flammability** 0 **Instability** 0

HMIS **Health hazards** 3* **Flammability** 0 **Physical hazards** 0

Physical and Chemical Properties
OX - Oxidizer Corrosive, Acid

Personal protection
I (Safety Goggles, Gloves, Dust & Vapor Respirator)

Chronic Hazard Star Legend ** = Chronic Health Hazard*

Prepared By Technical Department
Issue Date 08-Feb-2019
Revision Date 18-Jan-2023
Version 1
Revision Note Company name update.

Disclaimer

The information provided in this 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 health hazards given on this SDS apply to this product in its concentrated form (as supplied) and may differ significantly at use dilution. The signs and symptoms of exposure apply only to negligence in handling or misuse of the concentrated product and not to the routine exposure of the diluted product under conditions of ordinary use.

End of Safety Data Sheet