SAFETY DATA SHEET

According to Federal Regulation 29 CFR 1910.1200

SECTION 1: Identification of the substance/mixture and of the company/undertaking

Product identifier

Product name:	TRAMFLOC® 563
Type of product:	Sodium aluminate 38% solution
CAS No.:	1302-42-7

Relevant identified uses of the substance or mixture and uses advised against

Identified uses: This material is used as a water treatment coagulant.

Uses advised against: none

Details of the supplier of the safety data sheet

Company:	Tramfloc, Inc. 6046 FM 2920 Rd. #615 Spring, TX 77379-2542
Telephone:	888-929-8973
Telefax:	480-383-6895
E-mail address:	water@tramfloc.com

Emergency telephone number:

24-hour emergency number: 800-424-9300 CHEMTREC (CCN 20412), Outside US 703-527-3887

SECTION 2. Hazards identification

Classification

OSHA Regulatory Status

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

Skin corrosion/irritation	Category 1 Sub-category A
Serious eye damage/eye irritation	Category 1

GHS Label elements, including precautionary statements

Emergency overview

Physical state	liquid
Color	amber
Appearance	clear to slightly hazy

Odor	no appreciable odor

DANGER

Hazard statements

Causes severe skin burns and eye damage

Precautionary Statements – Prevention

Do not breathe dust/fume/gas/mist/vapors/spray

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

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

Precautionary Statements - Response

Immediately call a POISON CENTER or doctor/physician

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 at rest in a position comfortable for breathing

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting

Precautionary Statements - Storage

Store locked up

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

Other information

• Not applicable

Unknown acute toxicity

• 32% of the mixture consists of ingredient(s) of unknown toxicity

SECTION 3. Composition/information on ingredients

Component	CAS-No	weight-%	TRADE SECRET
Sodium aluminum oxide	1302-42-7	32%	--

Sodium Hydroxide	1310-73-2	8%	--
Water	7732-18-5	60%	--

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

Alternate CAS Number(s)

An alternate CAS number for 1302-42-7 (Sodium aluminum oxide) is 11138-49-1 (Sodium Aluminate).

SECTION 4. First aid measures

First Aid Measures

Eye contact

Remove contact lenses, if worn. Immediately flush with plenty of water for at least 15 minutes, holding eyelids apart to ensure flushing of the entire surface. Washing within one minute is essential to achieve maximum effectiveness. Seek medical advice immediately.

Skin contact

Immediately flush skin with plenty of soap and water for at least 15 minutes. Remove contaminated clothing and shoes. Wash contaminated clothing before reuse. If skin irritation occurs: Get medical advice/attention.

Ingestion

Do not induce vomiting. Give large amounts of water followed by milk if available. If vomiting should occur spontaneously, keep airway clear. Seek medical advice immediately. Never give anything by mouth to an unconscious person.

Inhalation

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

Most important symptoms and effects, both acute and delayed

Acute effects

Inhalation of corrosive substances may cause irritation of the respiratory tract with coughing, choking, pain and possible burns of the mucus membrane. In some cases pulmonary edema may develop, either immediately or more often within a period of 5-72 hours. The symptoms may include tightness in the chest, frothy sputum cyanosis, and dizziness. Physical findings may include low blood pressure and high pulse. Severe cases may be fatal. Eye and skin contact may cause severe irritation, pain and burns. Ingestion may cause immediate pain and severe burns of the mucous membrane. There may be discoloration of the tissues. Swallowing and speech may be difficult at first and then almost impossible. The effects on the esophagus and gastrointestinal tract may range from irritation to severe corrosion. Edema of the epiglottis and shock may occur.

Chronic effects

Depending on the concentration, repeated ingestion may cause effects as with acute exposure. Effects

depend on concentration and duration of exposure. Repeated or prolonged skin contact may result in dermatitis or effects similar to acute exposure. Repeated exposure by inhalation may cause inflammatory ulcerative changes to the mouth and possibly bronchial and gastrointestinal disturbances. Repeated or prolonged eye contact may result in conjunctivitis or effects similar to acute exposure. .

Aggravated Medical Conditions

Existing skin, eye and lung conditions. Persons with kidney disorders have an increased risk from exposure based on general information found on aluminum salts.

Indication of any immediate medical attention and special treatment needed

Note to physicians

Aluminum soluble salts may cause gastroenteritis if ingested. Treatment includes the use of demulcents. Note: Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

SECTION 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media

Water fog, carbon dioxide, foam, dry chemical.

Extinguishing media which must not be used for safety reasons

No information available

Special hazards arising from the substance or mixture

Special Hazard

May produce hazardous fumes or hazardous decomposition products.

Advice for firefighters

Firefighting measures

Product is a water solution and nonflammable. In a fire, this product may build up pressure and rupture a sealed container; cool exposed containers with water spray. Use self-contained breathing apparatus in confined areas; avoid breathing mist or spray.

Special protective equipment for firefighters

Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

Explosion data

Sensitivity to Mechanical Impact

None.

Sensitivity to Static Discharge

None.

SECTION 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions

Wear suitable protective clothing and gloves.

Environmental precautions

Environmental precautions

Do not allow liquid to enter streams or waterways.

Methods and material for containment and cleaning up

Methods for containment

Prevent further leakage or spillage if safe to do so. Build dikes as necessary to contain flow of large spills.

Methods for cleaning up

Clear spills immediately. For small spills, neutralize with weak acidic material such as vinegar, an inert material to absorb, or wash product to a chemical sewer. Place contaminated materials into containers and store in a safe place to await proper disposal.

SECTION 7. Handling and storage

Precautions for safe handling

- Advice on safe handling
- Keep container closed when not in use
- Keep away from open flames, hot surfaces and sources of ignition.
- Avoid contact with eyes, skin and clothing
- Wear chemical splash goggles, gloves, and protective clothing when handling.
- Wash thoroughly after handling
- Do not breathe mist or spray.
- Use with adequate ventilation and employ respiratory protection where mist or spray may be generated.
- Do not take internally
- FOR INDUSTRIAL USE ONLY.

Conditions for safe storage, including any incompatibilities

Technical measures and storage conditions

Keep container tightly closed when not in use.

Store in a cool, dry place away from direct heat.

Incompatible products

Strong acids.

SECTION 8. Exposure controls/personal protection

Control parameters

Exposure Guidelines

Component	weight-%	ACGIH TLV	OSHA PEL	NIOSH IDLH
Sodium Hydroxide 1310-73-2	8%	2 mg/m³ Ceiling	2 mg/m³ TWA	10 mg/m³ IDLH

Appropriate engineering controls

Engineering controls

Local exhaust ventilation as necessary to maintain exposures to within applicable limits. Please refer to the ACGIH document, "Industrial Ventilation, A Manual of Recommended Practices", most recent edition, for details. If there are no applicable or established exposure limit requirements or guidelines, general ventilation should be sufficient.

Individual protection measures, such as personal protective equipment

Eye/face Protection

Wear chemical splash goggles and face shield (when eye and face contact is possible due to splashing or spraying of material).

Hand Protection

Appropriate chemical resistant gloves should be worn.

Skin and body protection

Standard work clothing and work shoes.

Respiratory protection

If exposures exceed the PEL or TLV, use NIOSH/MSHA approved respirator in accordance with OSHA Respiratory Protection Requirements under 29 CFR 1910.134. If there are no applicable or established exposure limit requirements or guidelines, general ventilation should be sufficient.

Other personal protection data

Eyewash fountains and safety showers must be easily accessible.

Hygiene measures

Take off contaminated clothing and wash before reuse.

SECTION 9. Physical and chemical properties

Information on basic physical and chemical properties

Physical state	liquid
Color	amber
Appearance	clear to slightly hazy
Odor	no appreciable odor
Odor threshold	No information available

Property	Values	Remarks / Method
pH	~ 14	No information available
Melting / freezing point	< -32.2 °C / < -26 °F	No information available
Boiling point / boiling range	116 °C / 241 °F	No information available
Flash point	Not applicable	No information available
Evaporation rate	No information available	No information available
Flammability (solid, gas)		
Upper flammability limit	Not applicable	No information available
Lower flammability limit	Not applicable	No information available
Vapor pressure	No information available	No information available
Vapor density	No information available	No information available
Specific gravity	1.4 - 1.6	No information available
Solubility (water)	Complete	No information available
Solubility in other solvents	No information available	No information available
Partition coefficient: n-octanol/water	No information available	No information available
Autoignition temperature	Not applicable	No information available
Decomposition temperature	No information available	No information available
Kinematic viscosity	No information available	No information available
Dynamic viscosity	200 - 400 cps @ 25 °C	No information available

Other information

Density	11.6 - 13.3 lb/gal - @ 25 °C
Bulk Density	No information available
Explosive properties	No information available.

Oxidizing properties	No information available
Softening point	No information available
Molecular weight	No information available
Volatile organic compounds (VOCs) content	No information available
Percent Volatile, wt.%	No information available

SECTION 10. Stability and reactivity

Reactivity

No data available.

Chemical stability

Stable under normal conditions of handling, use and transportation.

Possibility of hazardous reactions

None under normal processing.

Hazardous polymerization

Not anticipated under normal or recommended handling and storage conditions.

Conditions to avoid

None.

Incompatible materials

Materials to avoid

Strong acids.

Hazardous decomposition products

Thermal decomposition may release toxic and/or hazardous gases.

SECTION 11. Toxicological information

Information on likely routes of exposure

Eye contact

Direct contact may cause severe irritation, pain and burns, possibly severe. May result in permanent blindness. The degree of injury depends on the concentration and duration of contact. The full extent of the injury may not be immediately apparent.

Skin contact

Corrosive to skin. Direct contact may cause severe irritation, pain and possibly burns.

Ingestion

Causes burns of the mouth, throat and stomach. Will cause burns of mucous membreanes of

gastrointestinal tract, with nausea, vomiting and diarrhea.

Inhalation

Inhalation of mist or spray may irritate respiratory tract and may cause burns and difficulty breathing.

Acute toxicity - Product Information

Oral LD50	No information available
Dermal LD50	No information available
Inhalation LC50	No information available

Acute toxicity - Component Information

Component	weight-%	Oral LD50	Dermal LD50	Inhalation LC50
Sodium Hydroxide 1310-73-2	8%	--	= 1350 mg/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

Skin corrosion/irritation	Causes burns
Serious eye damage/eye irritation	Risk of serious damage to eyes
Sensitization	No information available
Germ cell mutagenicity	No information available
Carcinogenicity	This product does not contain any components in concentrations greater than or equal to 0.1% that are listed as known or suspected carcinogens by NTP, IARC, ACGIH, or OSHA.
Reproductive toxicity	No information available

Specific target organ toxicity - Single exposure

No information available.

Specific target organ toxicity - Repeated exposure

No information available

Aspiration hazard

No information available.

Numerical measures of toxicity - Product Information

• 32% of the mixture consists of ingredient(s) of unknown toxicity

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

ATE mix (dermal) 11475 mg/kg

Other information

Conclusions are drawn from sources other than direct testing.

SECTION 12. Ecological information

Ecotoxicity

Acute aquatic toxicity - Product Information

Fish	LC50 (96h, static, fresh water) = 11.1 mg/L (Gambusia affinis / Western Mosquitofish) 1 NR-ZERO (9 days, static, fresh water) = 5.0 - 40.0 mg/L (Oncorhynchus tshawytscha / Chinook Salmon) [2]
Crustacea magna /	NR-ZERO (1 - 4 days, static, fresh water) = 5.0 - 40.0 mg/L (Daphnia Water Flea)[2]
Algae/aquatic plants	No information available

Component	weight-%	Algae/aquatic plants	Fish	Toxicity to daphnia and other aquatic invertebrates
Sodium Hydroxide 1310-73-2	8%	--	LC50 (96 h static) = 45.4 mg/L (Oncorhynchus mykiss)	--

Acute aquatic toxicity - Component Information

Persistence and degradability

No information available

Bioaccumulative potential

No information available

Mobility

No information available

Results of PBT and vPvB assessment

No information available

Other adverse effects

LC50 = Lethal concentration to 50% of test organisms

NR-ZERO = 0% mortality or 100% survival of organisms

1 Author(s): Wallen,I.E., W.C. Greer, and R. Lasater, Publication Year: 1957, Title: Toxicity to Gambusia affinis of Certain Pure Chemicals in Turbid Waters, Source: Sewage Ind. Wastes29(6): 695-711 2 Author(s): Peterson,S.A., W.D. Sanville, F.S. Stay, and C.F. Powers, Publication Year: 1974, Title: Nutrient Inactivation as a Lake Restoration Procedure. Laboratory Investigations, Source: EPA-

660/3-74-032, U.S.EPA, Corvallis, OR:118 p. See ECOTOX: Ecotoxicological Database at http://www.epa.gov/ecotox and search CAS# 1302-42-7 and CAS# 11138-49-1.

SECTION 13: Disposal considerations

Waste treatment methods

Disposal should be made in accordance with federal, state and local regulations.

Contaminated packaging

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

RCRA

Is the unused product a RCRA hazardous waste if discarded? (Yes/No)	Yes
If yes, the EPA Hazardous Waste Code is:	D002 (corrosivity)

SECTION 14. Transport information

DOT	*Regulated*
DOT UN/NA Number	UN1819
Proper shipping name	Sodium Aluminate Solution
Hazard class	8
Packing group	II
ERG Number	154
ICAO/IATA	*Regulated*
UN number	UN1819
Proper shipping name	Sodium Aluminate Solution
Hazard class	8
Packing group	II
ERG Code	8L
IMDG	*Regulated*
UN number	UN1819
Proper shipping name	Sodium Aluminate Solution
Hazard class	8
Packing group	II
EmS	F-A; S-B
Harmonized Tariff Number	2841.90

SECTION 15. Regulatory information

International Inventories

TSCA (United States)

All ingredients are on the inventory or exempt from listing

Australia (AICS)

All ingredients are on the inventory or exempt from listing

Canada (DSL)

All ingredients are on the inventory or exempt from listing

Canada (NDSL)

None of the ingredients are on the inventory.

China (IECSC)

All ingredients are on the inventory or exempt from listing

EINECS (European Inventory of Existing Chemical Substances)

All ingredients are on the inventory or exempt from listing

ELINCS (European List of Notified Chemical Substances)

None of the ingredients are on the inventory.

ENCS (Japan)

All ingredients are on the inventory or exempt from listing

South Korea (KECL)

All ingredients are on the inventory or exempt from listing

Philippines (PICCS)

All ingredients are on the inventory or exempt from listing

Legend

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

AICS - Australian Inventory of Chemical Substances

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

IECSC - China Inventory of Existing Chemical Substances

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

ENCS - Japan Existing and New Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

U.S. Federal Regulations

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).

Component	CERCLA/SARA Hazardous Substance RQ	CERCLA/SARA - Section 302 Extremely Hazardous Substances TPQs	Calculated Product RQ
Sodium Hydroxide 1310-73-2	1000 lb final RQ; 454 kg final RQ	--	--

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).

Component	CWA - Hazardous Substances	CWA - Reportable Quantities	CWA - Priority Pollutants	CWA - Toxic Pollutants
Sodium Hydroxide 1310-73-2	Present	1000 lb RQ	--	--

SARA 311/312 Hazard Categories

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

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

U.S. State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

Sodium Hydroxide, 1310-73-2

Massachusetts Right to Know Law	Present

Minnesota Hazardous Substance List	Present
New Jersey Right to Know List	sn 1706
Pennsylvania Right to Know List	Environmental hazard

SECTION 16. Other information

NFPA Rating	Health - 3	Flammability - 0	Instability - 0 Special Hazard -
HMIS Rating	Health - 3	Flammability – 0	Physical hazard - 0 Personal protection – X

The information contained herein is to the best of our knowledge and belief accurate. However, since the conditions of handling and use are beyond our control, Tramfloc, Inc. makes no guarantee for results obtained, and assumes no responsibility for damages incurred by use of this product. It is the responsibility of the user to comply with all federal, state, and local laws and regulations.