



MATERIAL SAFETY DATA SHEET

1. Product and Company Identification

Product identifier YSI Sucrose Standard- All Concentrations
Version # 01
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Supersedes date -
CAS # Mixture
Product code 2778, 2780, 7190
Product use Analysis Standard/Reagent
Manufacturer information YSI, Inc
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2. Hazards Identification

Potential health effects

Eyes Health injuries are not known or expected under normal use.

Skin Health injuries are not known or expected under normal use.

Inhalation Health injuries are not known or expected under normal use.

Ingestion Health injuries are not known or expected under normal use.

Target organs No specific target organs noted.

Signs and symptoms Direct contact with eyes may cause temporary irritation.

Potential environmental effects Ecological injuries are not known or expected under normal use.

3. Composition / Information on Ingredients

Components	CAS #	Percent
Sucrose	57-50-1	< 5
Copper (II) Chloride	10125-13-0	< 1
DL-Malic Acid	617-48-1	< 1
Sodium carbonate	497-19-8	< 1
Sodium fluoride	7681-49-4	< 1
Water	7732-18-5	> 95

4. First Aid Measures

First aid procedures

Eye contact Rinse with water. Get medical attention if irritation develops and persists.

Skin contact Rinse skin with water/shower. Get medical attention if irritation develops and persists.

Inhalation If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. Call a physician if symptoms develop or persist.

Ingestion Rinse mouth. If ingestion of a large amount does occur, call a poison control center immediately.

General advice If you feel unwell, seek medical advice (show the label where possible). Show this safety data sheet to the doctor in attendance.

5. Fire Fighting Measures

Flammable properties	Not flammable by WHMIS criteria.
Extinguishing media	
Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO ₂).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Protection of firefighters	
Specific hazards arising from the chemical	During fire, gases hazardous to health may be formed.
Protective equipment for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire fighting equipment/instructions	Move containers from fire area if you can do so without risk.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
Explosion data	
Sensitivity to static discharge	Not available.
Sensitivity to mechanical impact	Not available.

6. Accidental Release Measures

Personal precautions	Keep unnecessary personnel away. For personal protection, see section 8 of the MSDS.
Environmental precautions	Do not contaminate water.
Methods for containment	Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible.
Methods for cleaning up	Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water. Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. Never return spills to original containers for re-use. For waste disposal, see section 13 of the MSDS.

7. Handling and Storage

Handling	Do not breathe mist/vapors/spray. Avoid contact with eyes, skin, and clothing. Observe good industrial hygiene practices.
Storage	Store in original tightly closed container. Store away from incompatible materials (see Section 10 of the MSDS).

8. Exposure Controls / Personal Protection

Occupational exposure limits

ACGIH Biological Exposure Indices

Components	Type	Value
Sodium fluoride (CAS 7681-49-4)	BEI	3 mg/l
		2 mg/l

US. ACGIH Threshold Limit Values

Components	Type	Value
Sodium fluoride (CAS 7681-49-4)	TWA	2.5 mg/m ³
Sucrose (CAS 57-50-1)	TWA	10 mg/m ³

Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2)

Components	Type	Value
Sucrose (CAS 57-50-1)	TWA	10 mg/m ³

Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended)

Components	Type	Value	Form
Sodium fluoride (CAS 7681-49-4)	TWA	2.5 mg/m ³	
Sucrose (CAS 57-50-1)	TWA	3 mg/m ³ 10 mg/m ³	Respirable fraction. Total dust.

Canada. Manitoba OELs (Reg. 217/2006, The Workplace Safety And Health Act)

Components	Type	Value
Sodium fluoride (CAS 7681-49-4)	TWA	2.5 mg/m ³
Sucrose (CAS 57-50-1)	TWA	10 mg/m ³

Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents)

Components	Type	Value
Sodium fluoride (CAS 7681-49-4)	TWA	2.5 mg/m ³
Sucrose (CAS 57-50-1)	TWA	10 mg/m ³

Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment)

Components	Type	Value
Sodium fluoride (CAS 7681-49-4)	TWA	2.5 mg/m ³
Sucrose (CAS 57-50-1)	TWA	10 mg/m ³

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value	Form
Sodium fluoride (CAS 7681-49-4)	PEL	2.5 mg/m ³	
Sucrose (CAS 57-50-1)	PEL	5 mg/m ³ 15 mg/m ³	Respirable fraction. Total dust.

US. OSHA Table Z-2 (29 CFR 1910.1000)

Components	Type	Value	Form
Sodium fluoride (CAS 7681-49-4)	TWA	2.5 mg/m ³	Dust.

Engineering controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Personal protective equipment

Eye / face protection

If contact is likely, safety glasses with side shields are recommended.

Skin protection

Wear suitable protective clothing.

Respiratory protection

If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn.

9. Physical & Chemical Properties

Appearance	Not available.
Physical state	Liquid.
Form	Liquid.
Color	Clear and colorless.
Odor	None.
Odor threshold	Not available.
pH	6.5 - 7.5
Vapor pressure	Equivalent to water.
Vapor density	Equal to water vapor.

Boiling point	212 °F (100 °C)
Melting point/Freezing point	Not available.
Solubility (water)	Infinitely soluble
Specific gravity	1
Flash point	Not available.
Flammability limits in air, upper, % by volume	Not available.
Flammability limits in air, lower, % by volume	Not available.
Auto-ignition temperature	Not available.

10. Chemical Stability & Reactivity Information

Chemical stability	Material is stable under normal conditions.
Conditions to avoid	Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	No hazardous decomposition products are known.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.

11. Toxicological Information

Toxicological data

Components	Species	Test Results
Copper (II) Chloride (CAS 10125-13-0)		
Acute		
<i>Oral</i>		
LD50	Guinea pig	32 mg/kg
	Mouse	190 mg/kg
	Rat	140 mg/kg
DL-Malic Acid (CAS 617-48-1)		
Acute		
<i>Oral</i>		
LD50	Mouse	1600 mg/kg
	Rat	> 3200 mg/kg
<i>Other</i>		
LD50	Mouse	50 mg/kg
	Rat	100 mg/kg
Sodium carbonate (CAS 497-19-8)		
Acute		
<i>Inhalation</i>		
LC50	Rat	2300 mg/m ³ , 2 Hours
<i>Oral</i>		
LD50	Rat	4090 mg/kg
Sodium fluoride (CAS 7681-49-4)		
Acute		
<i>Oral</i>		
LD50	Rat	32 mg/kg
Sucrose (CAS 57-50-1)		
Acute		
<i>Oral</i>		
LD50	Rat	29700 mg/kg
Acute effects	Not classified.	

Sensitization	This product is not expected to cause skin sensitization.
Local effects	Direct contact with eyes may cause temporary irritation. Prolonged skin contact may cause temporary irritation.
Chronic effects	Not expected to be hazardous by WHMIS criteria.
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.
ACGIH Carcinogens	
Sodium fluoride (CAS 7681-49-4)	A4 Not classifiable as a human carcinogen.
Sucrose (CAS 57-50-1)	A4 Not classifiable as a human carcinogen.
IARC Monographs. Overall Evaluation of Carcinogenicity	
Sodium fluoride (CAS 7681-49-4)	3 Not classifiable as to carcinogenicity to humans.
Mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Reproductive effects	This product is not expected to cause reproductive or developmental effects.
Symptoms and target organs	Direct contact with eyes may cause temporary irritation.

12. Ecological Information

Ecotoxicological data

Components	Species		Test Results
Sodium carbonate (CAS 497-19-8)			
Aquatic			
Crustacea	EC50	Water flea (Ceriodaphnia dubia)	156.6 - 298.9 mg/l, 48 hours
Fish	LC50	Bluegill (Lepomis macrochirus)	300 mg/l, 96 hours
Sodium fluoride (CAS 7681-49-4)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia magna)	98 mg/l, 48 hours
Fish	LC50	Rainbow trout, donaldson trout (Oncorhynchus mykiss)	108 - 150 mg/l, 96 hours

* Estimates for product may be based on additional component data not shown.

Ecotoxicity	Contains a substance which causes risk of hazardous effects to the environment. The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
Environmental effects	An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Persistence and degradability	Not available.
Partition coefficient	
Sucrose (CAS 57-50-1)	-3.7

13. Disposal Considerations

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not allow this material to drain into sewers/water supplies. Dispose in accordance with all applicable regulations.
Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging	Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport Information

TDG	Not regulated as dangerous goods.
IATA	Not regulated as dangerous goods.
IMDG	Not regulated as dangerous goods.

15. Regulatory Information

Canadian regulations This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

WHMIS status Non-controlled

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	No
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	No
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	No
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	No

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other Information

NFPA ratings Health: 0
Flammability: 0
Instability: 0

Disclaimer The information in the sheet was written based on the best knowledge and experience currently available.