



SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:
US OSHA

Revision date 29-Apr-2020

Supersedes Date: 12-Oct-2015

Revision Number 4

1. Identification

Product identifier

Product Name Trisodium Phosphate, 12-Hydrate

Other means of identification

Product Code(s) BK1173

Synonyms TSP hydrate
Trisodium phosphate 12-hydrate
Trisodium Phosphate crystalline
E 339 (iii)
Tri 20

Recommended use of the chemical and restrictions on use

Recommended use Metal surface treatment
Detergent additive
Water conditioner
Cosmetic additive
Pharmaceutic preparations additive
Food additive

Restrictions on use Uses other than those recommended.

Details of the supplier of the safety data sheet

Supplier Address

ICL
622 Emerson Road - Suite 500
St. Louis, Missouri 63141, USA
Tel:(314)983-7884 Fax:(314)983-7607
e-mail:msdsinfo@icl-group.com

Emergency telephone number

Emergency Telephone Chemtrec 1-800-424-9300

2. Hazard(s) identification

Classification

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

Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2A
Specific target organ toxicity (single exposure)	Category 3

Hazards not otherwise classified (HNOC)

Not Applicable

Label elements

**Signal word**

Warning

Hazard statements

Causes skin irritation

Causes serious eye irritation

May cause respiratory irritation

Precautionary Statements - Prevention

Wash face, hands and any exposed skin thoroughly after handling

Avoid breathing dust/fume/gas/mist/vapors/spray

Use only outdoors or in a well-ventilated area

Wear protective gloves/eye protection/face protection

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

If eye irritation persists: Get medical advice/attention

IF ON SKIN: Wash with plenty of water and soap

If skin irritation occurs: Get medical advice/attention

Take off contaminated clothing and wash it before reuse

IF INHALED: Remove person to fresh air and keep comfortable for breathing

Call a POISON CENTER or doctor if you feel unwell

Precautionary Statements - Storage

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

Store locked up

Precautionary Statements - Disposal

Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

Other information

May be harmful if swallowed

3. Composition/information on ingredients**Substance**

Chemical name	CAS No.	Weight-%
trisodium orthophosphate-12-hydrate	10101-89-0	>92

4. First-aid measures**Description of first aid measures****General advice**

Remove and isolate contaminated clothing and shoes. Show this safety data sheet to the doctor in attendance.

Inhalation

Remove to fresh air. Get medical attention immediately if symptoms occur.

Eye contact

Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.

Skin contact	Wash skin with soap and water. In the case of skin irritation or allergic reactions see a physician.
Ingestion	Clean mouth with water and drink afterwards plenty of water Get medical attention if symptoms occur Do NOT induce vomiting NOTE: Never give an unconscious person anything to drink
Self-protection of the first aider	Avoid contact with skin, eyes or clothing. Wear personal protective clothing (see section 8).

Most important symptoms and effects, both acute and delayed

Symptoms	Burning sensation. Difficulty in breathing. Erythema (skin redness). May cause redness and tearing of the eyes. Irritant to mucous membranes. .
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Indication of any immediate medical attention and special treatment needed

Note to physicians	Treat symptomatically and supportively.
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5. Fire-fighting measures

Suitable Extinguishing Media	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable extinguishing media	Full water jet.
Specific hazards arising from the chemical	May emit toxic and irritating fumes under fire conditions. .
Special protective equipment for fire-fighters	Wear alkaline resistant protective clothing. Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear.

6. Accidental release measures**Personal precautions, protective equipment and emergency procedures**

Personal precautions	Ensure adequate ventilation. Use personal protective equipment as required. Do not breathe dust. Avoid generation of dust. Avoid contact with skin, eyes or clothing. Keep people away from and upwind of spill/leak.
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Methods and material for containment and cleaning up

Methods for containment	Prevent further leakage or spillage if safe to do so.
Methods for cleaning up	Pick up and transfer to properly labeled containers. .
Environmental precautions	Should not be released into the environment. See Section 12 for additional Ecological Information.
Reference to other sections	See section 8 for more information. See section 13 for more information.

7. Handling and storage**Precautions for safe handling**

Advice on safe handling	Handle in accordance with good industrial hygiene and safety practice. Avoid generation of dust. Ensure adequate ventilation. In case of insufficient ventilation, wear suitable respiratory equipment. .
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Conditions for safe storage, including any incompatibilities

Storage Conditions Hygroscopic. Keep container tightly closed in a dry and well-ventilated place. Store away from incompatible materials (see "materials to avoid").

8. Exposure controls/personal protection

Control parameters

Exposure Limits This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Chemical name	ACGIH TLV	OSHA PEL	NIOSH IDLH
trisodium orthophosphate-12-hydrate 10101-89-0	-	-	-

Appropriate engineering controls

Engineering controls Showers
Eyewash stations
Ventilation systems

Individual protection measures, such as personal protective equipment

Eye/face protection Tight sealing safety goggles.

Hand protection Chemical safety gloves
Gloves Butyl rubber
Nitrile rubber
Natural rubber
Viton™
Neoprene™
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

Respiratory protection Use appropriate respiratory protection. Dust proof mask - particle filter mask filter.

Skin and body protection Lightweight protective clothing. Long sleeved clothing. Wear alkaline resistant protective clothing.

General hygiene considerations Handle in accordance with good industrial hygiene and safety practice. Wash thoroughly after handling. Do not breathe dust. Avoid generation of dust. Avoid contact with skin, eyes or clothing. Take off contaminated clothing and wash before reuse.

9. Physical and chemical properties

Information on basic physical and chemical properties

Physical state Solid
Appearance crystalline powder
Color white
Odor Odorless

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	~11.9	
Melting point / freezing point	70°C °C / 158 °F	
Boiling point / boiling range	no data available	None known
Flash point	no data available	None known
Evaporation rate	no data available	None known
Flammability (solid, gas)	no data available	None known
Flammability Limit in Air		None known

Upper flammability or explosive limits	no data available	
Lower flammability or explosive limits	no data available	
Vapor pressure	no data available	None known
Vapor density	no data available	None known
Relative density	1.62 g/cm ³	None known
Water solubility	Readily soluble ~200-350 g/l	
Solubility in other solvents	no data available	None known
Partition coefficient	Not Applicable (inorganic substance)	
Autoignition temperature	no data available	None known
Decomposition temperature	no data available	None known
Kinematic viscosity	no data available	None known
Dynamic viscosity	no data available	None known
<u>Other information</u>		
Oxidizing properties	Not oxidising	
Explosive properties	Not explosive	
Bulk density	~900-1000 kg/m ³	

10. Stability and reactivity

Reactivity	Hygroscopic. Water solutions of this product may be corrosive to metals.
Chemical stability	Stable under recommended storage conditions. Loss of constitutional water on heating.
Possibility of Hazardous Reactions	Contact with water generates heat. Strong exothermic reaction with acids. Reacts with light alloys in the presence of moisture to form hydrogen.
Conditions to avoid	Protect from moisture.
Incompatible materials	Acids. Light metal. light- and brass alloys.
Hazardous decomposition products	Phosphorus oxides. Phosphoric acids.

11. Toxicological information

Information on likely routes of exposure

Product Information

Inhalation	May cause irritation to mucous membranes and upper respiratory tract. Symptoms include sore throat, coughing, shortness of breath and nasal irritation.
Eye contact	Causes serious eye irritation.
Skin contact	Causes skin irritation.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms	Coughing and/ or wheezing. Difficulty in breathing. Erythema (skin redness). May cause redness and tearing of the eyes. May cause eye, nose, throat and skin irritation.
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Acute toxicity

Numerical measures of toxicity

Component information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
trisodium orthophosphate-12-hydrate 10101-89-0	>2000 mg/kg (rat, OECD 420)	>2000 mg/kg (rat, OECD 402, READ ACROSS)	>0.83 mg/L (rat, OECD 403, READ ACROSS)

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

Skin corrosion/irritation Irritating to skin.

Serious eye damage/irritation Irritating to eyes.

Respiratory or skin sensitization Based on available data, the classification criteria are not met.

Germ cell mutagenicity Based on available data, the classification criteria are not met.

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

Chemical name	ACGIH	IARC	NTP	US OSHA
trisodium orthophosphate-12-hydrate 10101-89-0	-	-	-	-

Reproductive toxicity Based on available data, the classification criteria are not met.

STOT - single exposure May cause respiratory irritation.

STOT - repeated exposure Based on available data, the classification criteria are not met.

Aspiration hazard Not Applicable.

12. Ecological information

Ecotoxicity Based on available data, the classification criteria are not met.

Component information

Chemical name	Algae/aquatic plants	Fish	Crustacea	Toxicity to microorganisms
trisodium orthophosphate-12-hydrate 10101-89-0	EC50: >100 mg/L (72h, desmodesmus subspicatus, OECD 201, READ ACROSS)	LC50: >100 mg/L (96h, rainbow trout, OECD 203, READ ACROSS)	EC50: >100 mg/L (48h, daphnia magna, OECD 202, READ ACROSS)	EC50: >1000 mg/kg (3h, activated sludge, OECD 209, READ ACROSS)

Persistence and degradability Not relevant for inorganic salts.

Bioaccumulation Not relevant for inorganic salts.

Chemical name	Partition coefficient
trisodium orthophosphate-12-hydrate 10101-89-0	-

Mobility No information available.

Other adverse effects Harmful due to pH shift. The product should not get in high quantities into waste water because it may act as a plant nutrient and cause eutrophication.

13. Disposal considerations

Waste treatment methods

Waste from residues/unused products	Observe all federal, state and local environmental regulations when disposing of this material.
Contaminated packaging	Empty containers should be disposed of in accordance with all applicable laws and regulations.

14. Transport information

<u>DOT</u>	Not regulated
<u>TDG</u>	Not regulated
<u>MEX</u>	Not regulated
<u>IATA</u> Special precautions	Not regulated None
<u>IMDG</u> Special precautions	Not regulated None

15. Regulatory information

International Inventories

GHS hazardous component CAS registry numbers appearing in section 3 may differ from substances appearing in section 15 due to country or regional chemical inventory coverage requirements, however, remain in compliance with the inventory. Products that are used as food additives are exempt from listing in international chemical inventories.

TSCA	Listed or exempted
DSL	Listed or exempted
ENCS	Listed or exempted
IECSC	Listed or exempted
KECL	Listed or exempted
PICCS	Listed or exempted
AICS	Listed or exempted
NZIoC	Listed or exempted
TCSI	Listed or exempted
NCI	Listed or exempted
TECI	Listed or exempted
NSQ	Listed or exempted

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDL - Canadian Domestic Substances List/Non-Domestic Substances List
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances
NZIoC - New Zealand Inventory of Chemicals
TCSI - Taiwan Chemical Substance Inventory
NCI - Vietnam National Chemicals Inventory
TECI - Thailand Inventory FDA Existing Chemicals
NSQ - Mexico National Inventory of Chemical Substances

US Federal Regulations

Chemical name	U.S. - TSCA (Toxic Substances Control Act) - Section 5(a)(2) - Chemicals with Significant New Use Rules (SNURs)
trisodium orthophosphate-12-hydrate - 10101-89-0	-

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.

SARA 311/312 Hazard Categories

Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications. Under the amended regulations at 40 CFR 370, EPCRA 311/312 Tier II reporting for the 2017 calendar year will need to be consistent with updated hazard classifications.

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
trisodium orthophosphate-12-hydrate 10101-89-0	-	-	-	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	Extremely Hazardous Substances RQs
trisodium orthophosphate-12-hydrate 10101-89-0	5000 lb	-

US State Regulations**California Proposition 65**

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations**US State Regulations**

Chemical name	New Jersey	Massachusetts	Pennsylvania
trisodium orthophosphate-12-hydrate - 10101-89-0	-	X	X

U.S. EPA Label Information

EPA Pesticide Registration Number Not Applicable

16. Other information

NFPA	Health hazards 2	Flammability 0	Instability 0	Physical and chemical properties -
HMIS	Health hazards 2	Flammability 0	Physical hazards 0	Personal protection X

Key or legend to abbreviations and acronyms used in the safety data sheet**Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	*	Skin designation

Key literature references and sources for data used to compile the SDS

Agency for Toxic Substances and Disease Registry (ATSDR)
U.S. Environmental Protection Agency ChemView Database
European Food Safety Authority (EFSA)
European Chemicals Agency
EPA (Environmental Protection Agency)
Acute Exposure Guideline Level(s) (AELG(s))
U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act
U.S. Environmental Protection Agency High Production Volume Chemicals
Food Research Journal
Hazardous Substance Database
International Uniform Chemical Information Database (IUCLID)
Japan GHS Classification
Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS)
NIOSH (National Institute for Occupational Safety and Health)
National Library of Medicine's ChemID Plus (NLM CIP)
National Library of Medicine's PubMed database (NLM PUBMED)
National Toxicology Program (NTP)
New Zealand's Chemical Classification and Information Database (CCID)
Organization for Economic Co-operation and Development Environment, Health, and Safety Publications
Organization for Economic Co-operation and Development High Production Volume Chemicals Program
Organization for Economic Co-operation and Development Screening Information Data Set
World Health Organization

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Revision Note The symbol (***) in the margin of this SDS indicates that this line has been revised.

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End of Safety Data Sheet