SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identification

Product Code/Catalogue Number:	984371_984372
SDS Number:	D14448_SDS_TON R3/R3L _EN
Product Name	**TON R3 / TON R3L**

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

Recommended Use	Laboratory chemicals.

1.3. Details of the supplier of the safety data sheet

Company	**Thermo Fisher Scientific Oy** Ratastie 2, FI-01620 Vantaa, Finland
Telephone number	+358 10 329200
E-mail address	system.support.fi@thermofisher.com

1.4. Emergency telephone number

CHEMTREC INTERNATIONAL +1 703-741-5970

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

CLP Classification - Regulation (EC) No 1272/2008

Substances/mixtures corrosive to metal — Category 1 (H290)

2.2. Label elements

Signal Word **Warning**

Hazard Statements
H290 - May be corrosive to metals
Precautionary Statements
P390 - Absorb spillage to prevent material damage
P234 - Keep only in original packaging

2.3. Other hazards

No information available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.2. Mixtures

Component	Weight %	CLP Classification - Regulation (EC) No 1272/2008
Orthophosphoric acid (CAS #: 7664-38-2)	5 - <10 %	Met. Corr. 1 (H290) Skin Corr. 1B (H314) Eye Dam. 1 (H318)

Component	Reach Registration Number	
Orthophosphoric acid	01-2119485924-24-XXXX	

Full text of Hazard Statements: see section 16

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

General Advice
If symptoms persist, call a physician. Take off contaminated clothing and shoes immediately. Show this safety data sheet to the doctor in attendance.

Inhalation
Move to fresh air.

Skin Contact
Wash off with warm water and soap. If symptoms arise, call a physician.

Eye Contact
Rinse thoroughly with plenty of water, also under the eyelids. If eye irritation persists, consult a specialist.

Ingestion
Clean mouth with water and drink afterwards plenty of water. Do NOT induce vomiting. Consult a physician.

4.2. Most important symptoms and effects, both acute and delayed
No information available.

4.3. Indication of any immediate medical attention and special treatment needed
Treat symptomatically.

SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing media

Suitable Extinguishing Media
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Carbon dioxide (CO_2). Dry powder. Alcohol resistant foam.

Extinguishing media which must not be used for safety reasons
No information available.

5.2. Special hazards arising from the substance or mixture
Thermal decomposition can lead to release of irritating gases and vapors.
Hazardous Combustion Products
None under normal use conditions.

5.3. Advice for firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures
Ensure adequate ventilation.

6.2. Environmental precautions
Prevent further leakage or spillage if safe to do so. Prevent entry into waterways, sewers, basements or confined areas.

6.3. Methods and material for containment and cleaning up
Soak up with inert absorbent material.

6.4. Reference to other sections
Refer to protective measures listed in Sections 8 and 13.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling
Ensure adequate ventilation. Avoid contact with skin and eyes. Wear personal protective equipment/face protection.

7.2. Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place. Keep at temperatures between 2° and 8 °C.

7.3. Specific end use(s)
Use in laboratories

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters
Component Exposure Limits

Component	Finland	European Union	The United Kingdom	Germany
Orthophosphoric acid	TWA: 1 mg/m³ 8 tunteina STEL: 2 mg/m³ 15 minuutteina	TWA: 1 mg/m³ (8h) STEL: 2 mg/m³ (15min)	STEL: 2 mg/m³ TWA: 1 mg/m³	TWA: 2 mg/m³ (8 Stunden). AGW - exposure factor 2 TWA: 2 mg/m³ (8 Stunden). MAK Höhepunkt: 4 mg/m³

Component	Sweden	Norway	Denmark	France
Orthophosphoric acid	Binding STEL: 2 mg/m³ 15 minuter TLV: 1 mg/m³ 8 timmar. NGV	TWA: 1 mg/m³ 8 timer STEL: 2 mg/m³ 15 minutter. value calculated	TWA: 1 mg/m³ 8 timer	TWA / VME: 0.2 ppm (8 heures). indicative limit TWA / VME: 1 mg/m³ (8 heures). indicative limit STEL / VLCT: 0.5 ppm. indicative limit STEL / VLCT: 2 mg/m³. indicative limit

8.2. Exposure controls

Engineering Measures
Avoid contact with skin, eyes or clothing. Ensure adequate ventilation, especially in confined areas.

Personal protective equipment

Eye Protection Safety glasses with side-shields (European standard - EN 166)

Hand Protection Protective gloves

Glove material	Breakthrough time	Glove thickness	EU standard	Glove comments
Disposable gloves	See manufacturers recommendations	-	EN 374	(minimum requirement)

Inspect gloves before use.
Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information)
Ensure gloves are suitable for the task: Chemical compatability, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion.
Remove gloves with care avoiding skin contamination.

Skin and body protection
Long sleeved clothing

Respiratory Protection
No protective equipment is needed under normal use conditions. When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.
To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained properly

Small scale/Laboratory use
Use a NIOSH/MSHA or European Standard EN 149:2001 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.
When RPE is used a face piece Fit Test should be conducted

Hygiene Measures
Handle in accordance with good industrial hygiene and safety practice.

Environmental exposure controls
Prevent product from entering drains.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Appearance	No information available	
Physical State	Liquid	
Odor	Characteristic	
Odor Threshold	No data available	
pH	No data available	
Melting Point/Range	No data available	
Softening Point	No data available	
Boiling Point/Range	100 °C	
Flash Point	No data available	**Method -** No information available
Evaporation Rate	No data available	
Flammability (solid,gas)	No information available	
Explosion Limits	No data available	
Vapor Pressure	No data available	
Vapor Density	No data available	(Air = 1.0)
Specific Gravity / Density	No data available	
Bulk Density	No data available	
Water Solubility	No information available	
Solubility in other solvents	No information available	
Partition Coefficient (n-octanol/water)		
Autoignition Temperature	No data available	
Decomposition Temperature	No data available	
Viscosity	No data available	
Explosive Properties	No information available	
Oxidizing Properties	No information available	

9.2. Other information

No data available

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity
No data available

10.2. Chemical stability
Stable under normal conditions

10.3. Possibility of hazardous reactions
No information available.

10.4. Conditions to avoid
None known.

10.5. Incompatible materials
Strong bases. Powdered metals.

10.6. Hazardous decomposition products
None under normal use conditions.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Product Information
No acute toxicity information is available for this product
(a) acute toxicity;

Oral	No data available
Dermal	No data available
Inhalation	No data available

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Orthophosphoric acid	2600 mg/kg (Rat)	LD50 = 2740 mg/kg (Rabbit)	850 mg/m³ (Rat) 1 h

(b) skin corrosion/irritation;
Based on available data, the classification criteria are not met.
(c) serious eye damage/irritation;
Based on available data, the classification criteria are not met.

(d) respiratory or skin sensitization;
Respiratory
Not classified.
Skin
Not classified.

(e) germ cell mutagenicity;
Not classified

(f) carcinogenicity;
Not classified

There are no known carcinogenic chemicals in this product

(g) reproductive toxicity;

Not classified.

(h) STOT-single exposure;
Not classified.

(i) STOT-repeated exposure;
Not classified.

Target Organs
No information available.

(j) aspiration hazard;
Not classified.

Symptoms / effects,both acute and delayed
No information available

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Component	Freshwater Fish	Water Flea	Freshwater Algae	Microtox
Orthophosphoric acid	98 - 106 mg/L LC50 96 h	> 100 mg/L EC50 = 48 h		

12.2. Persistence and degradability
No information available

12.3. Bioaccumulative potential
No information available

12.4. Mobility in soil
No information available

12.5. Results of PBT and vPvB assessment
No data available for assessment.

12.6. Other adverse effects
None known

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste from Residues/Unused Products
Dispose of in accordance with local regulations.

Contaminated Packaging
Dispose of in accordance with local regulations.

SECTION 14: TRANSPORT INFORMATION

	IMDG/IMO	ADR	IATA
14.1. UN number	UN1805	UN1805	UN1805
14.2. UN proper shipping name	PHOSPHORIC ACID SOLUTION	PHOSPHORIC ACID, SOLUTION	PHOSPHORIC ACID, SOLUTION
14.3. Transport hazard class(es)	8	8	8
14.4. Packing group	III	III	III

14.5. Environmental hazards

No hazards identified

14.6. Special precautions for user

No special precautions required

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Not applicable, packaged goods

SECTION 15: REGULATORY INFORMATION

This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

International Inventories X = listed

Component	EINECS	ELINCS	NLP	TSCA	DSL	NDSL	PICCS	ENCS	IECSC	AICS	KECL
Orthophosphoric acid	231-633-2	-		X	X	-	X	X	X	X	KE-27427 2011-3-5328

National Regulations

Component	Germany - Water Classification (VwVwS)	Germany - TA-Luft Class
Orthophosphoric acid	WGK1	

15.2. Chemical safety assessment

A Chemical Safety Assessment/Report (CSA/CSR) has not been conducted

SECTION 16: OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3

H290 - May be corrosive to metals
H314 - Causes severe skin burns and eye damage
H318 - Causes serious eye damage

Legend

CAS - Chemical Abstracts Service

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

PICCS - Philippines Inventory of Chemicals and Chemical Substances

IECSC - Chinese Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

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

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

ENCS - Japanese Existing and New Chemical Substances

AICS - Australian Inventory of Chemical Substances

NZIoC - New Zealand Inventory of Chemicals

WEL - Workplace Exposure Limit
ACGIH - American Conference of Governmental Industrial Hygienists
DNEL - Derived No Effect Level
RPE - Respiratory Protective Equipment
LC50 - Lethal Concentration 50%
NOEC - No Observed Effect Concentration
PBT - Persistent, Bioaccumulative, Toxic

TWA - Time Weighted Average
IARC - International Agency for Research on Cancer
PNEC - Predicted No Effect Concentration
LD50 - Lethal Dose 50%
EC50 - Effective Concentration 50%
POW - Partition coefficient Octanol:Water
vPvB - very Persistent, very Bioaccumulative

ADR - European Agreement Concerning the International Carriage of Dangerous Goods by Road
IMO/IMDG - International Maritime Organization/International Maritime Dangerous Goods Code
OECD - Organisation for Economic Co-operation and Development
BCF - Bioconcentration factor

ICAO/IATA - International Civil Aviation Organization/International Air Transport Association
MARPOL - International Convention for the Prevention of Pollution from Ships
ATE - Acute Toxicity Estimate
VOC (volatile organic compound)

Key literature references and sources for data
Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS

Training Advice
Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and hygiene.

Version	2
Revision Date	12-Nov-2019
Reason for revision	SDS section(s) updated:, 1, 3.

Disclaimer

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