

SAFETY DATA SHEET

Thermoplan Milk System Cleaning Tablets

SECTION 1: IDENTIFICATION

1.1. Product identifier

Trade name: Thermoplan Milk System Cleaning Tablets
Product no.: Acid formula Thermoplan article number 120.259 / 120.593

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

Relevant identified uses of the substance or mixture: Cleaning product
 Restricted to professional and industrial use.

Uses advised against : None known.

1.3. Details of the supplier of the safety data sheet

Company and address: **Urnex Brands, LLC**
 755 Tri-State Parkway
 Gurnee, IL 60031
 United States
 +1 (800) 837-8140
 www.urnex.com

Contact person: Customer support

E-mail: info@urnex.com

SDS date: 12/1/2025

SDS Version: 1.0

1.4. Emergency telephone number

Contact the poison control at 1-800-222-1222 (24/7) or use the webPOISONCONTROL® (triage.webpoisoncontrol.org) to get specific guidance for your case
 See also section 4 "First aid measures".

SECTION 2: HAZARD(S) IDENTIFICATION

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

2.1. Classification of the substance or mixture

Skin Irrit. 2; H315, Causes skin irritation.
 Skin Sens. 1; H317, May cause an allergic skin reaction.
 Eye Irrit. 2; H319, Causes serious eye irritation.
 STOT SE 3; H335, May cause respiratory irritation.

2.2. Label elements

Hazard pictogram(s):



Signal word:

Warning

Hazard statement(s):

Causes skin irritation. (H315)
May cause an allergic skin reaction. (H317)
Causes serious eye irritation. (H319)
May cause respiratory irritation. (H335)

Precautionary statement(s):

General:

Not applicable.

Prevention:

Avoid breathing dust. (P261)
Wash hands thoroughly after handling. (P264)
Contaminated work clothing should not be allowed out of the workplace. (P272)
Wear eye protection/protective gloves/protective clothing. (P280)

Response:

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. (P305+P351+P338)
Call a POISON CENTER/doctor if you feel unwell. (P312)
If skin irritation or rash occurs: Get medical advice/attention. (P333+P313)
If eye irritation persists: Get medical advice/attention. (P337+P313)
Take off contaminated clothing and wash it before reuse. (P362+P364)
Store in a well-ventilated place. Keep container tightly closed. (P403+P233)
Dispose of contents/container in accordance with local regulation. (P501)

Storage:

Disposal:

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

Not applicable. This product is a mixture.

3.2. Mixtures

Product/substance	Identifiers	% w/w	Classification	Note
Citric acid	CAS No.: 77-92-9	40-60%	Eye Irrit. 2, H319 STOT SE 3, H335	

Conforms to OSHA Hazard Communication Standard (HCS) (29 CFR 1910.1200 / revised 2024)

maleic acid	CAS No.: 110-16-7	25-40%	Acute Tox. 4, H302 Acute Tox. 4, H312 Skin Corr. 1B, H314 Skin Sens. 1, H317 Eye Dam. 1, H318 STOT SE 3, H335	
sulfamic acid	CAS No.: 5329-14-6	5-10%	Skin Irrit. 2, H315 Eye Irrit. 2, H319	

Where the concentration of an ingredient is expressed as a range the exact concentration has been withheld as a trade secret.

See full text of H-phrases in section 16. Occupational exposure limits are listed in section 8, if these are available.

Other information

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SECTION 4: FIRST-AID MEASURES

4.1. Description of first aid measures

General information:

If breathing is irregular, drowsiness, loss of consciousness or cramps: Call 911 and give immediate treatment (first aid).

Contact a doctor if in doubt about the injured person's condition or if the symptoms persist. Never give an unconscious person water or other drink.

Inhalation:

Upon breathing difficulties or irritation of the respiratory tract: Bring the person into fresh air and stay with him/her.

Skin contact:

IF ON SKIN: Wash with plenty of water/water and soap.
Remove contaminated clothing and shoes. Ensure to wash exposed skin thoroughly with water and soap. DO NOT use solvents or thinners.

If skin irritation occurs: Get medical advice/attention.

Eye contact:

If in eyes: Flush eyes immediately with plenty of water or isotonic water (20-30 °C) for at least 5 minutes and continue until irritation stops. Remove contact lenses. Make sure to flush under upper and lower

Ingestion:

eyelids. If irritation continues, contact a doctor. Continue flushing during transport.

If the person is conscious, rinse the mouth with water and stay with the person. Never give the person anything to drink.

In case of malaise, seek medical advice immediately and bring the safety data sheet or label from the product. Do not induce vomiting, unless recommended by the doctor. Have the person lean forward with head down to avoid inhalation of or choking on vomited material.

Burns:

Not applicable.

4.2. Most important symptoms and effects, both acute and delayed

Sensitisation: This product contains substances, which may trigger allergic reaction upon dermal contact. Manifestation of allergic reactions typically takes place within 12-72 hours after exposure.

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

If eye irritation persists: Get medical advice/attention.

Information to medics

Bring this safety data sheet or the label from this product.

SECTION 5: FIRE-FIGHTING MEASURES

5.1. Extinguishing media

Suitable extinguishing media: Alcohol-resistant foam, carbon dioxide, powder, water mist.
Unsuitable extinguishing media: Waterjets should not be used, since they can spread the fire.

5.2. Special hazards arising from the substance or mixture

Fire will result in dense smoke. Exposure to combustion products may harm your health. Closed containers, which are exposed to fire, should be cooled with water. Do not allow fire-extinguishing water to enter the sewage system and nearby surface waters. If the product is exposed to high temperatures, e.g. in the event of fire, dangerous decomposition compounds are produced. These are:
Sulphur oxides
Nitrogen oxides (NO_x)
Carbon oxides (CO / CO₂)

5.3. Advice for firefighters

Wear self-contained breathing apparatus and protective clothing to prevent contact. Upon direct exposure contact the Poison Help Line on 1-800-222-1222 (24/7) in order to obtain further advice.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Avoid direct contact with spilled substances.
Ensure adequate ventilation, especially in confined areas.
Contaminated areas may be slippery.

6.2. Environmental precautions

Avoid discharge to lakes, streams, sewers, etc.
Keep unauthorized persons away from the spill

6.3. Methods and material for containment and cleaning up

Limit spillage, sweep up and shovel into appropriate containers for disposal. Store in suitable, closed containers for disposal.
Wherever possible cleaning should be performed with normal cleaning agents. Avoid use of solvents.

6.4. Reference to other sections

See section 13 "Disposal considerations" on handling of waste.
See section 8 "Exposure controls/personal protection" for protective measures.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Smoking, drinking and consumption of food is not allowed in the work area.
See section 8 "Exposure controls/personal protection" for information on personal protection.

7.2. Conditions for safe storage, including any incompatibilities

<i>Recommended storage material:</i>	Always store in containers of the same material as the original container.
<i>Storage conditions:</i>	Dry, cool and well ventilated
<i>Incompatible materials:</i>	Strong acids, strong bases, strong oxidizing agents, and strong reducing agents.

7.3. Specific end use(s)

This product should only be used for applications quoted in section 1.2.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

No substances are listed with a permissible exposure limit (ref: 29 CFR 1910.1000 TABLE Z-1)

8.2. Exposure controls

Apply general control to prevent unnecessary exposure

<i>General recommendations:</i>	Smoking, drinking and consumption of food is not allowed in the work area.
<i>Exposure scenarios:</i>	There are no exposure scenarios implemented for this product.
<i>Exposure limits:</i>	Occupational exposure limits have not been defined for the substances in this product.

Appropriate technical measures: Apply standard precautions during use of the product. Avoid inhalation of gas or dust.

Hygiene measures: Take off contaminated clothing and wash it before reuse.

Measures to avoid environmental exposure: No specific requirements.


Individual protection measures, such as personal protective equipment

Generally: Wash contaminated clothing before reuse. Use only protective equipment with a recognized certification mark, e.g. the UL mark.


Respiratory Equipment:

Type	Class	Colour	Standards	
Respiratory protection is not needed in the event of adequate ventilation.				


Skin protection:

Recommended	Type/Category	Standards	
Dedicated work clothing should be worn.	-	-	

Hand protection:

Material	Glove thickness (mm)	Breakthrough time (min.)	Standards	
Gloves	-	-	EN374	

Eye protection:

Type	Standards	
Safety glasses	EN166	

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state: Tablets

Color: White

Odor: No data available.

Odor threshold (ppm): No data available.

pH: -

<i>pH in solution:</i>	1.64 - 3.0 (1%)
<i>Density (g/cm³):</i>	0.5-1
<i>Kinematic viscosity:</i>	Does not apply to solids.
<i>Particle characteristics:</i>	No data available.

Phase changes

<i>Melting point/freezing point (°F):</i>	No data available.
<i>Softening point/range (°F):</i>	Does not apply to solids.
<i>Boiling point (°F):</i>	Does not apply to solids.
<i>Vapor pressure:</i>	No data available.
<i>Relative vapor density:</i>	Does not apply to solids.
<i>Decomposition temperature (°F):</i>	No data available.

Data on fire and explosion hazards

<i>Flash point (°F):</i>	Does not apply to solids.
<i>Flammability (°F):</i>	No data available.
<i>Auto-ignition temperature (°F):</i>	No data available.
<i>Explosion limits (% v/v):</i>	Does not apply to solids.

Solubility

<i>Solubility in water:</i>	Completely soluble
<i>n-octanol/water coefficient (LogKow):</i>	No data available.
<i>Solubility in fat (g/L):</i>	No data available.

9.2. Other information

<i>Acid/alkaline reserve:</i>	2.97 g
<i>Other physical and chemical parameters:</i>	No data available.
<i>Oxidizing properties:</i>	No data available.

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity

No data available.

10.2. Chemical stability

The product is stable under the conditions, noted in section 7 "Handling and storage".

10.3. Possibility of hazardous reactions, including those associated with foreseeable emergencies

None known.

10.4. Conditions to avoid

None known.

10.5. Incompatible materials

Strong acids, strong bases, strong oxidizing agents, and strong reducing agents.

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Acute toxicity

Product/substance	Citric acid
Test method:	OECD 401
Species:	Mouse
Route of exposure:	Oral
Test:	LD50
Result:	5400 mg/kg bw

Product/substance	Citric acid
Test method:	OECD 401
Species:	Rat
Route of exposure:	Oral
Test:	LD50
Result:	11700 mg/kg bw

Product/substance	Citric acid
Species:	Rat
Route of exposure:	Dermal
Test:	LD50
Result:	>2000 mg/kg bw

Product/substance	maleic acid
Species:	Rat
Route of exposure:	Oral
Test:	LD50
Result:	708 mg/kg

Product/substance	maleic acid
Species:	Rat
Route of exposure:	Inhalation
Test:	LC50 (2 hours)
Result:	>720 mg/m ³

Product/substance	maleic acid
Species:	Rabbit
Route of exposure:	Dermal
Test:	LD50
Result:	1560 mg/kg

Product/substance	sulfamic acid
Species:	Rat
Route of exposure:	Oral
Test:	LD50
Result:	3160 mg/kg

Product/substance	sulfamic acid
Species:	Mouse
Route of exposure:	Oral
Test:	LD50
Result:	1312 mg/kg

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

Skin corrosion/irritation

Product/substance	Citric acid
Test method:	OECD 404
Species:	Rabbit
Result:	No adverse effect observed (Not irritating)

Product/substance	maleic acid
Species:	Rabbit
Duration:	24 hours
Result:	Adverse effect observed (Irritating)

Causes skin irritation.

Serious eye damage/irritation

Product/substance	Citric acid
Test method:	OECD 405
Species:	Rabbit
Result:	Adverse effect observed (Irritating)

Product/substance	maleic acid
Species:	Rabbit
Result:	Adverse effect observed (Causes serious eye damage)

Causes serious eye irritation.

Respiratory sensitisation

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

Skin sensitisation

May cause an allergic skin reaction.

Germ cell mutagenicity

Product/substance	Citric acid
Test method:	OECD 471
Species:	S. typhimurium
Conclusion:	No adverse effect observed

Product/substance	Citric acid
Test method:	OECD 475
Species:	Rat
Conclusion:	No adverse effect observed

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

Carcinogenicity

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

Reproductive toxicity

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

STOT-single exposure

May cause respiratory irritation.

STOT-repeated exposure

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

Aspiration hazard

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

Long term effects

Irritation effects: This product contains substances, which may cause irritation upon exposure to skin, eyes or lungs. Exposure may result in an increased absorption potential of other hazardous substances at the area of exposure.

Other information

None known.

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Product/substance	Citric acid
Test method:	OECD 203
Species:	Fish, <i>Leuciscus idus</i>
Duration:	48 hours
Test:	LC50
Result:	440 mg/L

Product/substance	Citric acid
Species:	<i>Daphnia magna</i>
Duration:	24 hours
Test:	LC50
Result:	1535 mg/L

Product/substance	Citric acid
Species:	Algae, <i>Scenedesmus quadricauda</i>
Duration:	8 days
Test:	NOEC
Result:	425 mg/L

Product/substance	maleic acid
Species:	Fish, <i>Pimephales promelas</i>
Duration:	96 hours
Result:	5 mg/L

Product/substance	maleic acid
Species:	Fish, <i>Lepomis macrochirus</i>
Duration:	96 hours
Result:	> 300 mg/L

Product/substance	maleic acid
Species:	<i>Daphnia magna</i>
Duration:	48 hours
Test:	EC50

Conforms to OSHA Hazard Communication Standard (HCS) (29 CFR 1910.1200 / revised 2024)

Result: 160-400 mg/L

Product/substance maleic acid
 Species: Algae, Desmodesmus subspicatus
 Duration: 72 hours
 Test: EC50
 Result: 41 mg/L

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

12.2. Persistence and degradability

Product/substance Citric acid
 Result: 100%
 Conclusion: Readily biodegradable
 Test: OECD 301 E

12.3. Bioaccumulative potential

Product/substance maleic acid
 BCF: < 10
 Conclusion: -

12.4. Mobility in soil

No data available.

12.5. Results of PBT and vPvB assessment

This mixture/product does not contain any substances known to fulfil the criteria for PBT and vPvB classification.

12.6. Other adverse effects

None known.

SECTION 13: DISPOSAL CONSIDERATIONS

RCRA Hazardous waste ("P" and "U" list) (40 CFR 261)

None of the components are listed

Specific labelling

Contaminated packing

Packaging containing residues of the product must be disposed of similarly to the product.

SECTION 14: TRANSPORT INFORMATION

	14.1 UN / ID	14.2 UN proper shipping name	14.3 Hazard class(es)	14.4 PG*	14.5 Env**	Other informati on:
DOT	-	Not regulated		-	No	See below for additiona l informati on.

Conforms to OSHA Hazard Communication Standard (HCS) (29 CFR 1910.1200 / revised 2024)

	14.1 UN / ID	14.2 UN proper shipping name	14.3 Hazard class(es)	14.4 PG*	14.5 Env**	Other informat ion:
IMDG	-	Not regulated		-	No	See below for additional information.
IATA	-	Not regulated		-	No	See below for additional information.

* Packing group

** Environmental hazards

Additional information

DOT / See § 172.101 Hazardous Materials Table for any information on special provisions, requirements, or warnings in connection with transport. See § 172.602, for instructions in writing regarding mitigation of damages in relation to incidents or accidents during transport.

IMDG / See section 3.2.1, for any information on special provisions, requirements, or warnings in connection with transport.

IATA / See Table 4.2 for any information on special provisions, requirements, or warnings in connection with transport.

14.6. Special precautions for user

Not applicable.

14.7. Transport in bulk according to IMO instruments

No data available.

SECTION 15: REGULATORY INFORMATION

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

15.2. U.S. Federal regulations

TSCA (the non-confidential portion):

Citric acid is listed
maleic acid is listed
sulfamic acid is listed

Clean Air Act:

None of the components are listed

EPCRA Section 302:

None of the components are listed

EPCRA Section 304:

None of the components are listed

EPCRA section 313:

None of the components are listed

CERCLA:

maleic acid is regulated with a Reportable Quantity (RQ) of: 5000 pounds

Hazardous chemical inventory reporting:

This product is subject to Tier II reporting.

State regulations

California / Prop. 65:

None of the components are listed

Massachusetts / Right To Know Act:

maleic acid is listed

New Jersey / Right To Know Act:

maleic acid / Substance number: 1151

—
sulfamic acid / Substance number: 1770
sulfamic acid is on the Special Health Hazard Substance List

New York / Right To Know Act:

—
maleic acid is listed
maleic acid is regulated with a Reportable Quantity (RQ) of: 5000 pounds
maleic acid is regulated with a Treshold Reporting Quantity (TRQ) of: 100 pounds

—
sulfamic acid is listed
sulfamic acid is regulated with a Treshold Reporting Quantity (TRQ) of: 100 pounds

Pennsylvania / Right To Know Act:

—
maleic acid is listed
maleic acid is hazardous to the environment (E)

15.4. Restrictions for application

Restricted to professional and industrial use.

15.5. Demands for specific education

No specific requirements.

15.6. Additional information

Not applicable.

15.7. Chemical safety assessment

No

15.8. Sources

OSHA Hazard Communication Standard (29 CFR 1910.1200)

SECTION 16: OTHER INFORMATION

Full text of H-phrases as mentioned in section 3

- H302, Harmful if swallowed.
- H312, Harmful in contact with skin.
- H314, Causes severe skin burns and eye damage.
- H315, Causes skin irritation.
- H317, May cause an allergic skin reaction.
- H318, Causes serious eye damage.

H319, Causes serious eye irritation.
H335, May cause respiratory irritation.

The full text of identified uses as mentioned in section 1

None known.

Abbreviations and acronyms

ACGIH = American Conference of Governmental Industrial Hygienists
ADN = European Provisions concerning the International Carriage of Dangerous Goods by Inland Waterway
ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
CAS = Chemical Abstracts Service
CERCLA = Comprehensive Environmental Response Compensation and Liability Act
DOT = Department of Transportation
EINECS = European Inventory of Existing Commercial chemical Substances
EPCRA = Emergency Planning and Community Right-To-Know Act
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
HCIS = Hazardous Chemical Information System
HNOC = Hazards Not Otherwise Classified
IARC = International Agency for Research on Cancer
IATA = International Air Transport Association
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
NFPA = National Fire Protection Association
NIOSH = National Institute for Occupational Safety and Health
OECD = Organisation for Economic Co-operation and Development
OSHA = Occupational Safety and Health Administration
PBT = Persistent, Bioaccumulative and Toxic
RCRA = Resource Conservation and Recovery Act
RID = The Regulations concerning the International Carriage of Dangerous Goods by Rail
RRN = REACH Registration Number
SARA = Superfund Amendments and Reauthorization Act
SCL = A specific concentration limit.
STEL = Short-term exposure limits
STOT-RE = Specific Target Organ Toxicity - Repeated Exposure
STOT-SE = Specific Target Organ Toxicity - Single Exposure
TSCA = The Toxic Substances Control Act
TWA = Time weighted average
UN = United Nations
UVBC = Unknown or variable composition, complex reaction products or of biological materials
VOC = Volatile Organic Compound
vPvB = Very Persistent and Very Bioaccumulative

Additional information

The classification of the mixture in regard of health hazards is in accordance with the calculation methods given by HCS (29 CFR 1910.1200).

The safety data sheet is validated by

PurposeBuilt Brands Regulatory Team

Other

A change (in proportion to the last essential change (first cipher in SDS version, see section 1)) is marked with a triangle.

The information in this safety data sheet applies only to this specific product (mentioned in section 1) and is not necessarily correct for use with other chemicals/products.

It is recommended to hand over this safety data sheet to the actual user of the product.

Information in this safety data sheet cannot be used as a product specification.

Country-language: US-en