

SAFETY DATA SHEET

# Thermoplan Milk System Cleaning Tablets

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

### 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

*Distributor:* **Thermoplan AG**  
 Thermoplan-Platz 1  
 6353 Weggis  
 Switzerland  
 +41 41 392 12 00  
 +41 41 392 12 01  
 www.thermoplan.ch

*Contact person:* Customer support

*E-mail:* info@urnex.com

*SDS date:* 01/12/2025

*SDS Version:* 2.0

*Date of previous version:* 12/09/2023 (1.0)

### 1.4. Emergency telephone number

National Poison Centre (Penang): Tel: 04 657 0099 (Monday-Friday 08:10am - 5:10pm), Tel: 012 430 9499 (Monday-Friday 5:10pm-10:00pm ; Weekends & public holidays 8.10am - 5.10pm)

See section 4: First aid measures

## SECTION 2: HAZARDS IDENTIFICATION

This material is considered hazardous according to The Industry Code of Practice on Chemical Classification and Hazard Communication (ICOP).

### 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)

Wear eye protection/protective gloves/protective clothing. (P280)

▼ *Response:*

If skin irritation or rash occurs: Get medical advice/attention. (P333+P313)

Take off contaminated clothing and wash it before reuse. (P362+P364)

*Storage:*

Store in a well-ventilated place. Keep container tightly closed. (P403+P233)

▼ *Disposal:*

Dispose of contents/container in accordance with local regulation. (P501)

*Hazardous substances:*

Citric acid  
maleic acid

▼ *Additional labelling:*

## 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 EC No.: 201-069-1	40-60%	Eye Irrit. 2, H319 STOT SE 3, H335	
maleic acid	CAS No.: 110-16-7 EC No.: 203-742-5	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 EC No.: 226-218-8	5-10%	Skin Irrit. 2, H315 Eye Irrit. 2, H319 Aquatic Chronic 3, H412	

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

## Other information

-

## SECTION 4: FIRST AID MEASURES

### 4.1. Description of first aid measures

*General information:*

In the case of accident: Contact a doctor or casualty department – bring the label or this safety data sheet.

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.

If skin irritation or rash occurs: Get medical advice/attention.

**Information to medics**

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

**SECTION 5: FIREFIGHTING 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<sub>x</sub>)

Carbon oxides (CO / CO<sub>2</sub>)

**5.3. ▼ Advice for firefighters**

Wear self-contained breathing apparatus and protective clothing to prevent contact. Upon direct exposure contact National Poison Centre (Penang) (see section 1.4), in order to obtain further advice.

Hazchem Code: None

**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 in the national list of substances with an occupational exposure limit.

### 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.
<i>Appropriate technical measures:</i>	Apply standard precautions during use of the product. Avoid inhalation of gas or dust.
<i>Hygiene measures:</i>	Take off contaminated clothing and wash it before reuse.
<i>Measures to avoid environmental exposure:</i>	No specific requirements.


### Individual protection measures, such as personal protective equipment

<i>Generally:</i>	Wash contaminated clothing before reuse. Use only CE marked protective equipment.
-------------------	--


#### *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

<i>Form:</i>	Tablets
<i>Colour:</i>	White
▼ <i>Odour:</i>	No data available.
▼ <i>Odour threshold (ppm):</i>	No data available.
<i>pH:</i>	-

<i>pH in solution:</i>	1.64 - 3.0 (1%)
<i>Density (g/cm<sup>3</sup>):</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 (°C):</i>	No data available.
▼ <i>Softening point/range (°C):</i>	Does not apply to solids.
<i>Boiling point (°C):</i>	Does not apply to solids.
▼ <i>Vapour pressure:</i>	No data available.
<i>Relative vapour density:</i>	Does not apply to solids.
▼ <i>Decomposition temperature (°C):</i>	No data available.
<i>Evaporation rate (n-butylacetate = 100):</i>	

### Data on fire and explosion hazards

<i>Flash point (°C):</i>	Does not apply to solids.
▼ <i>Flammability (°C):</i>	No data available.
▼ <i>Auto-ignition temperature (°C):</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

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 <sup>3</sup>

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.

**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

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

### Waste treatment methods

Dispose of contents/container to an approved waste disposal plant.

### 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:
ADR	-	Not regulated		-	No	See below for additiona l informati on.

	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 additiona l informati on.
IATA	-	Not regulated		-	No	See below for additiona l informati on.

\* Packing group

\*\* Environmental hazards

▼ **Additional information**

ADR / See Table A, section 3.2.1 for any information on special provisions, requirements, or warnings in connection with transport. See section 5.4.3, 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.

Hazchem Code: None

**14.6. Special precautions for user**

Not applicable.

**14.7. Transport in bulk according to Annex II of Marpol and the IBC Code**

No data available.

**SECTION 15: REGULATORY INFORMATION**

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

▼ *Restrictions for application:*

Restricted to professional and industrial use.

People under the age of 18 shall not be exposed to this product.

*Demands for specific education:*

No specific requirements.

*Control of industrial major accident hazards:*

Not applicable.

*Additional information:*

Not applicable.

*Chemical Information Management System (CIMS):* Citric acid is listed  
maleic acid is listed  
sulfamic acid is listed

Sources:

OCCUPATIONAL SAFETY AND HEALTH ACT  
1994  
Occupational Safety and Health  
(Classification, Labelling, and Safety Data  
Sheet of Hazardous Chemicals) Regulations  
2013 [P.U. (A) 310/2013] (CLASS Regulations)  
Industry Code of Practice on Chemical  
Classification and Hazard Communication  
2013 (ICOP) [P.U. (B) 128/2014]

## 15.2. Chemical safety assessment

No

## 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.  
H412, Harmful to aquatic life with long lasting effects.

### The full text of identified uses as mentioned in section 1

None known.

### Abbreviations and acronyms

ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road  
ATE = Acute Toxicity Estimate  
BCF = Bioconcentration Factor  
CAS = Chemical Abstracts Service  
EINECS = European Inventory of Existing Commercial chemical Substances  
GHS = Globally Harmonized System of Classification and Labelling of Chemicals  
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)  
OECD = Organisation for Economic Co-operation and Development  
PBT = Persistent, Bioaccumulative and Toxic  
RID = The Regulations concerning the International Carriage of Dangerous Goods by Rail  
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

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 The Industry Code of Practice on Chemical Classification and Hazard Communication (ICOP).

### **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: MY-en