Safety Data Sheet

According to Regulation (EC) No 1907/2006
(modified by regulation EU No. 878/2020)
Version 08
Revision: 2024-05-28

REF	article name
ME E-0300	**Leptin ELISA**
ME E-0300R	**Leptin ELISA**

This SDS applies to the ELISA kit as indicated on the cover sheet of this document.

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name	1. CONJUGATES 2. STANDARDS AND CONTROLS 3. BUFFERS (excluding WASH BUFFER CONCENTRATE) 4. DILUENTS 5. MICROPLATES 6. STANDARD STOCKS

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

Relevant identified uses	To be used as a component with ELISA kits according to the instructions provided with the kit.
Uses advised against	Not available

1.3. Details of the supplier of the safety data sheet

Name	LDN Labor Diagnostika Nord GmbH & Co. KG
Address	Am Eichenhain 1 48531 Nordhorn, Germany
Telephone	+49 5921 81970
Telefax	+49 5921 8197201
Contact email	support@ldn.de

1.4. Emergency telephone number

Telephone	+49 5921 8197 0 (during opening time: 8:00 h – 16:00 h)

SECTION 2: Hazards identification

2.1. Classification according to the regulation (EC) n°1272/2008 (CLP) and its amendments

This preparation is classified as not dangerous according to CLP (EC) No 1272/2008.

2.2. Label elements according to the regulation (EC) n°1272/2008 (CLP) and its amendments

Danger symbol	Not applicable.
Signal word	Not applicable.
Product Identifier	Not applicable.
	Not applicable.
Danger	Not applicable.
Supplemental Hazard Information	Not applicable.
Prevention statements	Not applicable.
Response statements	Not applicable.
Storage statements	Not applicable.
Disposal statements	Not applicable.

2.3 Other hazards

PBT & vPvB:	PBT: Not applicable vPvB: Not applicable

SECTION 3: Composition/information on ingredients

No substances fulfill the criteria set forth in Annex II section A of the REACH regulation (EC) n°878/2020.

SECTION 4: First aid measures

4.1. Description of first aid measures

General information	In general, in case of doubt or if symptoms persist, always call a doctor. Never give anything by mouth to an unconscious person.
Following inhalation	If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get immediate medical advice/attention.
Following skin contact	In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Wash clothing before reuse. Call a physician if irritation develops and persists.
Following eye contact	In case of contact, immediately flush eyes with plenty of water. If easy to do, remove contact lenses, if worn. If eye irritation persists: Get medical advice/attention.
Following ingestion	If swallowed, do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical advice/attention.
For emergency responders	No data available.

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

Symptoms	May cause eye irritation. Symptoms may include discomfort or pain, excess blinking and tear production, with marked redness and swelling of the conjunctiva. May cause skin irritation. Symptoms may include redness, edema, drying, defatting and cracking of the skin. May be harmful if swallowed. May cause stomach distress, nausea or vomiting.
Effects	No data available.

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

Treat according to symptoms

SECTION 5 : Firefighting measures

5.1. Extinguishing media — Treat for surrounding material

5.2. Special hazards arising from the substance or mixture — Products of combustion may include, and are not limited to: oxides of carbon

5.3. Advice for firefighters — Keep upwind of fire. Wear full fire fighting turn-out gear (full Bunker gear) and respiratory protection (SCBA).

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures — Use personal protection recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel. Avoid any contact with the skin and eyes. Do not breathe vapour or mist.

6.2. Environmental precautions — Keep out of drains, sewers, ditches, and waterways. Minimize use of water to prevent environmental contamination.

6.3. Methods and material for containment and cleaning up

Contain and/or absorb spill with inert material (e.g. sand, vermiculite), then place in a suitable container. Do not flush to sewer or allow to enter waterways. Use appropriate Personal Protective Equipment (PPE).
Scoop up material and place in a disposal container. Provide ventilation.

6.4. Reference to other sections

See section 8 for further information on protective clothing and equipment and section 13 for advice on waste disposal.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Users should have a thorough understanding how to use this product. Do not breathe gas/fumes/ vapor/spray. Do not get in eyes, on skin, or on clothing. Do not swallow. Handle and open container with care. When using do not eat, drink or smoke. (See section 8).

7.2. Conditions for safe storage, including any incompatibilities

Keep out of the reach of children. Keep container tightly closed and in a well-ventilated place. Product should be at room temperature and mixed gently but thoroughly before use. Do not use any component beyond the expiration date printed on the label. Unused chemicals should not be returned to the container. (See section 10)

7.3. Specific end use(s)

No data available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Ingredient	UK - Occupational Exposure Limits (TWA)
Not applicable.	

8.2. Exposure controls

Appropriate engineering controls

Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapor, etc.) below recommended exposure limits.
Eye/face protection: Wear approved eye (properly fitted dust- or splash-proof chemical safety goggles) / face (face shield) protection.

Hand protection: Wear solvent resistant gloves.

Respiratory protection: In case of insufficient ventilation, wear suitable respiratory equipment.

Environmental exposure controls

Handle in accordance with good industrial hygiene and safety practice.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Liquid
Color	Not available
Odour	Not available
Odor threshold	Not available
pH	Not available
Melting / Freezing point	Not available
Boiling point	Not available
Flash point	Not available
Evaporation rate	Not available
Flammability	Not flammable
Lower limit of flammability or explosive	Not available

Upper limit of flammability or explosive	Not available
Vapour pressure	Not available
Vapour density	Not available
Relative density	Not available
Water solubility	Not available
Solubility in other Solvents	Not available
Log Kow	Not available
Auto-inflammability temperature	Not available
Decomposition temperature	Not available
Viscosity	Not available
Explosive properties	Not available
Oxidizing properties	Not available
Refractive index	Not available

9.2. Other information
No data available.

SECTION 10: Stability and reactivity

10.1. Reactivity	No dangerous reaction known under conditions of normal use.
10.2. Chemical stability	Stable under normal storage conditions.
10.3. Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
10.4. Conditions to avoid	Heat. Incompatible materials.
10.5. Incompatible materials	None known.
10.6. Hazardous decomposition products	May include, and are not limited to: oxides of carbon.

SECTION 11: Toxicological information

Acute toxicity	Unknown toxicity.
Inhalation	May cause respiratory tract irritation.
Ingestion	May be harmful if swallowed. May cause stomach distress, nausea or vomiting.
Skin corrosion	May cause skin irritation. Symptoms may include redness, edema, drying, defatting and cracking of the skin.
Eye damage	May cause eye irritation. Symptoms may include discomfort or pain, excess blinking and tear production, with marked redness and swelling of the conjunctiva.
Respiratory sensibilisation	Not available.
Germ cell mutagenicity	This product is not classified as a mutagen.
Carcinogenicity	This product is not classified as a carcinogen.
Toxic for reproduction	This product does not contain known reproductive or developmental toxins
Unique specific toxicity	Not available.

Repeated specific toxicity	Not available.
Aspiration hazard	Not expected to occur.
Other information	Not available.

SECTION 12: Ecological information

12.1. Toxicity May cause long-term adverse effects in the aquatic environment.

12.2. Persistence and degradability Not available.

12.3. Bioaccumulative potential Not available.

12.4. Mobility in soil Not available.

12.5. Results of PBT and vPvB assessment Not available.

12.6. Other adverse effects Not available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods Do not use the empty containers.
Waste disposal according to the Directive 2008/98/EC in its latest versions by incineration or dispose of waste material

SECTION 14: Transport information

	ADR	ADN/ADNR	IMDG	ICAO
14.1. UN number	Not applicable			
14.2. UN proper shipping name	Not applicable			
14.3. Transport hazard class(es)	Not applicable		Not applicable	Not applicable
14.4. Packing group	Not applicable		Not applicable	Not applicable
14.5. Environmental hazards	Not available	Not available	Not available	Not available
14.6. Special precautions for user	Not available			
14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not available			

Other information	Not available	Not available	Not available	Not available

SECTION 15: Regulatory information

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

Authorizations and/or restrictions on use:

This Safety Data Sheet classification and labeling have been determined according to the (EC) No. 1272-2008 "Classification, Labeling and Packaging" regulation; as well as the EU Directives 67/548/EEC and 1999/45/EC and take into account the intended product use.

15.2 Chemical safety assessment

A Chemical Safety Assessment has not been carried out for this product.

SECTION 16: Other information

16.1. Indication of changes

Revision date: 23.05.2024

16.2. Key or legend to abbreviate

ions and acronyms

ADN/ADNR: Regulations concerning the transport of dangerous substances in barges on inland waterways.
ADR/RID: European Agreement concerns the International Carriage of Dangerous Goods by Road/ Regulations concerning the international carriage of dangerous goods by rail.
CAS No.: Chemical Abstract Service Number
CLP: Classification, Labelling and Packaging

16.3. Key literature references and sources for data

No data available.

16.4. Procedure used to derive the classification according to regulation (EC) n°1272/2008 (CLP)

Classification of the mixture is consistent with the method of valuation of regulation (EC) n°1272/2008.

16.5. List of relevant hazard statements and/or precautionary statements. (Full text of any statements which are not written out in full under section 3)

Not applicable.

16.6. Advice on any training appropriate for workers to ensure protection of human health and the environment

No data available

Disclaimer: We believe the statements, technical information and recommendations contained herein are reliable, but they are given without warranty or guarantee of any kind. The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. It is the user's responsibility to satisfy oneself as to the suitability and completeness of this information for the user's own particular use.

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name STOPPING SOLUTION (Sulfuric acid, oil of vitriol)

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

Relevant identified uses	To be used as a component with ELISA kits according to the instructions provided with the kit.
Uses advised against	Not available

1.3. Details of the supplier of the safety data sheet

Name	LDN Labor Diagnostika Nord GmbH & Co. KG
Address	Am Eichenhain 1 48531 Nordhorn, Germany
Telephone	+49 5921 81970
Telefax	+49 5921 8197201
Contact email	support@ldn.de

1.4. Emergency telephone number

Telephone	+49 5921 8197 0 (during opening time: 8:00 h – 16:00 h)

SECTION 2: Hazards identification

2.1. Classification according to the regulation (EC) n°1272/2008 (CLP) and its amendments

Skin Irrit. 2	H315 Causes skin irritation.
Eye Irrit. 2	H319 Causes serious eye irritation.

2.2. Label elements according to the regulation (EC) n°1272/2008 (CLP) and its amendments

Danger symbol

Signal word	Warning
Product Identifier	Sulfuric Acid, 5.32% v/v
Danger	H315 Causes skin irritation. H319 Causes serious eye irritation.
Supplemental Hazard Information	-
Prevention statements	P264 Wash exposed skin thoroughly after handling. P280 Wear protective gloves, protective clothing, eye protection, face protection.
Response statements	P302+P350 IF ON SKIN: Gently wash with plenty of soap and water. P332+P313 If skin irritation occurs: Get medical advice/attention. P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Storage statements	-
Disposal statements	P501 Dispose of contents/container to comply with local, state and federal regulations.

2.3. Other hazards

Results of PBT and vPvB evaluation:

- PBT: Not applicable
- vPvB: Not applicable

SECTION 3 : Composition/information on ingredients

Name	(% w/w)	Classification	Specific concentration limits

Sulfuric acid ...%* CAS: 7664-93-9 EC: 231-639-5 Index number: 016-020-00-8	< 10%	Skin Corr. 1A, H314	Skin Corr. 1A; H314: C ≥ 15% Eye Irrit. 2; H319: 5% ≤ C < 15% Skin Irrit. 2; H315: 5% ≤ C < 15%

*__Note B__: *Some substances (acids, bases, etc.) are placed on the market in aqueous solutions at various concentrations and, therefore, these solutions require different classification and labelling since the hazards vary at different concentrations. In Part 3 entries with Note B have a general designation of the following type: 'nitric acid …%'. In this case the supplier must state the percentage concentration of the solution on the label. Unless otherwise stated, it is assumed that the percentage concentration is calculated on a weight/weight basis.*

SECTION 4 : First aid measures

4.1. Description of first aid measures

General information: In general, in case of doubt or if symptoms persist, always call a doctor. Never give anything by mouth to an unconscious person.

Following inhalation: If person experiences nausea, headache or dizziness, person should stop work immediately and move to fresh air until these symptoms disappear. If breathing is difficult, administer oxygen by a qualified person, keep the person warm and at rest. Call a physician. In the event that an individual inhales enough vapour to lose consciousness, person should be moved to fresh air at once and a physician should be called immediately. If breathing has stopped, artificial respiration should be given immediately. In all case, ensure adequate ventilation and provide respiratory protection before the person returns to work.

Following skin contact: IF ON SKIN (or hair): Remove contaminated clothing. Rinse skin with water / with vegetable oil. Take a shower.
If irritation or rash occurs: Get medical advice.

Following eye contact: IF IN EYES: Rinse cautiously with vegetable oil for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/attention.

Following ingestion: IF SWALLOWED: Rinse thoroughly mouth with water. Immediately call a POISON CENTER/doctor.
Do NOT induce vomiting.

For emergency responders: No data available.

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

Symptoms: No data available.

Effects: No data available.

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

Treat according to symptoms

SECTION 5 : Firefighting measures

5.1. Extinguishing media

Appropriated: Use water spray or other suitable agent on fires adjacent to non-leaking tanks or intact containers of acid. If only a small amount of combustibles is present, smother fire with dry chemical.

Small fire: Dry powder or CO2. Move containers from fire area, if it can be done without risk.
Large fire: Flood fire area with large quantities of water, while knocking down vapours with water fog. Cool containers with flooding quantities of water until well after fire is out. Do not get water inside containers. Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.

Non-appropriated: Do not use solid water streams near ruptured tanks or spills of sulfuric acid.

5.2. Special hazards arising from the substance or mixture

Acid reacts violently with water and can spatter acid onto personnel.
Reacts with most metals, especially when diluted: Hydrogen gas release, which is extremely flammable and explosive. Risk of explosion if acid combines with water, organic materials or base solutions in enclosed spaces. Mixing acids of different strengths/concentrations can also pose an explosive risk in an enclosed space/container.

5.3. Advice for firefighters

Add chemical safety goggles if eye protection is not provided.
Wear full protective clothing.
Evacuate personnel to a safe area. Keep personnel removed and upwind of fire. Wear full protective clothing. Neutralize run-off with lime, soda ash, to prevent corrosion of metals and formation of hydrogen gas. Wear self-contained breathing apparatus if fumes or mists are present.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Evacuate all personnel from danger area.
Use required personal protective equipment.
Remove sources of ignition.
DO NOT smoke.
Stop flow if possible.

6.2. Environmental precautions

Avoid release to the environment.
Avoid contamination of drains, surface water and groundwater.

6.3. Methods and material for containment and cleaning up

SMALL SPILL: Soak up with dry sand, clay or diatomaceous earth.

LARGE SPILL: Dike. Cautiously dilute and neutralize with lime or soda ash. Adequate ventilation is required during neutralization due to release of CO2 gas. Transfer to waste water treatment system. Prevent liquid from entering sewers, waterways. Product not recovered or sent as waste for treatment should be reported to authorities.

6.4. Reference to other sections

Refer to sections: 7 safe handling, 8 for personal protective equipments, 13 for disposal.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

DO NOT get in eyes, on skin, or on clothing.
DO NOT ingest: Avoid breathing vapours or mist.
Wear approved respirators if ventilation is not adequate.
No eating, drinking and smoking when handling the product.
Wash hands thoroughly after handling.
NEVER add water to acid.

7.2. Conditions for safe storage, including any incompatibilities

Store in a cool, well-ventilated area, away from incompatible substances. Protect from physical damage.
Keep out of sun and away from heat (more than 275 °C).
If stored in metal containers, vapours can contain explosive hydrogen gas.
Do not smoke in storage area.

7.3. Specific end use(s)

No data available.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Components with critical values that require monitoring at the workplace:
Sulfuric acid:
Limit value (8h): 1 mg/m^3
Limit value (Short term): 3 mg/m^3

8.2. Exposure controls

Appropriate engineering controls

Good general ventilation should be provided to keep vapour and mist concentrations below the exposure limits.

Eye/face protection: Wear safety glasses with non-perforated shields. Add a face shield (close-fitting) if pouring liquid. For leak, spills emergency or heavy handling, use chemical safety goggles or a full face shield. Do not wear contact lenses.

Respiratory protection: Not required when using a closed ventilation system. If acid concentration is above 1 mg/m^3, wear a gas mask with acid gas canister equipped with particulate filter. If the concentration is higher than 10 mg/m3, use an efficiency particulate respirator, or self-contained breathing apparatus with full face piece.

Other: Wear acid resistant gloves (preferably rubber), boots; long sleeve wool, acrylic, or polyester clothing under an acid proof suit. Trouser legs should be outside boots. An apron can be used in place of acid proof suit in laboratory environment, or in handling small volumes of sulphuric acid. In case of emergency, wear a complete acid suit with hood, boots, and gloves with respiratory protection.

Environmental exposure controls

Avoid release to the environment

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Liquid Viscous
Color	Colorless
Odour	Not available
Odor threshold	Not available
pH	<1
Melting / Freezing point	-14°C
Boiling point	308°C
Flash point	Not applicable
Evaporation rate	<1
Flammability	Not available
Lower limit of flammability or explosive	Not applicable
Upper limit of flammability or explosive	Not applicable
Vapour pressure	<0.001 mmHg @ 20°C
Vapour density	3.4 (air = 1)
Relative density	1.84
Water solubility	Miscible
Solubility in other Solvents	Not available
Log Kow	Not available
Auto-inflammability temperature	Not applicable
Decomposition temperature	Not available
Viscosity	Not available
Explosive properties	Not available
Oxidizing properties	Not available
Refractive index	Not available

9.2. Other information

No data available.

SECTION 10: Stability and reactivity

10.1. Reactivity Reacts violently with water, organic substances and base solutions with evolution of heat.

10.2. Chemical stability Stable.

10.3. Possibility of hazardous reactions Under normal conditions of stock and use, hazardous reactions will not occur.

10.4. Conditions to avoid Not available.

10.5. Incompatible materials Vigorous reactions with: water, alkaline solutions, metals, carbides, chlorates, fulminates, nitrates, picrates, strong oxidizing, reducing or combustible organic materials. Hazardous gases are evolved on contact with chemicals such as cyanides, sulfides and carbides.

10.6. Hazardous decomposition products Temperatures of ≥ 275° yield sulphur trioxide gas, which is toxic, corrosive and an oxidizer

SECTION 11: Toxicological information

Acute toxicity: Highly toxic. Erosion of teeth, lesions of the skin, bronchitis, mouth inflammation, conjunctivitis, gastritis.

LD50 (rat-oral) = 2140 mg/kg
LC50 (mouse-ihl) = 160 mg/m^3 (4hrs)
LC50 (rat-ihl) = 255 mg/m^3 (4 hrs)

Inhalation: Highly toxic by inhalation of fumes or acid mist. Causes irritations or corrosive burns to the upper respiratory system, including nose, mouth, and throat. Lung irritation and pulmonary edema can also occur.

Ingestion	Can cause irritation and corrosive burns to mouth, throat, and stomach. Can be fatal if swallowed. Risk of vomiting, diarrhea, oesophagus and stomach perforation.
Skin corrosion	Can cause severe burns and destruction of tissue. May cause destruction of the dermis with impairment of the skin at site of contact to regenerate.
Eye damage	Extremely corrosive! Liquid contact causes irritation, corneal burns, and conjunctivitis. Blindness may result, or severe or permanent injury. Mist contact may irritate or burn.
Respiratory sensibilisation	Not available.
Germ cell mutagenicity	Not identified as a mutagen.
Carcinogenicity	Suspected in humans.
Toxic for reproduction	Not identified as toxic for reproduction.
Unique specific toxicity	Not available.
Repeated specific toxicity	Not available.
Aspiration hazard	Not available.
Other information	Practical experience: none. General notes: The classification was made according to the calculation procedure of the preparation and harmonized classification.

SECTION 12: Ecological information

12.1. Toxicity	Toxicity to aquatic life increases with lowering of pH.
12.2. Persistence and degradability	Not available.
12.3. Bioaccumulative potential	Sulfate ion: Ubiquitous in the environment. Metabolized by micro-organisms and plants without bioaccumulation.
12.4. Mobility in soil	Easy soil seeping under rain action.
12.5. Results of PBT and vPvB assessment	Not available.
12.6. Other adverse effects	Due to the product's composition, particular attention must be taken for transportation and storage. Protect from rain because the run-off water will become acidic and may be harmful to flora and fauna.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Do not use the empty containers.
Waste disposal according to the Directives EC 75/442/EEC and 91/689/EEC in their latest versions by incineration or dispose of waste material

13.2. Waste code numbers/Waste identification

No data available.

SECTION 14: Transport information

	ADR	ADN/ADNR	IMDG	ICAO
14.1. UN number	Not applicable			
14.2. UN proper shipping name	Not applicable			
14.3. Transport hazard class(es)	Not applicable		Not applicable	Not applicable
14.4. Packing group	Not applicable		Not applicable	Not applicable
14.5. Environmental hazards	Not available	Not available	Not available	Not available
Hazard label	Not applicable			
Classification code	Not applicable			
14.6. Special precautions for user	Not available			
14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not available			
Other information	Not available	Not available	Not available	

SECTION 15: Regulatory information

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

15.2. Chemical safety assessment

No data available

SECTION 16: Other information

16.1. Indication of changes

Revision date: 23.05.2024

16.2. Key or legend to abbreviations and acronyms

ADN/ADNR: Regulations concerning the transport of dangerous substances in barges on inland waterways.
ADR/RID: European Agreement concerns the International Carriage of Dangerous Goods by Road/ Regulations concerning the international carriage of dangerous goods by rail.

CAS No.: Chemical Abstract Service Number
CLP: Classification, Labelling and Packaging

16.3. Key literature references and sources for data

No data available.

16.4. Procedure used to derive the classification according to regulation (EC) n°1272/2008 (CLP)

Classification of the mixture is consistent with the method of valuation of regulation (EC) n°1272/2008.

16.5. List of relevant hazard statements and/or precautionary statements. (Full text of any statements which are not written out in full under section 3)

Hazard statements (H):
H314 Causes severe skin burns and eye damage.

16.6. Advice on any training appropriate for workers to ensure protection of human health and the environment

No data available

The information given in this Safety Data Sheet is based on our present knowledge and on European and national regulations. This Safety Data Sheet describes safety requirements relative to identified uses, it doesn't guarantee all the product properties particularly in the case of non-identified uses. The product mustn't be used for any uses other than those identified under heading 1. Since the user's working conditions are not known by us, it is the responsibility of the user to take all necessary measures to comply with legal requirements for specific uses and avoid negative health effects.

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name	: TMB SUBSTRATE
Product form	: Mixture

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

Main use category	: Industrial use
Use of the substance/mixture	: To be used as a component with ELISA kits according to the instructions provided with the kit.
Restrictions on use	: For laboratory use only

1.3. Details of the supplier of the safety data sheet

Name	LDN Labor Diagnostika Nord GmbH & Co. KG
Address	Am Eichenhain 1 48531 Nordhorn, Germany
Telephone	+49 5921 81970
Telefax	+49 5921 8197201
Contact email	support@ldn.de

1.4. Emergency telephone number

Telephone	+49 5921 8197 0 (during opening time: 8:00 h – 16:00 h)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Not classfied.

Adverse physicochemical, human health and environmental effects

No additional information available.

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

EUH-statements	: EUH-statements

2.3. Other hazards

Other hazards not contributing to the classification	: Contains oxidizing substance(s) at <0.5%.

SECTION 3 : Composition/information on ingredients

3.1. Substances

Not applicable.

3.2. Mixtures

Name	Product Identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
2-Pyrrolidinone	(CAS-No.) 616-45-5 (EC-No.) 210-483-1	1 - 6	Acute Tox. 4 (Oral), H302 Eye Irrit. 2, H319
Urea, compound with hydrogen peroxide (H2O2) (1:1)	(CAS-No.) 124-43-6 (EC-No.) 204-701-4	< 0.4	Ox. Sol. 3, H272 Skin Irrit. 2, H315 Eye Dam. 1, H318

Full text of H-statements: see section 16.

SECTION 4 : First aid measures

4.1. Description of first aid measures

First-aid measures after inhalation : If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical advice/attention if you feel unwell.

First-aid measures after skin contact : If skin irritation occurs: Wash skin with mild soap and water. Obtain medical attention if irritation persists.

First-aid measures after eye contact : 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.

First-aid measures after ingestion : Do NOT induce vomiting. Rinse mouth. Never give anything by mouth to an unconscious person. Get medical advice/attention if you feel unwell.

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

Symptoms/effects after inhalation : May cause irritation to the respiratory tract.

Symptoms/effects after skin contact : May cause skin irritation. Repeated exposure may cause skin dryness or cracking.

Symptoms/effects after eye contact : May cause eye irritation. Symptoms may include discomfort or pain, excess blinking and tear production, with possible redness and swelling.

Symptoms/effects after ingestion : May be harmful if swallowed. May cause gastrointestinal irritation, nausea, vomiting and diarrhea.

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

Symptoms may be delayed. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : Use extinguishing media appropriate for surrounding fire.

Unsuitable extinguishing media : None known.

5.2 Special hazards arising from the substance or mixture

Fire hazard : Products of combustion may include, and are not limited to: oxides of carbon. Contains oxidising substance(s) at <0.5%.

5.3. Advice for firefighters

Protection during firefighting	:	Keep upwind of fire. Wear full fire fighting turn-out gear (full Bunker gear) and respiratory protection (SCBA).

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures	:	Use personal protection recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel.

6.1.1. For non-emergency personnel

No additional information available.

6.1.2. For emergency responders

No additional information available.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Do not allow to enter drains or water courses.

6.3. Methods and material for containment and cleaning up

For containment	:	Absorb and/or contain spill with inert material (sand, vermiculite or other appropriate material), then place in suitable container. Do not flush into surface water or sewer system. Wear recommended personal protective equipment.
Methods for cleaning up	:	Sweep or shovel spills into appropriate container for disposal. Provide ventilation. Flush contaminated areas with plenty of water.

6.4. Reference to other sections

For further information refer to section 8: "Exposure controls/personal protection".

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling	:	Avoid contact with eyes, skin and clothing. Avoid breathing dust/fume/gas/mist/vapours/spray. Do not swallow. Handle and open container with care. When using do not eat, drink or smoke. Provide adequate ventilation. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required.
Hygiene measures	:	Wash contaminated clothing before reuse. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions	:	Keep out of the reach of children. Keep container tightly closed. Store in a dry, cool and well-ventilated place. Store in correctly labelled container. Keep away from food, drink and animal feeding stuffs. The TMB Substrate is sensitive to light and should always be stored in dark bottles away from direct sunlight.

7.3. Specific end use(s)

Not available.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available.

8.2. Exposure controls

Appropriate engineering controls:
Ensure good ventilation of the work station. Provide readily accessible eye wash stations and safety showers.

Hand protection:
Chemical resistant gloves (according to European standard NF EN 374 or equivalent)

Eye protection:
Safety eyewear complying with an approved standard such as the European Standard EN166 should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.

Skin and body protection:
Wear suitable protective clothing

Respiratory protection:
In case of insufficient ventilation, wear suitable respiratory equipment. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Environmental exposure controls:
Avoid release to the environment.

Other information:
Handle in accordance with good industrial hygiene and safety procedures. Do not eat, drink or smoke when using this product.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Appearance	: Liquid
Colour	: Clear/ light blue
Odour	: Characteristic
Odour threshold	: No data available
pH	: 3.1 – 3.5
Relative evaporation rate (butylacetate=1)	: No data available
Melting point	: No data available
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: Not flammable
Vapour pressure	: No data available
Relative vapour density at 20 °C	: No data available
Relative density	: No data available
Solubility	: Soluble in water
Partition coefficient n-octanol/water	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: No data available

9.2. Other information

No additional information available.

SECTION 10: Stability and reactivity

10.1. Reactivity
No dangerous reactions known under normal conditions of use.

10.2. Chemical stability
Stable under normal conditions.

10.3. Possibility of hazardous reactions
No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid
Incompatible materials. Extreme temperatures.

10.5. Incompatible materials
Combustible materials. Strong oxidizing agents.

10.6. Hazardous decomposition products
May include, and are not limited to: oxides of carbon.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity (oral) : Not classified.
Acute toxicity (dermal) : Not classified.
Acute toxicity (inhalation) : Not classified.

2-Pyrrolidinone (616-45-5)	
LD50 oral rat	328 mg/kg
LD50 dermal rabbit	> 2000 mg/kg
LC50 inhalation rat	> 80 ppm (Exposure time: 8 h)

Skin corrosion/irritation : Not classified.
pH: 3.1 – 3.5
Additional information : Based on available data, the classification criteria are not met.
Serious eye damage/irritation : Not classified.
pH: 3.1 – 3.5
Additional information : Based on available data, the classification criteria are not met.
Respiratory or skin sensitisation : Not classified.
Additional information : Based on available data, the classification criteria are not met.
Germ cell mutagenicity : Not classified.
Additional information : Based on available data, the classification criteria are not met.
Carcinogenicity : Not classified.
Additional information : Based on available data, the classification criteria are not met.
Reproductive toxicity : Not classified.
Additional information : Based on available data, the classification criteria are not met.
STOT-single exposure : Not classified.
Additional information : Based on available data, the classification criteria are not met.
STOT-repeated exposure : Not classified.

Additional information	:	Based on available data, the classification criteria are not met.
Aspiration hazard	:	Not classified.
Additional information	:	Based on available data, the classification criteria are not met.
Other information	:	Likely routes of exposure: ingestion, inhalation, skin and eye.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general	:	May cause long-term adverse effects in the aquatic environment.
Unknown hazards to the aquatic environment (CLP)	:	Contains 0.4 % of components with unknown hazards to the aquatic environment.
Hazardous to the aquatic environment, short-term (acute)	:	Not classified.
Hazardous to the aquatic environment, long-term (chronic)	:	Not classified.

2-Pyrrolidinone (616-45-5)	
LC50 fish 1	4600 – 10000 mg/l (Exposure time: 96 h - Species: Brachydanio rerio [static])
EC50 72h algae (1)	250 mg/l (Species: Desmodesmus subspicatus)
EC50 96h algae (1)	84 mg/l (Species: Desmodesmus subspicatus)

12.2. Persistence and degradability

TMB Substrate	
Persistence and degradability	Not established.

12.3 Bioaccumulative potential

TMB Substrate	
Bioaccumulative potential	Not established.

2-Pyrrolidinone (616-45-5)	
Partition coefficient n-octanol/water	-0.71 (at 25°C)

12.4 Mobility in soil

No additional information available.

12.5 Results of PBT and vPvB assessment

No additional information available.

12.6 Other adverse effects

Additional information : No other effects known.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product/Packaging disposal recommendations : Dispose in a safe manner in accordance with local/national regulations. Do not reuse container. Recycle empty containers where allowed.

SECTION 14: Transport information

In accordance with ADR.

14.1 UN number

UN-No. (ADR) : Not regulated

14.2 UN proper shipping name

Proper Shipping Name (ADR) : Not regulated

14.3 Transport hazard class(es)

ADR

Transport hazard class(es) (ADR) : Not regulated

14.4 Packing group

Packing group (ADR) : Not regulated

14.5 Environmental hazards

Dangerous for the environment : No

Other information : No supplementary information available.

14.6 Special precautions for user

Special transport precautions : Do not handle until all safety precautions have been read and understood.

Overland transport : Not regulated.

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

Not applicable.

SECTION 15: Regulatory information

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

15.1.1.EU-Regulations

Contains no REACH substances with Annex XVII restrictions
Contains no REACH candidate substance.
Contains no REACH Annex XIV substances
Contains no substance subject to Regulation (EU) No 649/2012 of the European Parliament and of the Council of 4 July 2012 concerning the export and import of hazardous chemicals.
Contains no substance subject to Regulation (EU) No 2019/1021 of the European Parliament and of the Council of 20 June 2019 on persistent organic pollutants

15.1.2. National regulations

No additional information available.

15.2. Chemical safety assessment

No chemical safety assessment has been carried out

SECTION 16: Other information

16.1. Indication of changes

Revision date: 23.05.2024

16.2. Abbreviations and acronyms

°C – Degrees Celsius
°F – Degrees Fahrenheit
ADR – European Agreement concerning the International Carriage of Dangerous Goods by Road.
ACGIH – American Conference of Governmental Industrial Hygienists
ATE – Acute Toxicity Estimate
BCF – Bioconcentration Factor
BEI – Biological Exposure Index
CAS – Chemical Abstracts Service
CLP – Regulation (EC) No 1272/2008 on the Classification, Labeling and Packaging of substances and mixtures.
cP – centipoise (unit of dynamic viscosity)
cSt – centistokes (unit of kinematic viscosity)
DNEL – Derived No-effect Level
EC50 – Half maximal effective concentration
ECHA – European Chemicals Agency
EC-No. – European Community number
EU – European Union
GHS – Globally Harmonized System of Classification and Labelling of Chemicals
h – Hours
IATA – International Air Transport Association
IDLH – Immediately Dangerous to Life or Health
IMDG – International Maritime Dangerous Goods
IOELV – Indicative Occupational Exposure Limit Value
kPa – kilopascal
Kow – Octanol-Water Partition Coefficient
LC50 – Median Lethal Concentration
LD50 – Median Lethal Dose
mg/l – Milligram per liter
mg/kg – Milligram per kilogram
mg/m3 – Milligram per cubic meter
Min – Minutes
NIOSH – National Institute for Occupational Safety and Health
NOEC – No Observed Effect Concentration
N.O.S. – Not Otherwise Specified
OEL – Occupational Exposure Limit
PBT - Persistent, Bioaccumulative and Toxic
ppm – Parts per million
PVC – Polyvinyl chloride
REACH - Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006
RID – European Agreement concerning the International Carriage of Dangerous Goods by Rail
SDS – Safety Data Sheet
STEL – Short Term Exposure Limit
TLV – Threshold Limit Value
TWA – Time Weighted Average
UN – United Nations
vPvB - Very Persistent and Very Bioaccumulative

16.3. Key literature references and sources for data

REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

16.4. Full text of H- and EUH-statements:

Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4

Eye Dam. 1	Serious eye damage/eye irritation, Category 1
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
Ox. Sol. 3	Oxidising Solids, Category 3
Skin Irrit. 2	Skin corrosion/irritation, Category 2
H272	May intensify fire; oxidiser.
H302	Harmful if swallowed.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
EUH210	Safety data sheet available on request.

Disclaimer: We believe the statements, technical information and recommendations contained herein are reliable, but they are given without warranty or guarantee of any kind. The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. It is the user's responsibility to satisfy oneself as to the suitability and completeness of this information for the user's own particular use.

The information given in this Safety Data Sheet is based on our present knowledge and on European and national regulations. This Safety Data Sheet describes safety requirements relative to identified uses, it does not guarantee all the product properties particularly in the case of non-identified uses. The product must not be used for any uses other than those identified under heading 1. Since the user's working conditions are not known by us, it is the responsibility of the user to take all necessary measures to comply with legal requirements for specific uses and avoid negative health effects.

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name WASH BUFFER CONCENTRATE

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

Relevant identified uses	To be used as a component with ELISA kits according to the instructions provided with the kit.
Uses advised against	Not available

1.3. Details of the supplier of the safety data sheet

Name	LDN Labor Diagnostika Nord GmbH & Co. KG
Address	Am Eichenhain 1 48531 Nordhorn, Germany
Telephone	+49 5921 81970
Telefax	+49 5921 8197201
Contact email	support@ldn.de

1.4. Emergency telephone number

Telephone	+49 5921 8197 0 (during opening time: 8:00 h – 16:00 h)

SECTION 2: Hazards identification

2.1. Classification according to the regulation (EC) n°1272/2008 (CLP) and its amendments

The mixture is not classified as dangerous in accordance with the regulation (EC) n°1272/2008.

2.2. Label elements according to the regulation (EC) n°1272/2008 (CLP) and its amendments

Danger symbol	None
Signal word	None
Product Identifier	None
Danger	None
Supplemental Hazard Information	None
Prevention statements	None
Response statements	None
Storage statements	None
Disposal statements	None

2.3. Other hazards

Results of PBT and vPvB evaluation:

- PBT: Not applicable
- vPvB: Not applicable

SECTION 3 : Composition/information on ingredients

No substances fulfill the criteria set forth in annex II section A of the REACH regulation (EC) n°1907/2006.

SECTION 4 : First aid measures

4.1. Description of first aid measures

General information	In general, in case of doubt or if symptoms persist, always call a doctor. Never give anything by mouth to an unconscious person.
Following inhalation	Move victim to fresh air. If not breathing, apply artificial respiration. If breathing difficult, give oxygen. Consult a physician if you feel unwell.
Following skin contact	IF ON SKIN (or hair): Immediately remove contaminated clothing. Rinse skin with water / with vegetable oil. Take a shower. If irritation or rash occurs: Get medical advice.

Following eye contact	IF IN EYES: Rinse cautiously with vegetable oil for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
Following ingestion	IF SWALLOWED: Rinse thoroughly mouth with water. Immediately call a POISON CENTER/doctor. Do NOT induce vomiting.
For emergency responders	No data available.

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

Symptoms	No data available.
Effects	No data available.

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

Treat according to symptoms

SECTION 5 : Firefighting measures

5.1. Extinguishing media

Appropriated: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Dry powder, carbone dioxide, water spray or regular foam.

Inappropriated: No data available.

5.2. Special hazards arising from the substance or mixture

No data available.
Hazardous combustion products: carbon oxides and nitrogen oxides.

5.3. Advice for firefighters

Wear appropriate apparatus of breathing and protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Evacuate all personnel from danger area.
Use required personal protective equipment.
Ensure adequate ventilation, especially in confined areas.

6.2. Environmental precautions

Avoid release to the environment.
Avoid contamination of drains, surface water and groundwater.

6.3. Methods and material for containment and cleaning up

Contain and collect spillage.
Use an absorbent material such as sand, ground, vermiculite, ground diatoms for waste disposal and prevention of penetration in sewers or rivers.

6.4. Reference to other sections

Refer to sections: 7 safe handling, 8 for personal protective equipments, 13 for disposal

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities

Keep containers tightly closed in a dry, cool and well-ventilated place.

7.3. Specific end use(s)

No data available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

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

8.2. Exposure controls

Appropriate engineering controls	Showers. Eyewash stations. Ventilation systems. Eye/body protection: Wear protective safety glasses/gloves/clothing is recommended. Respiratory protection: Generally not necessary in well ventilated areas (unless otherwise stated). Ensure adequate ventilation. Hygiene measures: Do not drink, eat or smoke near the product. Wash hands before and after handling.
Environmental exposure controls	Avoid release to the environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Not available.
Color	Not available.
Odour	Not available.
Odor threshold	Not available.
pH	Not available.
Melting / Freezing point	Not available.
Boiling point	Not available.
Flash point	Not available.
Evaporation rate	Not available.
Flammability	Not available.
Lower limit of flammability or explosive	Not available.
Upper limit of flammability or explosive	Not available.
Vapour pressure	Not available.
Vapour density	Not available.
Relative density	Not available.
Water solubility	Not available.
Solubility in other Solvents	Not available.
Log Kow	Not available.
Auto-inflammability temperature	Not available.
Decomposition temperature	Not available.

Viscosity	Not available.
Explosive properties	Not available.
Oxidizing properties	Not available.
Refractive index	Not 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 recommended storage conditions.
10.3. Possibility of hazardous reactions	None under normal processing.
10.4. Conditions to avoid	Extremes of temperature and direct sunlight.
10.5. Incompatible materials	Strong oxidizing agents. Bases
10.6. Hazardous decomposition products	Not available.

SECTION 11: Toxicological information

Acute toxicity	**Sodium chloride:** LD50 (oral, rat) = 3,000 mg/kg LD50 (dermal, rabbit) > 10,000 mg/kg LC50 (inhalation, rat) > 42,000 mg/m^3 (1h) **Tris (hydroxymethyl)aminomethane:** LD50 (oral, rat) = 5,900 mg/kg
Skin corrosion	No data available.
Eye damage	No data available.
Respiratory sensibilisation	No data available.
Germ cell mutagenicity	No data available.
Carcinogenicity	No data available.
Toxic for reproduction	No data available.
Unique specific toxicity	No data available.
Repeated specific toxicity	No data available.
Aspiration hazard	No data available.
Other information	No data available.

SECTION 12: Ecological information

12.1. Toxicity No data available.

12.2. Persistence and degradability No data available.

12.3. Bioaccumulative potential No data available.

12.4. Mobility in soil No data available.

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

12.6. Other adverse effects No data available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods No data available.

SECTION 14: Transport information

	ADR	ADN/ADNR	IMDG	ICAO
14.1. UN number	N/A			
14.2. UN proper shipping name	N/A			
14.3. Transport hazard class(es)	N/A		N/A	N/A
14.4. Packing group	N/A		N/A	N/A
14.5. Environmental hazards	N/A	N/A	N/A	N/A
14.6. Special precautions for user	N/A			
14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	N/A			
Other information	N/A	N/A	N/A	N/A

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture
No data available

15.2. Chemical safety assessment
No data available

SECTION 16: Other information

16.1. Indication of changes

Revision date: 23.05.2024

16.2. Key or legend to abbreviations and acronyms

ADN/ADNR: Regulations concerning the transport of dangerous substances in barges on inland waterways.
ADR/RID: European Agreement concerns the International Carriage of Dangerous Goods by Road/ Regulations concerning the international carriage of dangerous goods by rail.
CAS No.: Chemical Abstract Service Number
CLP: Classification, Labelling and Packaging

16.3. Key literature references and sources for data

No data available

16.4. Procedure used to derive the classification according to regulation (EC) n°1272/2008 (CLP)

Classification of the mixture is consistent with the method of valuation of regulation (EC) n°1272/2008.

16.5. List of relevant hazard statements and/or precautionary statements. (Full text of any statements which are not written out in full under section 3)

Hazard statements (H): None

16.6. Advice on any training appropriate for workers to ensure protection of human health and the environment

No data available

The information given in this Safety Data Sheet is based on our present knowledge and on European and national regulations. This Safety Data Sheet describes safety requirements relative to identified uses, it doesn't guarantee all the product properties particularly in the case of non-identified uses. The product mustn't be used for any uses other than those identified under heading 1. Since the user's working conditions are not known by us, it is the responsibility of the user to take all necessary measures to comply with legal requirements for specific uses and avoid negative health effects.