

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Version 7.3  
Revision Date 07.06.2023  
Print Date 02.05.2025

GENERIC EU MSDS - NO COUNTRY SPECIFIC DATA - NO OEL DATA

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

### 1.1 Product identifiers

Product name : Piperazine, United States Pharmacopeia (USP) Reference Standard

Product Number : 1541601

Brand : US Pharmacopeia

Index-No. : 612-057-00-4

REACH No. : A registration number is not available for this substance as the substance or its uses are exempted from registration, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.

CAS-No. : 110-85-0

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

Identified uses : Laboratory chemicals, Manufacture of substances

### 1.3

### 1.4 Emergency telephone

Emergency Phone # : 000 800 1007 141 (CHEMTREC)

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

#### Classification according to Regulation (EC) No 1272/2008

Flammable solids (Category 1), H228  
Skin corrosion (Sub-category 1B), H314  
Serious eye damage (Category 1), H318  
Respiratory sensitization (Sub-category 1B), H334  
Skin sensitization (Sub-category 1B), H317

Reproductive toxicity (Category 2), H361fd

For the full text of the H-Statements mentioned in this Section, see Section 16.

## 2.2 Label elements

### Labelling according Regulation (EC) No 1272/2008

Pictogram

|                                |                                                                                                                                  |
|--------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| Signal Word                    | Danger                                                                                                                           |
| Hazard statement(s)            |                                                                                                                                  |
| H228                           | Flammable solid.                                                                                                                 |
| H314                           | Causes severe skin burns and eye damage.                                                                                         |
| H317                           | May cause an allergic skin reaction.                                                                                             |
| H334                           | May cause allergy or asthma symptoms or breathing difficulties if inhaled.                                                       |
| H361fd                         | Suspected of damaging fertility. Suspected of damaging the unborn child.                                                         |
| Precautionary statement(s)     |                                                                                                                                  |
| P210                           | Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.                                   |
| P260                           | Do not breathe dust.                                                                                                             |
| P280                           | Wear protective gloves/ protective clothing/ eye protection/ face protection.                                                    |
| P303 + P361 + P353             | IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.                                     |
| P304 + P340 + P310             | IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.             |
| P305 + P351 + P338             | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| Supplemental Hazard Statements | none                                                                                                                             |

### Reduced Labeling (<= 125 ml)

Pictogram

|                            |                                                                               |
|----------------------------|-------------------------------------------------------------------------------|
| Signal Word                | Danger                                                                        |
| Hazard statement(s)        |                                                                               |
| H314                       | Causes severe skin burns and eye damage.                                      |
| H334                       | May cause allergy or asthma symptoms or breathing difficulties if inhaled.    |
| H317                       | May cause an allergic skin reaction.                                          |
| H361fd                     | Suspected of damaging fertility. Suspected of damaging the unborn child.      |
| Precautionary statement(s) |                                                                               |
| P260                       | Do not breathe dust.                                                          |
| P280                       | Wear protective gloves/ protective clothing/ eye protection/ face protection. |
| P303 + P361 + P353         | IF ON SKIN (or hair): Take off immediately all contaminated                   |

|                                |                                                                                                                                                          |
|--------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| P304 + P340 + P310             | clothing. Rinse skin with water.<br>IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor. |
| P305 + P351 + P338             | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.                         |
| Supplemental Hazard Statements | none                                                                                                                                                     |

### 2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

## SECTION 3: Composition/information on ingredients

### 3.1 Substances

|                  |                                                 |
|------------------|-------------------------------------------------|
| Formula          | : C <sub>4</sub> H <sub>10</sub> N <sub>2</sub> |
| Molecular weight | : 86,14 g/mol                                   |
| CAS-No.          | : 110-85-0                                      |
| EC-No.           | : 203-808-3                                     |
| Index-No.        | : 612-057-00-4                                  |

| Component                                                      | Classification                                                                                                        | Concentration |
|----------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|---------------|
| <b>piperazine</b>                                              |                                                                                                                       |               |
| CAS-No. 110-85-0<br>EC-No. 203-808-3<br>Index-No. 612-057-00-4 | Flam. Sol. 1; Skin Corr. 1B; Eye Dam. 1; Resp. Sens. 1B; Skin Sens. 1B; Repr. 2; H228, H314, H318, H334, H317, H361fd | <= 100 %      |

For the full text of the H-Statements mentioned in this Section, see Section 16.

## SECTION 4: First aid measures

### 4.1 Description of first-aid measures

#### General advice

First aiders need to protect themselves. Show this material safety data sheet to the doctor in attendance.

#### If inhaled

After inhalation: fresh air. Call in physician.

#### In case of skin contact

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Call a physician immediately.

#### In case of eye contact

After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist. Remove contact lenses.

**If swallowed**

After swallowing: make victim drink water (two glasses at most), avoid vomiting (risk of perforation). Call a physician immediately. Do not attempt to neutralise.

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

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

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

No data available

---

**SECTION 5: Firefighting measures****5.1 Extinguishing media****Suitable extinguishing media**

Water Foam Carbon dioxide (CO<sub>2</sub>) Dry powder

**Unsuitable extinguishing media**

For this substance/mixture no limitations of extinguishing agents are given.

**5.2 Special hazards arising from the substance or mixture**

Carbon oxides

Nitrogen oxides (NO<sub>x</sub>)

Combustible.

Development of hazardous combustion gases or vapours possible in the event of fire.

**5.3 Advice for firefighters**

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

**5.4 Further information**

Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

---

**SECTION 6: Accidental release measures****6.1 Personal precautions, protective equipment and emergency procedures**

Advice for non-emergency personnel: Avoid inhalation of dusts. Avoid substance contact. Ensure adequate ventilation. Keep away from heat and sources of ignition. Evacuate the danger area, observe emergency procedures, consult an expert.

For personal protection see section 8.

**6.2 Environmental precautions**

Do not let product enter drains. Risk of explosion.

**6.3 Methods and materials for containment and cleaning up**

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up carefully. Dispose of properly. Clean up affected area. Avoid generation of dusts.

**6.4 Reference to other sections**

For disposal see section 13.

---

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

#### Advice on safe handling

Work under hood. Do not inhale substance/mixture.

#### Advice on protection against fire and explosion

Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.

#### Hygiene measures

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

For precautions see section 2.2.

### 7.2 Conditions for safe storage, including any incompatibilities

#### Storage conditions

Tightly closed. Keep away from heat and sources of ignition. Keep locked up or in an area accessible only to qualified or authorized persons.

#### Storage stability

Recommended storage temperature

2 - 8 °C

#### Storage class

Storage class (TRGS 510): 4.1B: Flammable solid hazardous materials

### 7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

---

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

#### Ingredients with workplace control parameters

#### Derived No Effect Level (DNEL)

| Application Area      | Routes of exposure | Health effect    | Value     |
|-----------------------|--------------------|------------------|-----------|
| Worker DNEL, longterm | inhalation         | Systemic effects | 0,1 mg/m3 |
| Worker DNEL, acute    | inhalation         | Systemic effects | 0,3 mg/m3 |
| Worker DNEL, longterm | inhalation         | Local effects    | 0,3 mg/m3 |
| Worker DNEL, acute    | inhalation         | Local effects    | 0,3 mg/m3 |
| Worker DNEL, longterm | dermal             | Systemic effects |           |
| Worker DNEL, acute    | dermal             | Systemic effects |           |
| Worker DNEL, longterm | oral               | Systemic effects |           |

**Predicted No Effect Concentration (PNEC)**

| Compartment                  | Value      |
|------------------------------|------------|
| Fresh water                  | 1,25 mg/l  |
| Sea water                    | 0,125 mg/l |
| Fresh water sediment         | 4,5 mg/kg  |
| Sea sediment                 | 0,45 mg/kg |
| Aquatic intermittent release | 1,25 mg/l  |
| Soil                         | 11,5 mg/kg |
| Sewage treatment plant       | 54 mg/l    |
| oral                         | 4,6 mg/kg  |

**8.2 Exposure controls****Personal protective equipment****Eye/face protection**

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Tightly fitting safety goggles

**Skin protection**

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

Full contact

Material: Nitrile rubber

Minimum layer thickness: 0,11 mm

Break through time: 480 min

Material tested: KCL 741 Dermatril® L

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0,11 mm

Break through time: 480 min

Material tested: KCL 741 Dermatril® L

**Body Protection**

Flame retardant antistatic protective clothing.

**Respiratory protection**

Recommended Filter type: Filter A-(P3)

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

**Control of environmental exposure**

Do not let product enter drains. Risk of explosion.

---

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

- |                                                 |                                                                                            |
|-------------------------------------------------|--------------------------------------------------------------------------------------------|
| a) Physical state                               | crystals                                                                                   |
| b) Color                                        | colorless                                                                                  |
| c) Odor                                         | weakly amine-like                                                                          |
| d) Melting point/freezing point                 | Melting point/range: 108 - 110 °C                                                          |
| e) Initial boiling point and boiling range      | 145 - 146 °C at 1.013 hPa                                                                  |
| f) Flammability (solid, gas)                    | The substance or mixture is a flammable solid with the category 1. - Flammability (solids) |
| g) Upper/lower flammability or explosive limits | Upper explosion limit: 14 %(V)<br>Lower explosion limit: 4 %(V)                            |
| h) Flash point                                  | Not applicable                                                                             |
| i) Autoignition temperature                     | 320 °C<br>at 1.013 hPa - DIN 51794                                                         |
| j) Decomposition temperature                    | No data available                                                                          |
| k) pH                                           | 12 at 150 g/l at 20 °C                                                                     |
| l) Viscosity                                    | Viscosity, kinematic: No data available<br>Viscosity, dynamic: No data available           |
| m) Water solubility                             | ca.0,9 g/l at 20 °C - soluble                                                              |
| n) Partition coefficient: n-octanol/water       | log Pow: -1,24 at 25 °C - Bioaccumulation is not expected.                                 |
| o) Vapor pressure                               | 0,21 hPa at 20 °C                                                                          |
| p) Density                                      | 1,1 g/cm <sup>3</sup> at 20 °C                                                             |
| Relative density                                | No data available                                                                          |
| q) Relative vapor density                       | No data available                                                                          |
| r) Particle characteristics                     | No data available                                                                          |
|                                                 |                                                                                            |
| s) Explosive properties                         | No data available                                                                          |
| t) Oxidizing properties                         | none                                                                                       |

### 9.2 Other safety information

No data available

---

## **SECTION 10: Stability and reactivity**

### **10.1 Reactivity**

The following applies in general to flammable organic substances and mixtures: in correspondingly fine distribution, when whirled up a dust explosion potential may generally be assumed.

### **10.2 Chemical stability**

The product is chemically stable under standard ambient conditions (room temperature) .

### **10.3 Possibility of hazardous reactions**

Caution! In contact with nitrites, nitrates, nitrous acid possible liberation of nitrosamines!

Violent reactions possible with:

Strong oxidizing agents

Acids

### **10.4 Conditions to avoid**

Avoid moisture.

no information available

### **10.5 Incompatible materials**

Light metals, Metals, various alloys, Strong oxidizing agents

### **10.6 Hazardous decomposition products**

In the event of fire: see section 5

---

## **SECTION 11: Toxicological information**

### **11.1 Information on toxicological effects**

#### **Acute toxicity**

LD50 Oral - Rat - male and female - 2.600 mg/kg

(OECD Test Guideline 401)

Inhalation: No data available

LD50 Dermal - Rabbit - male and female - 8.300 mg/kg

(OECD Test Guideline 402)

#### **Skin corrosion/irritation**

Skin - Rabbit

Result: Corrosive

(OECD Test Guideline 431)

#### **Serious eye damage/eye irritation**

Remarks: Causes serious eye damage.

#### **Respiratory or skin sensitization**

Local lymph node assay (LLNA) - Mouse

Result: positive

(OECD Test Guideline 429)

May cause allergy or asthma symptoms or breathing difficulties if inhaled. Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

#### **Germ cell mutagenicity**

Test Type: In vitro mammalian cell gene mutation test

Test system: Mouse lymphoma test



Metabolic activation: Metabolic activation  
Method: OECD Test Guideline 476  
Result: positive  
Test Type: Ames test  
Test system: Salmonella typhimurium  
Metabolic activation: with and without metabolic activation  
Method: OECD Test Guideline 471  
Result: negative  
Test Type: Chromosome aberration test in vitro  
Test system: Chinese hamster ovary cells  
Metabolic activation: with and without metabolic activation  
Method: OECD Test Guideline 473  
Result: negative

Test Type: Micronucleus test  
Species: Mouse  
Cell type: Bone marrow  
Application Route: Gavage  
Method: OECD Test Guideline 474  
Result: negative

**Carcinogenicity**

No data available

**Reproductive toxicity**

Suspected of damaging the unborn child.  
Suspected of damaging fertility.

**Specific target organ toxicity - single exposure**

No data available

**Specific target organ toxicity - repeated exposure**

No data available

**Aspiration hazard**

No data available

**11.2 Additional Information**

**Endocrine disrupting properties**

**Product:**

Assessment

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Repeated dose toxicity - Rat - male and female - Oral - NOAEL (No observed adverse effect level) - 627 mg/kg

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., Cough, Shortness of breath, Headache, Nausea, To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Drowsiness  
ataxia (impaired locomotor coordination)  
Unconsciousness  
Apathy  
muscular weakness  
Impairment of vision

Other information

Under given conditions, contact with nitrites or nitric acid can lead to the formation of nitrosamines, which have shown themselves to be carcinogenic in animal experiments.

Further data:

Therapeutically used substance.

Handle in accordance with good industrial hygiene and safety practice.

---

## SECTION 12: Ecological information

### 12.1 Toxicity

|                                                                        |                                                                                                                           |
|------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|
| Toxicity to fish                                                       | semi-static test LC50 - <i>Oryzias latipes</i> - > 100 mg/l - 96 h<br>(OECD Test Guideline 203)                           |
| Toxicity to daphnia and other aquatic invertebrates                    | semi-static test EC50 - <i>Daphnia magna</i> (Water flea) - 105,4 mg/l - 48 h<br>(OECD Test Guideline 202)                |
| Toxicity to algae                                                      | static test ErC50 - <i>Pseudokirchneriella subcapitata</i> (green algae) - 153,1 mg/l - 72 h<br>(OECD Test Guideline 201) |
| Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) | semi-static test NOEC - <i>Daphnia magna</i> (Water flea) - 12,5 mg/l - 21 d<br>(OECD Test Guideline 211)                 |

### 12.2 Persistence and degradability

|                  |                                                                                                     |
|------------------|-----------------------------------------------------------------------------------------------------|
| Biodegradability | aerobic - Exposure time 28 d<br>Result: 65 % - Readily biodegradable.<br>(OECD Test Guideline 301F) |
|------------------|-----------------------------------------------------------------------------------------------------|

### 12.3 Bioaccumulative potential

|                 |                                                                                                                                         |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------|
| Bioaccumulation | <i>Cyprinus carpio</i> (Carp) - 6 Weeks<br>at 25 °C (piperazine)<br><br>Bioconcentration factor (BCF): 0,3<br>(OECD Test Guideline 305) |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------|

### 12.4 Mobility in soil

No data available

### 12.5 Results of PBT and vPvB assessment

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

### 12.6 Endocrine disrupting properties

**Product:**

Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

### 12.7 Other adverse effects

No data available

---

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

No data available

---

## SECTION 14: Transport information

### 14.1 UN number

ADR/RID: 2579

IMDG: 2579

IATA: 2579

### 14.2 UN proper shipping name

ADR/RID: PIPERAZINE

IMDG: PIPERAZINE

IATA: Piperazine

### 14.3 Transport hazard class(es)

ADR/RID: 8

IMDG: 8

IATA: 8

### 14.4 Packaging group

ADR/RID: III

IMDG: III

IATA: III

### 14.5 Environmental hazards

ADR/RID: no

IMDG Marine pollutant: no

IATA: no

### 14.6 Special precautions for user

Tunnel restriction code : (E)

Further information : No data available

---

## SECTION 15: Regulatory information

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

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

## Authorisations and/or restrictions on use

### Other regulations

Observe work restrictions regarding maternity protection in accordance to Dir 92/85/EEC or stricter national regulations where applicable.

Take note of Dir 94/33/EC on the protection of young people at work.

### 15.2 Chemical Safety Assessment

A Chemical Safety Assessment has been carried out for this substance.

---

## SECTION 16: Other information

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

|        |                                          |
|--------|------------------------------------------|
| H228   | Flammable solid.                         |
| H314   | Causes severe skin burns and eye damage. |
| H317   | May cause an allergic skin reaction.     |
| H318   | Causes serious eye damage.               |
| H334   | Flammable solid.                         |
| H361fd | Causes severe skin burns and eye damage. |

CHEMIKART

## Full text of other abbreviations

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

## Further information

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See [www.sigma-aldrich.com](http://www.sigma-aldrich.com) and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

Copyright 2020 Sigma-Aldrich Co. LLC. License granted to make unlimited paper copies for internal use only.

The branding on the header and/or footer of this document may temporarily not visually match the product purchased as we transition our branding. However, all of the information in the document regarding the product remains unchanged and matches the product ordered. For further information please contact [mlsbranding@sial.com](mailto:mlsbranding@sial.com).