

# KLH (Keyhole Limpet Hemocyanin) base

## Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878

Issue date: 08 August 2022 Version: 1.0

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

#### 1.1. Product identifier

|                               |   |
|-------------------------------|---|
| Product form                  | : Mixture   |
| Product name                  | : KLH (Keyhole Limpet Hemocyanin) base  |
| Product code                  | : T-5060, N-5060, N-5042, D-5060, T-5061  |
| Product group                 | : Trade product   |
| Other means of identification | : TNP-KLH (Keyhole Limpet Hemocyanin) ; NP-KLH (Keyhole Limpet Hemocyanin) ; NIP-KLH (Keyhole Limpet Hemocyanin) ; DNP-KLH (Keyhole Limpet Hemocyanin) ; TNP-KLH-Biotin |

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

##### 1.2.1. Relevant identified uses

No additional information available

##### 1.2.2. Uses advised against

No additional information available

#### 1.3. Details of the supplier of the safety data sheet

##### US Address:

Biosearch Technologies, Inc  
2199 South McDowell Boulevard  
Petaluma, CA 94954-6904  
USA

##### EU Address:

Unite 1-2 Trident Industrial Estate  
Pindar Road  
Hoddesdon, EN110WZ  
England

#### 1.4. Emergency telephone number

Emergency number : 1-888-575-9695 (Monday-Friday, 8:00AM-5:00PM)

### SECTION 2: Hazards identification

#### 2.1. Classification of the substance or mixture

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

Not classified

Adverse physicochemical, human health and environmental effects

No additional information available

#### 2.2. Label elements

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

No labelling applicable

#### 2.3. Other hazards

The mixture does not contain substance(s) included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or is not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at a concentration equal to or greater than 0,1 %

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### 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] |
|---|--------------------|---|---|
| Contains no hazardous ingredients at levels requiring disclosure by Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878 |                    |   |   |

### SECTION 4: First Aid measures

#### 4.1. Description of first aid measures

|                                       |   |
|---------------------------------------|---|
| First-aid measures general            | : If exposed or concerned, get medical attention/advice. Show this safety data sheet to the doctor in attendance. Wash contaminated clothing before re-use. Never give anything to an unconscious person. |
| First-aid measures after inhalation   | : IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if breathing is affected. If breathing is difficult, supply oxygen.                     |
| First-aid measures after skin contact | : IF ON SKIN (or clothing): Remove affected clothing and wash all exposed skin with water for at least 15 minutes. If irritation develops or persists, get medical attention immediately.                 |
| First-aid measures after eye contact  | : IF IN EYES: Immediately flush with plenty of water for at least 15 minutes. Remove contact lenses if present and easy to do so. Get medical attention immediately. Continue rinsing.                    |
| First-aid measures after ingestion    | : IF SWALLOWED: rinse mouth thoroughly. Do not induce vomiting without advice from poison control center. Get medical attention if you feel unwell.   |

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

|                                     |  |
|-------------------------------------|--|
| Symptoms/effects                    | : Not expected to present a significant hazard under anticipated conditions of normal use. |
| Symptoms/effects after inhalation   | : May cause respiratory irritation.  |
| Symptoms/effects after skin contact | : May cause skin irritation.   |
| Symptoms/effects after eye contact  | : Direct contact with eyes is likely to be irritating.                                     |
| Symptoms/effects after ingestion    | : May cause gastrointestinal irritation.   |

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

No additional information available

### SECTION 5: Firefighting measures

#### 5.1. Extinguishing media

|                                |   |
|--------------------------------|---|
| Suitable extinguishing media   | : Foam. Dry powder. Carbon dioxide (CO2). |
| Unsuitable extinguishing media | : Water spray.                            |

#### 5.2. Special hazards arising from the substance or mixture

|                            |                             |
|----------------------------|-----------------------------|
| Fire hazard                | : Not flammable.            |
| Explosion hazard           | : Product is not explosive. |
| Reactivity in case of fire | : None known.               |

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### 5.3. Advice for firefighters

|                                |  |
|--------------------------------|--|
| Precautionary measures fire    | : Eliminate all ignition sources if safe to do so.   |
| Firefighting instructions      | : Exercise caution when fighting any chemical fire. Use water spray or fog for cooling exposed containers. Do not dispose of fire-fighting water in the environment. |
| Protection during firefighting | : Do not enter fire area without proper protective equipment, including respiratory protection. Self-contained breathing apparatus.                                  |

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

|                  |  |
|------------------|--|
| General measures | : Evacuate area. Ventilate area. Keep upwind. Spill should be handled by trained cleaning personnel properly equipped with respiratory and eye protection. |
|------------------|--|

#### 6.1.1. For non-emergency personnel

|                      |  |
|----------------------|--|
| Protective equipment | : Wear Protective equipment as described in Section 8. |
| Emergency procedures | : Evacuate unnecessary personnel.                      |

#### 6.1.2. For emergency responders

|                      |   |
|----------------------|---|
| Protective equipment | : Wear suitable protective clothing, gloves and eye or face protection. Approved supplied-air respirator, in case of emergency. |
|----------------------|---|

### 6.2. Environmental precautions

Avoid release to the environment. Prevent entry to sewers and public waters.

### 6.3. Methods and material for containment and cleaning up

|                         |   |
|-------------------------|---|
| For containment         | : Contain solid spills with appropriate barriers and prevent migration and entry into sewers or streams. Minimise generation of dust.                                       |
| Methods for cleaning up | : Scoop solid spill into closing conductive containers or conductive bags. This material and its container must be disposed of in a safe way, and as per local legislation. |

### 6.4. Reference to other sections

See Sections 8 and 13.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

|                               |   |
|-------------------------------|---|
| Precautions for safe handling | : Do not handle until all safety precautions have been read and understood. Keep container closed when not in use. Do not breathe dust. Avoid contact with skin and eyes. Do not eat, drink or smoke when using this product. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. |
|-------------------------------|---|

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

|                    |  |
|--------------------|--|
| Storage conditions | : Store in original container. Keep container closed when not in use. Containers which are opened should be properly resealed and kept upright to prevent leakage. Store in a dry, cool and well-ventilated place. |
|--------------------|--|

### 7.3. Specific end use(s)

No additional information available.

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### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

##### 8.1.1. National occupational exposure and biological limit values

No additional information available

##### 8.1.2. Recommended monitoring procedures

No additional information available

##### 8.1.3. Air contaminants formed

No additional information available

##### 8.1.4. DNEL and PNEC

No additional information available

##### 8.1.5. Control banding

No additional information available

#### 8.2. Exposure controls

##### 8.2.1. Appropriate engineering controls

###### Appropriate engineering controls:

Provide adequate general and local exhaust ventilation. Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Ensure adequate ventilation, especially in confined areas.

##### 8.2.2. Personal protection equipment

###### Personal protective equipment:

Gloves. Protective goggles. Wear labcoat with full coverage clothing. [In case of inadequate ventilation] wear respiratory protection.

###### Personal protective equipment symbol(s):



##### 8.2.2.1. Eye and face protection

###### Eye protection:

Use eye protection suitable to the environment. Avoid direct contact with eyes. Eye protection should be classified under EN 167(EU)

##### 8.2.2.2. Skin protection

###### Skin and body protection:

Wear long sleeves, and chemically impervious PPE/coveralls to minimize bodily exposure. [EN 14605:2005 and EN 13034:2005]

###### Hand protection:

Use gloves chemically resistant to this material when prolonged or repeated contact could occur. Gloves should be classified under Standard EN 374 or ASTM F1296. Suggested glove materials are: Neoprene, Nitrile/butadiene rubber, Polyethylene, Ethyl vinyl alcohol laminate, PVC or vinyl. Suitable gloves for this specific application can be recommended by the glove supplier.

##### 8.2.2.3. Respiratory protection

###### Respiratory protection:

Where vapour, mist, or dust exceed PELs or other applicable OELs, use the European Standard EN 529:2005 approved dust/particulate respiratory protective equipment.

##### 8.2.2.4. Thermal hazards

No additional information available

##### 8.2.3. Environmental exposure controls

No additional information available

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### SECTION 9: Physical and chemical properties

#### 9.1. Information on basic physical and chemical properties

|   |                  |
|---|------------------|
| Physical state                                  | : Solid          |
| Colour  | : Not applicable |
| Odour   | : Not applicable |
| Odour threshold                                 | : Not applicable |
| Melting point                                   | : Not applicable |
| Freezing point                                  | : Not applicable |
| Boiling point                                   | : Not applicable |
| Flammability                                    | : Not applicable |
| Explosive limits                                | : Not applicable |
| Lower explosive limit (LEL)                     | : Not applicable |
| Upper explosive limit (UEL)                     | : Not applicable |
| Flash point                                     | : Not applicable |
| Auto-ignition temperature                       | : Not applicable |
| Decomposition temperature                       | : Not applicable |
| pH  | : Not applicable |
| pH solution                                     | : Not applicable |
| Viscosity, kinematic                            | : Not applicable |
| Solubility                                      | : Not applicable |
| Partition coefficient n-octanol/water (Log Kow) | : Not applicable |
| Vapour pressure                                 | : Not applicable |
| Vapour pressure at 50 °C                        | : Not applicable |
| Density   | : Not applicable |
| Relative density                                | : Not applicable |
| Relative vapour density at 20 °C                | : Not applicable |
| Particle size                                   | : Not applicable |
| Particle size distribution                      | : Not applicable |
| Particle shape                                  | : Not applicable |
| Particle aspect ratio                           | : Not applicable |
| Particle aggregation state                      | : Not applicable |
| Particle agglomeration state                    | : Not applicable |
| Particle specific surface area                  | : Not applicable |
| Particle dustiness                              | : Not applicable |

#### 9.2. Other information

##### 9.2.1. Information with regard to physical hazard classes

No additional information available

##### 9.2.2. Other safety characteristics

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 recommended handling and storage conditions (see section 7).

#### 10.3. Possibility of hazardous reactions

None under normal use.

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### 10.4. Conditions to avoid

None known.

### 10.5. Incompatible materials

None known.

### 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 hazard classes as defined in Regulation (EC) No 1272/2008

|                                   |                  |
|-----------------------------------|------------------|
| Acute toxicity (oral)             | : Not classified |
| Acute toxicity (dermal)           | : Not classified |
| Acute toxicity (inhalation)       | : Not classified |
| Skin corrosion/irritation         | : Not classified |
| Serious eye damage/irritation     | : Not classified |
| Respiratory or skin sensitisation | : Not classified |
| Germ cell mutagenicity            | : Not classified |
| Carcinogenicity                   | : Not classified |
| Reproductive toxicity             | : Not classified |
| STOT-single exposure              | : Not classified |
| STOT-repeated exposure            | : Not classified |
| Aspiration hazard                 | : Not classified |

### 11.2. Information on other hazards

#### 11.2.1. Endocrine disrupting properties

|  |  |
|--|--|
| Adverse health effects caused by endocrine disrupting properties | : The mixture does not contain substance(s) included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or is not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at a concentration equal to or greater than 0,1 % |
|--|--|

#### 11.2.2. Other information

No additional information available

## SECTION 12: Ecological information

### 12.1. Toxicity

|   |                      |
|---|----------------------|
| Ecology - general   | : No data available. |
| Hazardous to the aquatic environment, short-term (acute)  | : Not classified     |
| Hazardous to the aquatic environment, long-term (chronic) | : Not classified     |

### 12.2. Persistence and degradability

No additional information available

### 12.3. Bioaccumulative potential

No additional information available

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### 12.4. Mobility in soil

No additional information available

### 12.5. Results of PBT and vPvB assessment

No additional information available

### 12.6. Endocrine disrupting properties

Adverse effects on the environment caused by endocrine disrupting properties

: The mixture does not contain substance(s) included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or is not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at a concentration equal to or greater than 0,1 %

### 12.7. Other adverse effects

Other adverse effects

: No data available

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

Waste treatment methods

: Do not discharge to public wastewater systems without permit of pollution control authorities. No discharge to surface waters is allowed without a permit.

Product/Packaging disposal recommendations

: Dispose in a safe manner in accordance with local/national regulations. Do not allow the product to be released into the environment.

## SECTION 14: Transport information

In accordance with ADR / IMDG / IATA / ADN / RID

### 14.1. UN number or ID number

UN-No. (ADR)

: Not regulated

UN-No. (IMDG)

: Not regulated

UN-No. (IATA)

: Not regulated

UN-No. (ADN)

: Not regulated

UN-No. (RID)

: Not regulated

### 14.2. UN proper shipping name

Proper Shipping Name (ADR)

: Not regulated

Proper Shipping Name (IMDG)

: Not regulated

Proper Shipping Name (IATA)

: Not regulated

Proper Shipping Name (ADN)

: Not regulated

Proper Shipping Name (RID)

: Not regulated

### 14.3. Transport hazard class(es)

#### ADR

Transport hazard class(es) (ADR)

: Not regulated

#### IMDG

Transport hazard class(es) (IMDG)

: Not regulated

#### IATA

Transport hazard class(es) (IATA)

: Not regulated

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### ADN

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

### RID

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

### 14.4. Packing group

Packing group (ADR) : Not regulated  
Packing group (IMDG) : Not regulated  
Packing group (IATA) : Not regulated  
Packing group (ADN) : Not regulated  
Packing group (RID) : Not regulated

### 14.5. Environmental hazards

Dangerous for the environment : No  
Marine pollutant : No  
Other information : No supplementary information available

### 14.6. Special precautions for user

#### Overland transport

Not regulated

#### Transport by sea (IMDG)

Not regulated

#### Air transport (IATA)

Not regulated

#### Inland waterway transport

Not regulated

#### Rail transport

Not regulated

### 14.7. Maritime transport in bulk according to IMO instruments

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 substance on the REACH candidate list

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



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### 15.1.2. National regulations

LGC claims research and development (R&D) exemption status under the Toxic Substances Control Act (TSCA) for this product. It may contain ingredients that are not on the TSCA inventory and only be used exclusively for research and development activities in accordance with the R&D exemption requirements under TSCA found at 40 CFR 720.36. It is the end-user's responsibility to understand and follow these requirements.

#### Germany

Water hazard class (WGK) : WGK nwg, Non-hazardous to water (Classification according to AwSV, Annex 1)  
Hazardous Incident Ordinance (12. BImSchV) : Is not subject of the Hazardous Incident Ordinance (12. BImSchV)

#### Netherlands

SZW-lijst van kankerverwekkende stoffen : None of the components are listed  
SZW-lijst van mutagene stoffen : None of the components are listed  
SZW-lijst van reprotoxische stoffen – Borstvoeding : None of the components are listed  
SZW-lijst van reprotoxische stoffen – Vruchtbaarheid : None of the components are listed  
SZW-lijst van reprotoxische stoffen – Ontwikkeling : None of the components are listed

### 15.2. Chemical safety assessment

No additional information available

## SECTION 16: Other information

| Abbreviations and acronyms |   |
|----------------------------|---|
| ACGIH                      | American Conference of Government Industrial Hygienists   |
| ADN                        | European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways   |
| ADR                        | European Agreement concerning the International Carriage of Dangerous Goods by Road               |
| CAS-No.                    | Chemical Abstract Service number  |
| CLP                        | Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008                       |
| DNEL                       | Derived-No Effect Level   |
| EC50                       | Median effective concentration  |
| EC-No.                     | European Community number   |
| ED                         | Endocrine disrupting properties   |
| EN                         | European Standard   |
| IATA                       | International Air Transport Association   |
| IMDG                       | International Maritime Dangerous Goods  |
| LD50                       | Median lethal dose  |
| OEL                        | Occupational Exposure Limit   |
| OSHA                       | Occupational Safety and Health Administration   |
| PBT                        | Persistent Bioaccumulative Toxic  |
| PNEC                       | Predicted No-Effect Concentration   |
| REACH                      | Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006 |
| RID                        | Regulations concerning the International Carriage of Dangerous Goods by Rail                      |
| SDS                        | Safety Data Sheet   |
| STOT                       | Specific target organ toxicity  |
| TRGS                       | Technical Rules for Hazardous Substances  |

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### Abbreviations and acronyms

|      |  |
|------|--|
| vPvB | Very Persistent and Very Bioaccumulative |
| WGK  | Water Hazard Class                       |

Data sources : Globally Harmonized System of Classification and Labelling of Chemicals (GHS).  
Classification for the USA in accordance with 29 CFR 1910.1200 (2012).  
Classification for the EU in accordance with 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.  
ECHA (European Chemicals Agency).

Training advice : Normal use of this product shall imply use in accordance with the instructions for use and corresponding product packaging.

Indication of changes:  
Revision 1.0: New SDS Created

Other information : Author: JAD.

SDS Prepared for LGC by:  
Pace Analytical Services, Inc.  
Product Regulatory Services Group  
1800 Elm Street  
Minneapolis, MN 55414  
United States  
612-656-1175  
[paceSDS@pacelabs.com](mailto:paceSDS@pacelabs.com)

| Classification according to Regulation (EC) No. 1272/2008 | Classification procedure     |
|---|------------------------------|
| Not classified  | Specific concentration limit |

### LGC EU SDS

This information is disclosed to the best of LGC's knowledge. Disposal should be in accordance with applicable regional, national and local laws and regulations.