SECTION 1: IDENTIFICATION OF THE PRODUCT AND OF THE COMPANY

1.1 Product identifiers
Product Name: ACS Material Covalent Organic Framework-LZU1 (COF-LZU1)
Brand: ACS Material LLC
CAS-No.: 1242082-12-7

1.2 Relevant identified uses of the substance or mixture and uses advised against
Identified uses: Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet
Company: ACS MATERIAL LLC
959 E Walnut St., Suite 100
Pasadena, CA 91106
USA
Telephone: +1 (866)-227-0656
Fax: +1 (781)-518-0284

1.4 Emergency telephone number
Emergency Phone #: +1 (866)-227-0656

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture
GHS Classification
Specific target organ toxicity - single exposure (Category 3), Respiratory system, H335
For the full text of the H-Statements mentioned in this Section, see Section 16

2.2 GHS Label elements, including precautionary statements
Pictogram

Signal word
Warning

Hazard statement(s)
H335 May cause respiratory irritation.

Precautionary statement(s)
P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P264 Wash skin thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves/ protective clothing/ eye protection/ face
If INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Call a POISON CENTER or doctor/physician if you feel unwell.

Store in a well-ventilated place. Keep container tightly closed.

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

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.

Substance name: ACS Material Covalent Organic Framework-LZU1 (COF-LZU1)
Synonyms: COF-LZU1
CAS-No.: 1242082-12-7

Hazardous components

<table>
<thead>
<tr>
<th>Component</th>
<th>Concentration</th>
<th>CAS-No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>COF-LZU1</td>
<td>≤100%</td>
<td>1242082-12-7</td>
</tr>
</tbody>
</table>

For the full text of the phrases mentioned in this Section, see Section 16.

Hazardous impurities: None known.

Description of first aid measures

Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled
If inhaled, remove to fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and consult a physician.

**If swallowed**
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

**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*
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

**5.2 Hazards arising from the substance or mixture**
No data available.

**5.3 Advice for firefighters**
Wear self-contained breathing apparatus for firefighting if necessary.

**5.4 Conditions of flammability**
No data available.

**5.5 Further information**
No data available.

### SECTION 6: ACCIDENTAL RELEASE MEASURES

**6.1 Personal precautions, protective equipment and emergency procedures**
Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

For personal protection see section 8.

**6.2 Environmental precautions**
Do not let product enter drains.

**6.3 Methods and materials for containment and cleaning up**
Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

**6.4 Reference to other sections**
For disposal see section 13.
SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Store in cool place. Keep container tightly closed in a dry and well-ventilated place. If necessary, nitrogen protection and low temperature preservation.

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
Components with workplace control parameters
Contains no substances with occupational exposure limit values.

8.2 Exposure controls
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

Appropriate engineering controls
Use mechanical exhaust or laboratory fume hood to avoid exposure.

Personal protective equipment

Eye/face protection
Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Impervious clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Body Protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove’s outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Respiratory protection
For nuisance exposures use type P95 (US) or type P1 (EU EN 143) particle respirator. For higher level protection use type OV/AG/P99 (US) or type ABEK-P2 (EU EN 143) respirator cartridges. Use respirators and components tested and approved.
under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure
Do not let product enter drains.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

1) Appearance
   Form: Powder

2) Odour
   No data available

3) Odour Threshold
   No data available

4) pH
   No data available

5) Melting point/freezing point
   No data available

6) Initial boiling point and boiling range
   No data available

7) Flash point
   No data available

8) Evaporation rate
   No data available

9) Flammability (solid, gas)
   No data available

10) Upper/lower flammability or explosive limits
    No data available

11) Vapour pressure
    No data available

12) Vapour density
    No data available

13) Relative density
    No data available

14) Water solubility
    Insoluble

15) Partition coefficient: n-octanol/water
    No data available

16) Auto-ignition temperature
    No data available

17) Decomposition temperature
    >320 °C

18) Viscosity
    No data available

19) Explosive properties
    No data available

20) Oxidizing properties
    No data available

9.2 Other safety 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
10.4 Conditions to avoid
Strong acids, strong alkali

10.5 Incompatible materials
Strong acids, strong alkali

10.6 Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Carbon oxides.
Other decomposition products - No data available.
In the event of fire: see section 5.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
Oral LD50: No data available.
Inhalation LC50: No data available.
Dermal LD50: No data available.

Skin corrosion/irritation
No data available.

Serious eye damage/eye irritation
No data available.

Respiratory or skin sensitisation
No data available.

Germ cell mutagenicity
No data available.

Carcinogenicity
IARC: 3 - Group 3: Not classifiable as to its carcinogenicity to humans (COF-LZU1)
2B - Group 2B: Possibly carcinogenic to humans (COF-LZU1)
3 - Group 3: Not classifiable as to its carcinogenicity to humans (COF-LZU1)

Reproductive toxicity
No data available.

Specific target organ toxicity - single exposure
Inhalation - May cause respiratory irritation.

Specific target organ toxicity - repeated exposure
No data available.

Aspiration hazard
No data available.
Potential health effects

Inhalation May be harmful if inhaled. Causes respiratory tract irritation.
Ingestion May be fatal if swallowed.

Signs and Symptoms of Exposure
No data available.

Additional Information
RTECS: Not available.
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

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 (COF-LZU1).

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

Product
Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging
Dispose of as unused product.

SECTION 14: TRANSPORT INFORMATION

14.1 UN number
ADR/RID: -      IMDG: -      IATA: -

14.2 UN proper shipping name
Safety Data Sheet – COF-LZU1

ADR/RID: Not dangerous goods
MDG: Not dangerous goods
IATA: Not dangerous goods

14.3 Transport hazard class(es)
ADR/RID: - IMDG: - IATA: -

14.4 Packaging group
ADR/RID: - IMDG: - IATA: -

14.5 Environmental hazards
ADR/RID: no IMDG Marine pollutant: no IATA: no

14.6 Special precautions for user
No data available

SECTION 15: REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

SECTION 16: OTHER INFORMATION

HMIS Rating
Health hazard: 1

Chronic Health Hazard:
Flammability: 0
Physical Hazard: 0

NFPA Rating
Health hazard: 1
Fire Hazard: 0
Reactivity Hazard: 0

Disclaimer: ACS Material, LLC believes that the information in this Safety Data Sheet is accurate and represents the best and most current information available to us. ACS Material makes no representations or warranties either express or implied, regarding the suitability of the material for any purpose or the accuracy of the information contained within this document. Accordingly, ACS Material will not be responsible for damages resulting from use of or reliance upon this information.