MATERIAL SAFETY DATA SHEET

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifier

Product name : Astaxanthin

CAS No. : 472-61-7

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: Aurora Industry Co.,Ltd.

Tel: 0411-82288674

Address: Room 7033, No.9-1, Haifu Road, Dalian Free Trade Zone, China

2. HAZARDS IDENTIFICATION

Classification of the substance or mixture

Not classified as a hazardous substance or mixture

GHS Label Elements

Pictograms: N/A

Signal word: N/A

Hazard and precautionary statements

None

Hazards not otherwise classified (HNOC) or not covered by GHS: None.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Common Name	Astaxanthin
Synonym(s)	(3S,3'S)-3,3'-Dihydroxy-β,β-carotene-4,4'-dione
Formula	$C_{40}H_{52}O_4$
CAS Number	472-61-7

4. FIRST AID MEASURES

4.1 Description of first aid measures

Inhalation: If breathed in, move person into fresh air. If not breathing, give artificial respiration.

Skin Contact: Wash off with soap and plenty of water.

Eye Contact: Flush eyes with water as a precaution.

Ingestion: Never give anything by mouth to an unconscious person. Rinse mouth with water.

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) and/or in section 11.

4.3 Indication of any immediate medical attention and special treatment needed

No data available.

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media: Use water spray, alcohol-resistant foam, dry chemical, or carbon dioxide.

5.2 Special hazards arising from the substance or mixture

No data available

Suitable extinguishing media: Use water spray, alcohol-resistant foam, dry chemical, or carbon dioxide.

5.3 Further information:

No data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Avoid dust formation. Avoid breathing vapors, mist, or gas. For personal protection see section 8.

6.2 Environmental precautions

Do not let product enter drains

6.3 Methods and material for containment and cleaning up

Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Provide appropriate exhaust ventilation at places where dust is formed. Normal measures for preventive fire protection. For precautions see section 2.

7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place. Store under inert gas. Recommended storage temperature: -20°C

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

Appropriate engineering controls: General industrial hygiene practice.

8.3 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).

Skin 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.

Body Protection: Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection: Respiratory protection is not required. Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN 143) dust masks. 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.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance: Solid
Color: Violet
Odor: No data available
Odor Threshold: No data available
pH: No data available
Melting point/freezing point: 216 - 218°C (421 - 424°F)
Initial boiling point and boiling range: No data available
Flash point: No data available
Evaporation Rate: No data available
Flammability (solid, gas): No data available
Upper/lower flammability or explosive limits: No data available
Vapor pressure: No data available
Vapor density: No data available
Relative density: No data available
Water solubility: 0.083 g/l
Partition coefficient (n-Octanol/water): No data available
Auto-ignition temperature: No data available
Decomposition temperature: No data available
Viscosity: No data available
Explosive properties: No data available

Oxidizing properties: No data available
9.2 Other information
Solubility in other solvents
Chloroform: 6 g/l
Dimethylformamide: 0.5 g/l

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
No data available
10.4 Conditions to avoid
No data available
10.5 Incompatible materials
Strong oxidizing agents
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

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects
Acute toxicity
Inhalation: No data available
Dermal: No data available
Skin corrosion/irritation: No data available
Serious eye damage/eye irritation: No data available
Respiratory or skin sensitization: No data available
Germ cell mutagenicity: No data available.
11.2 Carcinogenicity
IARC: No component of this product, present at levels greater than or equal to 0.1%, is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH: No component of this product, present at levels greater than or equal to 0.1%, is identified as a carcinogen or potential carcinogen by ACGIH.
NTP: No component of this product, present at levels greater than or equal to 0.1%, is identified as a known or anticipated carcinogen by NTP.
OSHA: No component of this product, present at levels greater than or equal to 0.1%, is identified as a carcinogen or potential carcinogen by OSHA.
11.3 Reproductive toxicity: No data available

Specific target organ toxicity - single exposure: No data available
Specific target organ toxicity - repeated exposure: No data available
Aspiration hazard: No data available

11.4 Additional Information

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

12. ECOLOGICAL INFORMATION

Toxicity: No data available
Persistence and degradability: No data available
Bioaccumulative potential: No data available
Mobility in soil: No data available
Results of PBT and vPvB assessment: PBT/vPvB assessment not available as chemical safety assessment not required/not conducted
Other adverse effects: No data available

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Dispose of product and contaminated packaging in accordance with all local, state, and federal environmental control regulations.

14. TRANSPORT INFORMATION

DOT (US): Not dangerous goods
IMDG: Not dangerous goods
IATA: Not dangerous goods

15. REGULATORY INFORMATION

SARA 302 Components: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.
SARA 313 Components: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.
SARA 311/312 Hazards: No SARA Hazards
Massachusetts Right to Know Components
No components are subject to the Massachusetts Right to Know Act.
Pennsylvania Right to Know Components
(3S,3'S)-3,3'-Dihydroxy-β,β-carotene-4,4'-dione (CAS-No. 472-61-7)
New Jersey Right to Know Components

(3S,3'S)-3,3'-Dihydroxy-β,β-carotene-4,4'-dione (CAS-No. 472-61-7)
California Prop. 65 Components: This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.
HMIS Rating
Health: 0
Flammability: 0
Reactivity: 0
NFPA Rating
Health: 0
Flammability: 0
Reactivity: 0

16. OTHER INFORMATION

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall AUCO be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if AUCO has been advised of the possibility of such damages.