1 Identification

· Product identifier
· Trade name: Styrallyl Alcohol natural
· Product number: 1685
· CAS Number: 98-85-1
· EC number: 202-707-1
· Application of the substance / the mixture: Food flavorings

2 Hazard(s) identification

· Classification of the substance or mixture

   GHS05 Corrosion
   
   Eye Dam. 1 H318 Causes serious eye damage.

   !
   
   GHS07

   Acute Tox. 4 H302 Harmful if swallowed.
   Skin Irrit. 2 H315 Causes skin irritation.
   Flam. Liq. 4 H227 Combustible liquid.

   Label elements: Harmful in contact with skin or if inhaled.

(Continued on page 2)
Safety Data Sheet
acc. to OSHA HCS

Printing date 08/24/2018
Reviewed on 05/16/2018

Trade name: Styrallyl Alcohol natural

<table>
<thead>
<tr>
<th>GHS label elements</th>
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<td>Pictograms on the label shall be in the shape of a square set at a point and shall include a black hazard symbol on a white background with a red frame sufficiently wide to be clearly visible.</td>
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<td>The substance is classified and labeled according to the Globally Harmonized System (GHS).</td>
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<th>Hazard pictograms</th>
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<td>GHS05</td>
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<tr>
<th>Signal word</th>
</tr>
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<tbody>
<tr>
<td>Danger</td>
</tr>
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</table>

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<tr>
<th>Hazard-determining components of labeling:</th>
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<tr>
<td>alpha-Methylbenzyl alcohol</td>
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<td>P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.</td>
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<td>P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.</td>
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<td>P310 Immediately call a poison center/doctor.</td>
</tr>
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<td>P321 Specific treatment (see on this label).</td>
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<td>P330 Rinse mouth.</td>
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<td>P362+P364 Take off contaminated clothing and wash it before reuse.</td>
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<td>P403+P235 Store in a well-ventilated place. Keep cool.</td>
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<td>P501 Dispose of contents/container in accordance with local/regional/national/international regulations.</td>
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<th>Classification system:</th>
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<td>NFPA ratings (scale 0 - 4)</td>
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<tr>
<td>Health = 3</td>
</tr>
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<tr>
<td>Results of PBT and vPvB assessment</td>
</tr>
<tr>
<td>PBT: Not applicable.</td>
</tr>
</tbody>
</table>

(Continued on page 3)
Safety Data Sheet
acc. to OSHA HCS

Trade name: Styrallyl Alcohol natural

· vPvB: Not applicable.

### 3 Composition/information on ingredients
· Chemical characterization: Substances
  · CAS No. Description
    98-85-1 alpha-Methylbenzyl alcohol
  · Identification number(s)
  · EC number: 202-707-1

### 4 First-aid measures
· Description of first aid measures
  · General information:
    Immediately remove any clothing soiled by the product.
    Symptoms of poisoning may even occur after several hours; therefore medical observation for at least
    48 hours after the accident.
  · After inhalation: Supply fresh air; consult doctor in case of complaints.
  · After skin contact: Immediately rinse with water.
  · After eye contact: Rinse opened eye for several minutes under running water. Then consult a doctor.
  · After swallowing: Immediately call a doctor.
  · Information for doctor:
    Most important symptoms and effects, both acute and delayed
    No further relevant information available.
    Indication of any immediate medical attention and special treatment needed
    No further relevant information available.

### 5 Fire-fighting measures
· Extinguishing media
  · Suitable extinguishing agents:
    CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
  · Special hazards arising from the substance or mixture No further relevant information available.
  · Advice for firefighters
  · Protective equipment: No special measures required.
  · Additional information
    Cool endangered receptacles with water spray.
    Collect contaminated fire fighting water separately. It must not enter the sewage system.

### 6 Accidental release measures
· Personal precautions, protective equipment and emergency procedures
  Wear protective equipment. Keep unprotected persons away.
  Environmental precautions:
    Dilute with plenty of water.
    Do not allow to enter sewers/ surface or ground water.
Trade name: Styrallyl Alcohol natural

· Methods and material for containment and cleaning up:
  Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
  Use neutralizing agent.
  Dispose contaminated material as waste according to item 13.
  Ensure adequate ventilation.

· Reference to other sections
  See Section 7 for information on safe handling.
  See Section 8 for information on personal protection equipment.
  See Section 13 for disposal information.

· Protectiv Action Criteria for Chemicals

  · PAC-1:
    Substance is not listed.

  · PAC-2:
    Substance is not listed.

  · PAC-3:
    Substance is not listed.

7 Handling and storage

· Handling:
  · Precautions for safe handling No special precautions are necessary if used correctly.
  · Information about protection against explosions and fires:
    Keep ignition sources away - Do not smoke.

· Conditions for safe storage, including any incompatibilities

· Storage:
  · Requirements to be met by storerooms and receptacles: No special requirements.
  · Information about storage in one common storage facility: Not required.
  · Further information about storage conditions: Keep receptacle tightly sealed.

· Specific end use(s) No further relevant information available.

8 Exposure controls/personal protection

· Additional information about design of technical systems: No further data; see item 7.

· Control parameters
  · Components with limit values that require monitoring at the workplace: Not required.
  · Additional information: The lists that were valid during the creation were used as a basis.

· Exposure controls
  · Personal protective equipment:
    · General protective and hygienic measures:
      Keep away from foodstuffs, beverages and feed.
      Immediately remove all soiled and contaminated clothing.
      Wash hands before breaks and at the end of work.
      Avoid contact with the eyes.
Avoid contact with the eyes and skin.

- **Breathing equipment:** Not required.
- **Protection of hands:**

  **Protective gloves**

  The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture. Selection of the glove material should be based on consideration of the penetration times, rates of diffusion and the degradation.

  - **Material of gloves**
    The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

  - **Penetration time of glove material**
    The exact break through time has to be determined by the manufacturer of the protective gloves and has to be observed.

  - **Eye protection:**

    **Tightly sealed goggles**

### 9 Physical and chemical properties

- **Information on basic physical and chemical properties**
- **General Information**
  - **Appearance:**
    - **Form:** Liquid
    - **Color:** According to product specification
  - **Odor:** According to product specification
  - **Odor threshold:** Not determined.
  - **pH-value:** Not determined.

- **Change in condition**
  - **Melting point/Melting range:** Undetermined.
  - **Boiling point/Boiling range:** 204-205 °C (399.2-401 °F) (@ 745 mm Hg)

- **Flash point:** 85 °C (185 °F)

- **Flammability (solid, gaseous):** Not applicable.

- **Ignition temperature:** 480 °C (896 °F)

- **Decomposition temperature:** Not determined.

- **Auto igniting:** Not determined.
Trade name: Styrallyl Alcohol natural

- Danger of explosion: Not determined.

- Explosion limits:
  Lower: Not determined.
  Upper: Not determined.

- Vapor pressure: Not determined.

- Density at 20 °C (68 °F): 1.015 g/cm³ (8.47017 lbs/gal)
  Relative density: Not determined.
  Vapor density: Not determined.
  Evaporation rate: Not determined.

- Solubility in / Miscibility with Water: Very slightly soluble

- Partition coefficient (n-octanol/water): Not determined.

- Viscosity:
  Dynamic: Not determined.
  Kinematic: Not determined.
  VOC content: 0.00 %
  0.0 g/l / 0.00 lb/gal

- Other information No further relevant information available.

10 Stability and reactivity

- Reactivity No further relevant information available.
- Chemical stability
- Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
- Possibility of hazardous reactions No dangerous reactions known.
- Conditions to avoid No further relevant information available.
- Incompatible materials: No further relevant information available.
- Hazardous decomposition products: No dangerous decomposition products known.

11 Toxicological information

- Information on toxicological effects
- Acute toxicity:
  - LD/LC50 values that are relevant for classification:
    ATE (Acute Toxicity Estimate)
    Oral LD50 400 mg/kg (rat)
    CAS: 98-85-1 alpha-Methylbenzyl alcohol
    Oral LD50 558 mg/kg (mouse) 400 mg/kg (rat)
47. Primary irritant effect:
   · on the skin: No irritant effect.
   · on the eye: Strong irritant with the danger of severe eye injury.
   · Sensitization: No sensitizing effects known.

   Additional toxicological information:

   Carcinogenic categories
   · IARC (International Agency for Research on Cancer)
     Substance is not listed.
   · NTP (National Toxicology Program)
     Substance is not listed.
   · OSHA-Ca (Occupational Safety & Health Administration)
     Substance is not listed.

12 Ecological information

   Toxicity
   · Aquatic toxicity: No further relevant information available.
   · Persistence and degradability No further relevant information available.
   · Behavior in environmental systems:
     · Bioaccumulative potential No further relevant information available.
     · Mobility in soil No further relevant information available.
   · Additional ecological information:
     · General notes:
       Water hazard class 1 (Assessment by list): slightly hazardous for water
       Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
       Must not reach bodies of water or drainage ditch undiluted or unneutralized.
   · Results of PBT and vPvB assessment
     · PBT: Not applicable.
     · vPvB: Not applicable.
     · Other adverse effects No further relevant information available.

13 Disposal considerations

   Waste treatment methods
   · Recommendation: Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

   Uncleaned packagings:
   · Recommendation: Disposal must be made according to official regulations.
   · Recommended cleansing agent: Water, if necessary with cleansing agents.
## 14 Transport information

| · UN-Number | UN2937 |
| · DOT, ADR, IMDG, IATA |  |
| · UN proper shipping name |  |
| · DOT | alpha-Methylbenzyl alcohol, liquid |
| · ADR | 2937 alpha-Methylbenzyl alcohol, liquid |
| · IMDG, IATA | alpha-METHYLBENZYL ALCOHOL, LIQUID |

| · Transport hazard class(es) |  |
| · DOT |  |
| · Class | 6.1 Toxic substances |
| · Label | 6.1 |
| · ADR |  |
| · Class | 6.1 (T1) Toxic substances |
| · Label | 6.1 |
| · IMDG, IATA |  |
| · Class | 6.1 Toxic substances |
| · Label | 6.1 |

| · Packing group |  |
| · DOT, ADR, IMDG, IATA | III |
| · Environmental hazards: | Not applicable. |
| · Special precautions for user | Warning: Toxic substances |
| · Danger code (Kemler): | 60 |
| · EMS Number: | 6.1-02 |
| · Stowage Category | A |
| · Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code | Not applicable. |
Transport/Additional information:

- DOT
- Quantity limitations
  - On passenger aircraft/rail: 60 L
  - On cargo aircraft only: 220 L

- ADR
- Excepted quantities (EQ)
  - Code: E1
  - Maximum net quantity per inner packaging: 30 ml
  - Maximum net quantity per outer packaging: 1000 ml

- IMDG
- Limited quantities (LQ)
  - 5L
- Excepted quantities (EQ)
  - Code: E1
  - Maximum net quantity per inner packaging: 30 ml
  - Maximum net quantity per outer packaging: 1000 ml

- UN "Model Regulation":
  - UN 2937 ALPHA-METHYLBENZYL ALCOHOL, LIQUID, 6.1, III

15 Regulatory information

- Safety, health and environmental regulations/legislation specific for the substance or mixture:
  - Sara
    - Section 355 (extremely hazardous substances):
      - Substance is not listed.
    - Section 313 (Specific toxic chemical listings):
      - Substance is not listed.
  - TSCA (Toxic Substances Control Act):
    - Substance is listed.

- Proposition 65
  - Chemicals known to cause cancer:
    - Substance is not listed.
  - WARNING: Consuming this product can expose you to Styrene, which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov/food.
    - Styrene CAS-no. 100-42-5 (0-300 ppm)
  - Chemicals known to cause reproductive toxicity for females:
    - Substance is not listed.
  - Chemicals known to cause reproductive toxicity for males:
    - Substance is not listed.
Trade name: Styrally Alcohol natural

- **Chemicals known to cause developmental toxicity:**
  Substance is not listed.

- **Carcinogenic categories**
  - **EPA (Environmental Protection Agency)**
    Substance is not listed.
  - **TLV (Threshold Limit Value established by ACGIH)**
    Substance is not listed.
  - **NIOSH-Ca (National Institute for Occupational Safety and Health)**
    Substance is not listed.

- **GHS label elements**
  Pictograms on label shall be in the shape of a square set at a point and shall include a black hazard symbol on a white background with a red frame sufficiently wide to be clearly visible. The substance is classified and labeled according to the Globally Harmonized System (GHS).
  - **Hazard pictograms**
    ![GHS05](image) ![GHS07](image)

- **Signal word** Danger

- **Hazard-determining components of labeling:**
  alpha-Methylbenzyl alcohol

- **Hazard statements**
  H227 Combustible liquid.
  H302 Harmful if swallowed.
  H315 Causes skin irritation.
  H318 Causes serious eye damage.

- **Precautionary statements**
  P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
  P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
  P310 Immediately call a poison center/doctor.
  P321 Specific treatment (see on this label).
  P330 Rinse mouth.
  P362+P364 Take off contaminated clothing and wash it before reuse.
  P403+P235 Store in a well-ventilated place. Keep cool.
  P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

- **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

(Continued on page 11)
16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Department issuing SDS:** Product Safety Department
- **Contact:**
  
  Product Safety Department
  
  productsafety@adv-bio.com
- **Date of preparation / last revision** 08/24/2018 /
- **Abbreviations and acronyms:**
  
  - ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
  - IMDG: International Maritime Code for Dangerous Goods
  - DOT: US Department of Transportation
  - IATA: International Air Transport Association
  - ACGIH: American Conference of Governmental Industrial Hygienists
  - EtNEXCS: European Inventory of Existing Commercial Chemical Substances
  - CAS: Chemical Abstracts Service (division of the American Chemical Society)
  - NFPA: National Fire Protection Association (USA)
  - HMIS: Hazardous Materials Identification System (USA)
  - VOC: Volatile Organic Compounds (USA, EU)
  - LC50: Lethal concentration, 50 percent
  - LD50: Lethal dose, 50 percent
  - PBT: Persistent, Bioaccumulative and Toxic
  - vPvB: very Persistent and very Bioaccumulative
  - NIOSH: National Institute for Occupational Safety
  - OSHA: Occupational Safety & Health
  - TLV: Threshold Limit Value
  - PEL: Permissible Exposure Limit
  - REL: Recommended Exposure Limit
  - Flam. Liq. 4: Flammable liquids – Category 4
  - Acute Tox. 4: Acute toxicity – Category 4
  - Skin Irrit. 2: Skin corrosion/irritation – Category 2
  - Eye Dam. 1: Serious eye damage/eye irritation – Category 1