1 Identification

· Product identifier

· Trade name: Phenol natural

· Product number: 1541

· CAS Number:
  108-95-2

· EC number:
  203-632-7

· Index number:
  604-001-00-2

· Application of the substance / the mixture Food flavorings

· Details of the supplier of the safety data sheet

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· Manufacturer/Supplier:
  Advanced Biotech
  10 Taft Road
  Totowa, NJ 07512 USA

· Information department:
  Product Safety Department
  productsafety@adv-bio.com

· Emergency telephone number:
  1(800)535-5053 (Info Trac)
  1(352)323-3500 (International)
  During normal business hours: 1(973)339-6242

2 Hazard(s) identification

· Classification of the substance or mixture

GHS06 Skull and crossbones

Acute Tox. 3 H301 Toxic if swallowed.
Acute Tox. 3 H311 Toxic in contact with skin.
Acute Tox. 3 H331 Toxic if inhaled.

GHS08 Health hazard

Muta. 2 H341 Suspected of causing genetic defects.
STOT RE 2 H373 May cause damage to organs through prolonged or repeated exposure.

(Continued on page 2)
Trade name: Phenol natural

GHS Corrosion

Skin Corr. 1B H314 Causes severe skin burns and eye damage.

- Label elements Harmful in contact with skin or if inhaled.
- 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
  - GHS06
  - GHS08

- Signal word Danger

- Hazard-determining components of labeling:
  phenol

- Hazard statements
  H301+H311+H331 Toxic if swallowed, in contact with skin or if inhaled.
  H314 Causes severe skin burns and eye damage.
  H341 Suspected of causing genetic defects.
  H373 May cause damage to organs through prolonged or repeated exposure.

- Precautionary statements
  P260 Do not breathe dust/fume/gas/mist/vapors/spray.
  P301+P310 If swallowed: Immediately call a poison center/doctor.
  P321 Specific treatment (see on this label).
  P303+P361+P353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
  P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
  P361+P364 Take off immediately all contaminated clothing and wash it before reuse.
  P405 Store locked up.
  P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

- Classification system:
  NFPA ratings (scale 0 - 4)
    - Health = 4
    - Fire = 2
    - Reactivity = 0

- HMIS-ratings (scale 0 - 4)
    - Health = 3
    - Fire = 2
    - Reactivity = 0
Trade name: Phenol natural

· Other hazards
· Results of PBT and vPvB assessment
· PBT: Not applicable.
· vPvB: Not applicable.

3 Composition/information on ingredients
· Chemical characterization: Substances
· CAS No. Description
  108-95-2 phenol
· Identification number(s)
· EC number: 203-632-7
· Index number: 604-001-00-2

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.
  Remove breathing apparatus only after contaminated clothing have been completely removed.
  In case of irregular breathing or respiratory arrest provide artificial respiration.
· After inhalation:
  Supply fresh air or oxygen; call for doctor.
  In case of unconsciousness place patient stably in side position for transportation.
· After skin contact: Immediately wash with water and soap and rinse thoroughly.
· After eye contact: Rinse opened eye for several minutes under running water. Then consult a doctor.
· After swallowing: Do not induce vomiting; immediately call for medical help.
· 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
  During heating or in case of fire poisonous gases are produced.
· Advice for firefighters
· Protective equipment: Mouth respiratory protective device.
· 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
  Mount respiratory protective device.
  Wear protective equipment. Keep unprotected persons away.
- Environmental precautions: Do not allow to enter sewers/surface or ground water.
- Methods and material for containment and cleaning up:
  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.

Protective Action Criteria for Chemicals

- PAC-1: 15 ppm
- PAC-2: 23 ppm
- PAC-3: 200 ppm

7 Handling and storage

- Handling:
  Precautions for safe handling
  Thorough dedusting.
  Ensure good ventilation/exhaustion at the workplace.
  Open and handle receptacle with care.
- Information about protection against explosions and fires:
  Keep respiratory protective device available.
- Conditions for safe storage, including any incompatibilities
- Storage:
  Requirements to be met by storerooms and receptacles:
  No special requirements.
  Please refer to product specification for product storage 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:

<table>
<thead>
<tr>
<th>CAS: 108-95-2 phenol</th>
</tr>
</thead>
<tbody>
<tr>
<td>PEL Long-term value: 19 mg/m³, 5 ppm</td>
</tr>
<tr>
<td>Skin</td>
</tr>
<tr>
<td>REL Long-term value: 19 mg/m³, 5 ppm</td>
</tr>
<tr>
<td>Ceiling limit value: 60* mg/m³, 15.6* ppm</td>
</tr>
<tr>
<td>*15-min; Skin</td>
</tr>
<tr>
<td>TLV Long-term value: 19 mg/m³, 5 ppm</td>
</tr>
<tr>
<td>Skin; BEI</td>
</tr>
</tbody>
</table>

Ingredients with biological limit values:

<table>
<thead>
<tr>
<th>CAS: 108-95-2 phenol</th>
</tr>
</thead>
<tbody>
<tr>
<td>BEI 250 mg/g creatinine</td>
</tr>
<tr>
<td>Medium: urine</td>
</tr>
<tr>
<td>Time: end of shift</td>
</tr>
<tr>
<td>Parameter: Phenol with hydrolysis (background, nonspecific)</td>
</tr>
</tbody>
</table>

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.
Store protective clothing separately.
Avoid contact with the eyes and skin.

Breathing equipment:
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

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.
Trade name: Phenol natural

- Eye protection:
  - Tightly sealed goggles

9 Physical and chemical properties

- Information on basic physical and chemical properties
  - General Information
    - Appearance:
      - Form: Solid
      - Color: According to product specification
      - Odor: According to product specification
      - Odor threshold: Not determined.
  - pH-value: Not applicable.
  - Change in condition
    - Melting point/Melting range: 40.8 °C (105.4 °F)
    - Boiling point/Boiling range: 181.8 °C (359.2 °F)
  - Flash point: 82 °C (179.6 °F)
  - Flammability (solid, gaseous): Product is not flammable.
  - Ignition temperature: 595 °C (1,103 °F)
  - Decomposition temperature: Not determined.
  - Auto igniting: Not determined.
  - Danger of explosion: Product does not present an explosion hazard.
  - Explosion limits:
    - Lower: 1.3 Vol %
    - Upper: 9.5 Vol %
  - Vapor pressure at 20 °C (68 °F): 0.3 hPa (0.2 mm Hg)
  - Density at 20 °C (68 °F): 1.0576 g/cm³ (8.82567 lbs/gal)
  - Relative density: Not determined.
  - Vapor density: Not applicable.
  - Evaporation rate: Not applicable.
  - Solubility in / Miscibility with
    - Water at 20 °C (68 °F): 82 g/l
  - Partition coefficient (n-octanol/water): Not determined.
  - Viscosity:
    - Dynamic: Not applicable.
    - Kinematic: Not applicable.
    - Organic solvents: 100.0 %
    - VOC content: 100.00 %
    - 0.0 g/l / 0.00 lb/gal
**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 317 mg/kg (rat)
        - Dermal: LD50 850 mg/kg (rabbit)
        - Inhalative: LC50/4 h 0.5 mg/l
    - **CAS: 108-95-2 phenol**
      - Oral: LD50 317 mg/kg (rat)
      - Dermal: LD50 850 mg/kg (rabbit)
      - Inhalative: LC50/4 h 0.5 mg/l (ATE)
  - **Primary irritant effect:**
    - **on the skin:** No irritant effect.
    - **on the eye:** No irritating effect.
  - **Sensitization:** No sensitizing effects known.
  - **Additional toxicological information:**
    - **Carcinogenic categories**
      - **IARC (International Agency for Research on Cancer)**
        - 3
      - **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.
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.

14 Transport information

- UN-Number
  - DOT, ADR, IMDG, IATA UN1671

- UN proper shipping name
  - DOT
  - ADR 1671 PHENOL, SOLID
  - IMDG, IATA PHENOL, SOLID

- Transport hazard class(es)
  - DOT, IMDG, IATA
  - Class 6.1 Toxic substances
  - Label 6.1
  - ADR 6.1 (T2) Toxic substances
Trade name: Phenol natural

- Label: 6.1
- Packing group: DOT, ADR, IMDG, IATA
  - DOT, ADR, IMDG, IATA: II
- Environmental hazards:
  - Marine pollutant: No
- Special precautions for user
  - Danger code (Kemler): Warning: Toxic substances
  - EMS Number: F-A,S-A
  - 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: 25 kg
  - On cargo aircraft only: 100 kg
- ADR
  - Excepted quantities (EQ): Code: E4
    - Maximum net quantity per inner packaging: 1 g
    - Maximum net quantity per outer packaging: 500 g
- IMDG
  - Limited quantities (LQ): 500 g
  - Excepted quantities (EQ): Code: E4
    - Maximum net quantity per inner packaging: 1 g
    - Maximum net quantity per outer packaging: 500 g
- UN "Model Regulation": UN 1671 PHENOL, SOLID, 6.1, II

15 Regulatory information

- Safety, health and environmental regulations/legislation specific for the substance or mixture
  - Sara
    - Section 355 (extremely hazardous substances):
      - Substance is listed.
    - Section 313 (Specific toxic chemical listings):
      - Substance is listed.
  - TSCA (Toxic Substances Control Act):
    - Substance is listed.
  - Proposition 65
    - Chemicals known to cause cancer:
      - Substance is not listed.
    - Chemicals known to cause reproductive toxicity for females:
      - Substance is not listed.
Trade name: Phenol natural

- Chemicals known to cause reproductive toxicity for males:
  Substance is not listed.

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

- Carcinogenic categories
  - EPA (Environmental Protection Agency)
    D, I
  - TLV (Threshold Limit Value established by ACGIH)
    A4
  - NIOSH-Ca (National Institute for Occupational Safety and Health)
    Substance is not listed.

- GHS label elements
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  The substance is classified and labeled according to the Globally Harmonized System (GHS).

- Hazard pictograms
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  - GHS06
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- Signal word Danger

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  P361 + P364 Take off immediately all contaminated clothing and wash it before reuse.
  P405 Store locked up.
  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.
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 02/11/2019 / -
· 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
  EINECS: 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
  BEI: Biological Exposure Limit
  Acute Tox. 3: Acute toxicity – Category 3
  Skin Corr. 1B: Skin corrosion/irritation – Category 1B
  Mut. 2: Germ cell mutagenicity – Category 2
  STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2