1. IDENTIFICATION

Product Description: PHENYLACETALDEHYDE FCC

CAS # 122-78-1
FEMA Number 2874

Other means of identification
Vigon Item # 500316

Recommended use Concentrated aromatic and flavor ingredient which may be used in flavor and fragrance compounds according to legal and IFRA or FEMA GRAS/FDA guidelines.

Recommended restrictions For Manufacturing Use Only

Company Vigon International, LLC
Address 127 Airport Road
E. Stroudsburg, PA 18301
For information call: 570-476-6300
Web Site: www.vigon.com

Manufacturer/Importer/Supplier/Distributor information

2. HAZARD(S) IDENTIFICATION

Physical hazards Flammable liquids Category 4

Health hazards Acute toxicity, oral Category 4
Acute toxicity, dermal Category 5
Skin corrosion/irritation Category 1
Serious eye damage/eye irritation Category 1
Sensitization, skin Category 1
Aspiration hazard Category 1

Environmental hazards Not classified.
SAFETY DATA SHEET
500316 PHENYLACETALDEHYDE FCC

Label elements

Signal word
Danger

Hazard statement
Combustible liquid. Harmful if swallowed. May be fatal if swallowed and enters airways. May be harmful in contact with skin. Causes severe skin burns and eye damage. May cause an allergic skin reaction. Causes serious eye damage.

Precautionary statement

Prevention
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Do not breathe mist/vapors. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Contaminated work clothing should not be allowed out of the workplace. Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.

Response
IF SWALLOWED: Immediately call a POISON CENTER/doctor. Rinse mouth. Do NOT induce vomiting. IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. IF INHALED: Remove person to fresh air and keep comfortable for breathing. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor. If skin irritation or rash occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse. In case of fire: Use appropriate media to extinguish.

Storage
Store in a well-ventilated place. Store locked up.

Disposal
Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise classified (HNOC)
After prolonged contact with highly porous materials, this product may spontaneously combust.

Supplemental information
100% of the substance consists of component(s) of unknown acute inhalation toxicity. 100% of the substance consists of component(s) of unknown acute hazards to the aquatic environment. 100% of the substance consists of component(s) of unknown long-term hazards to the aquatic environment.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substances

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Common name and synonyms</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHENYLACETALDEHYDE</td>
<td>oxo phenyl ethane</td>
<td>122-78-1</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>phenyl ethanal</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>benzyl carboxaldehyde</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Benzeneacetaldehyde</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ALPHA-TOLYLALDEHYDE</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2- phenylacetaldehyde</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4. FIRST-AID MEASURES

Inhalation
If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. For breathing difficulties, oxygen may be necessary. Call a physician if symptoms develop or persist.
5. FIRE-FIGHTING MEASURES

Suitable extinguishing media
Water spray, fog, CO2, dry chemical, or alcohol resistant foam.

Unsuitable extinguishing media
Do not use a solid water stream as it may scatter and spread fire.

Specific hazards arising from the chemical
Fire may produce irritating, corrosive and/or toxic gases. Porous material such as rags, paper, insulation, or organic clay may spontaneously combust when wetted with this material.

Special protective equipment and precautions for firefighters
Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA. Structural firefighters protective clothing will only provide limited protection. Wear self-contained breathing apparatus with a full facepiece operated in the positive pressure demand mode when fighting fires.

Fire fighting equipment/instructions
In case of fire and/or explosion do not breathe fumes. Use standard firefighting procedures and consider the hazards of other involved materials. Move containers from fire area if you can do so without risk. Water runoff can cause environmental damage. Ventilate closed spaces before entering them. Keep run-off water out of sewers and water sources. Dike for water control.

Specific methods
Use standard firefighting procedures and consider the hazards of other involved materials.

General fire hazards
Static charges generated by emptying package in or near flammable vapor may cause flash fire.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures
Eliminate all sources of ignition. Avoid contact with skin or inhalation of spillage, dust or vapor. Keep unnecessary personnel away. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them.
Methods and materials for containment and cleaning up

Collect and dispose of spillage as indicated in section 13 of the SDS.

Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb with inert absorbent such as dry clay, sand or diatomaceous earth, commercial sorbents, or recover using pumps. Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area).

Never return spills in original containers for re-use. This material and its container must be disposed of as hazardous waste. Prevent product from entering drains.

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, dry sand or earth and place into containers.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Environmental precautions

Retain and dispose of contaminated wash water. Avoid release to the environment. Contact local authorities in case of spillage to drain/aquatic environment. Prevent further leakage or spillage if safe to do so. Do not contaminate water.

7. HANDLING AND STORAGE

Precautions for safe handling

Do not handle or store near an open flame, heat or other sources of ignition. Porous material such as rags, paper, insulation, or organic clay may spontaneously combust when wetted with this material. May auto-oxidize with sufficient heat generation to ignite if spread (as a thin film) or absorbed on porous or fibrous material. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Contaminated rags and cloths must be put in fireproof containers for disposal. Avoid breathing vapor. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. Wash thoroughly after handling.

Conditions for safe storage, including any incompatibilities

Do not store in direct sunlight. Keep container closed. Handle containers with care. Open slowly in order to control possible pressure release. Store in a cool, well-ventilated area. Keep under a nitrogen blanket.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational exposure limits

This substance has no PEL, TLV, or other recommended exposure limit.

Biological limit values

No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls

Use explosion-proof ventilation equipment to stay below exposure limits.

Individual protection measures, such as personal protective equipment

Eye/face protection

Wear safety glasses with side shields (or goggles). Wear safety glasses with side shields (or goggles). Face shield is recommended.

Skin protection

Hand protection

Chemical resistant gloves.

Other

Use of an impervious apron is recommended.

Respiratory protection

In case of insufficient ventilation, wear suitable respiratory equipment.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations

When using do not smoke. Keep away from food and drink. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Contaminated work clothing should not be allowed out of the workplace.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance
- Refer to Spec Sheet
  - Physical state: Liquid.
  - Form: Liquid.
  - Color: Refer to Spec Sheet

Odor
- Characteristic.

Odor threshold
- Not available.

pH
- Not available.

Melting point/freezing point
- 14 °F (-10 °C)

Initial boiling point and boiling range
- 379.4 °F (193 °C)

Flash point
- 154.0 °F (67.8 °C) Closed Cup

Evaporation rate
- Not available.

Flammability (solid, gas)
- Not applicable.

Upper/lower flammability or explosive limits
- Not available.

Explosive limit - lower (%)
- Not available.

Explosive limit - upper (%)
- Not available.

Vapor pressure
- 0.37 mm Hg at 25 °C

Vapor density
- 4.2

Relative density
- Not available.

Solubility(ies)
- Insoluble
  - Solubility (water)

Partition coefficient
- Not available.

(n-octanol/water)

Auto-ignition temperature
- Not available.

Decomposition temperature
- Not available.

Viscosity
- Not available.

Other information
- Density: 0.93 g/cm³ estimated at 25 °C
- Explosive properties: Not explosive.
- Flammability class: Combustible IIIA estimated
- Molecular weight: 120.15 g/mol
- Oxidizing properties: Not oxidizing.
- Specific gravity: 0.93 at 25 °C
10. STABILITY AND REACTIVITY

Reactivity
The product is stable and non-reactive under normal conditions of use, storage and transport.

Chemical stability
Material is stable under normal conditions.

Possibility of hazardous reactions
No dangerous reaction known under conditions of normal use.

Conditions to avoid
Porous material such as rags, paper, insulation, or organic clay may spontaneously combust when wetted with this material.

Incompatible materials
Strong oxidizing agents.

Hazardous decomposition products
No hazardous decomposition products if stored and handled as indicated.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Inhalation
May cause irritation to the respiratory system.

Skin contact
Causes severe skin burns. May be harmful in contact with skin. May cause an allergic skin reaction.

Eye contact
Causes serious eye damage.

Ingestion
Causes digestive tract burns. Harmful if swallowed. Droplets of the product aspirated into the lungs through ingestion or vomiting may cause a serious chemical pneumonia.

Symptoms related to the physical, chemical and toxicological characteristics
Aspiration may cause pulmonary edema and pneumonitis. Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result.

Information on toxicological effects

Acute toxicity
May be fatal if swallowed and enters airways. May be harmful in contact with skin.

<table>
<thead>
<tr>
<th>Product</th>
<th>Species</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHENYLACETALDEHYDE (CAS 122-78-1)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acute</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dermal</td>
<td>Rabbit</td>
<td>2500 mg/kg</td>
</tr>
<tr>
<td>Oral</td>
<td>Rat</td>
<td>1550 mg/kg</td>
</tr>
</tbody>
</table>

Skin corrosion/irritation
Causes severe skin burns and eye damage.

Serious eye damage/eye irritation
Causes serious eye damage.

Respiratory or skin sensitization

Respiratory sensitization
Due to partial or complete lack of data the classification is not possible.

Skin sensitization
May cause an allergic skin reaction.

Germ cell mutagenicity
Due to partial or complete lack of data the classification is not possible.

Carcinogenicity
Due to partial or complete lack of data the classification is not possible.
IARC Monographs. Overall Evaluation of Carcinogenicity
Not listed.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)
Not listed.

US. National Toxicology Program (NTP) Report on Carcinogens
Not listed.

Reproductive toxicity
Due to partial or complete lack of data the classification is not possible.

Specific target organ toxicity - single exposure
Due to partial or complete lack of data the classification is not possible.

Specific target organ toxicity - repeated exposure
Due to partial or complete lack of data the classification is not possible.

Aspiration hazard
May be fatal if swallowed and enters airways.

12. ECOLOGICAL INFORMATION

Ecotoxicity
The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Biodegradability: Closed Bottle test
Result: Readily biodegradable.
74%
Method: OECD 301D

Bioaccumulative potential
No data available.

Mobility in soil
No data available.

Other adverse effects
No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. DISPOSAL CONSIDERATIONS

Disposal instructions
Do not discharge into drains, water courses or onto the ground. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.

Local disposal regulations
Dispose in accordance with all applicable regulations.

Hazardous waste code
Not established.

Waste from residues / unused products
Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging
Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. TRANSPORT INFORMATION

ADN
UN number 3265
UN proper shipping name CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (PHENYLACETALDEHYDE)
Transport hazard class(es) 8
Subsidiary class(es) -
Packing group: II
Environmental hazards: No
Labels required: 8

ADR
UN number: 3265
UN proper shipping name: CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (PHENYLACETALDEHYDE)
Transport hazard class(es): 8
Subsidiary class(es): -
Packing group: II
Environmental hazards: No
Labels required: 8

RID
UN number: 3265
UN proper shipping name: CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (PHENYLACETALDEHYDE)
Transport hazard class(es): 8
Subsidiary class(es): -
Packing Group: II
Environmental Hazards: No
Labels required: 8
Special precautions for user: Read safety instructions, SDS and emergency procedures before handling.

DOT
BULK
UN number: 3265
Proper shipping name: CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (PHENYLACETALDEHYDE)
Hazard class: 8
Packing group: II
Environmental hazards: No
Marine pollutant: No
Labels required: 8

DOT
NON-BULK
UN number: 3265
Proper shipping name: CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (PHENYLACETALDEHYDE)
Hazard class: 8
Packing group: II
Environmental hazards: No
Marine pollutant: No
Labels required: 8

IATA
UN number: 3265
UN proper shipping name: CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (PHENYLACETALDEHYDE)
Transport hazard class(es): 8
Subsidiary class(es): -
Packing group: II
SAFETY DATA SHEET
500316 PHENYLACETALDEHYDE FCC

Revision Date: 04-03-2023
Version # 07
Page 9 of 11
Print Date: 04-03-2023

Environmental hazards
No
Labels required
8

IMDG
UN number
3265
UN proper shipping name
CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (PHENYLACETALDEHYDE)
Transport hazard class(es)
8
Subsidiary class(es)
-
Packing group
II
Environmental hazards
Marine pollutant
No
Labels required
8
Transport in bulk according to Annex II of MARPOL
Not applicable.

ADN; ADR; DOT BULK; DOT NON-BULK; IATA; IMDG; RID

15. REGULATORY INFORMATION

US federal regulations
This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Toxic Substances Control Act (TSCA)
TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)
Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)
Not listed.

SARA 304 Emergency release notification
Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)
Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)
SARA 302 Extremely hazardous substance
Not listed.

SARA 311/312 Hazardous chemical
Yes
Flammable (gases, aerosols, liquids, or solids)
Acute toxicity (any route of exposure)
Skin corrosion or irritation
Serious eye damage or eye irritation
Respiratory or skin sensitization
Aspiration hazard

SARA 313 (TRI reporting)
Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List
Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)
Not regulated.

Safe Drinking Water Act (SDWA)
Not regulated.

16. OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION

Issue date 11-23-2015
Revision date 04-03-2023
Version # 07

HMIS® ratings
Health: 3*
Flammability: 2
Physical hazard: 1

List of abbreviations
ACGIH: American Conference of Governmental Industrial Hygienists.
ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.
CAS: Chemical Abstract Service.
IARC: International Agency for Research on Cancer.
IATA: International Air Transport Association.
IMDG: International Maritime Dangerous Goods.
RID: Regulations concerning the International Carriage of Dangerous Goods by Rail.
STEL: Short term exposure limit.
TWA: Time Weighted Average.
Disclaimer

Vigon International, LLC cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available. The above information relates only to this product and not to its use in combination with any other material or any particular process and is designed only as guidance for the safe handling, use, processing, storage, transportation, and disposal and should not be considered as a guarantee or quality specification. This product has not been evaluated for safe use in e-cigarettes or any vaping application where the product(s) is/are intentionally vaporized and inhaled. Vigon International, Inc. has performed no testing on these products in e-cig/vaping applications. It is the sole responsibility of the individual(s) purchasing this product to assess its' safety in the final application. The above information relates only to this product and not to its use in combination with any other material or any particular process and is designed only as guidance for the safe handling, use, processing, storage, transportation, disposal, and should not be considered as a guarantee or quality specification. The above information is based on data provided by and collected from recognized sources such as distributors, manufacturers, and technical groups and is considered to be accurate to the best of Vigon's knowledge as of the date of this document. It is the responsibility of the user to review all safety information about this product and determine its safety and suitability in their own processes and operations. Appropriate warnings and safe handling procedures should be provided to all handlers and users, taking into account the intended use and the specific conditions and factors relating to such use in accordance with all applicable laws and regulations.

Revision information

HAZARD(S) IDENTIFICATION: Disposal
HAZARD(S) IDENTIFICATION: Prevention
HAZARD(S) IDENTIFICATION: Response
HAZARD(S) IDENTIFICATION: Storage
FIRE-FIGHTING MEASURES: Specific methods
EXPOSURE CONTROLS/PERSONAL PROTECTION: Eye/face protection
EXPOSURE CONTROLS/PERSONAL PROTECTION: Respiratory protection
EXPOSURE CONTROLS/PERSONAL PROTECTION: PPE Symbols
Physical & Chemical Properties: Multiple Properties
Toxicological Information: Toxicological Data
Transport Information: Proper Shipping Name/Packing Group
Regulatory Information: United States
OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION: Reference
s OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION: List of abbreviations