

SAFETY DATA SHEET**508258 ISOBORNEOL NATURAL (Crystals)**

Revision Date: 03-08-2018

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Version # 02

Print Date: 03-08-2018

1. IDENTIFICATION

| | |
|--------------------------------------|--|
| Product Description: | ISOBORNEOL NATURAL |
| CAS # | 124-76-5 |
| FEMA Number | 2158 |
| Other means of identification | |
| Vigon Item # | 508258 |
| 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, Inc.
127 Airport Road
E. Stroudsburg, PA 18301
For information call: 570-476-6300
Web Site: www.vigon.com

24 Hour Emergency Response Information

INFOTRAC (ACCT# 78928);
1-800-535-5053 WITHIN THE U.S.A.
1-352-323-3500 OUTSIDE THE U.S.A.

Manufacturer/Importer/Supplier/Distributor information**Manufacturer**

| | | |
|-------------------------------|---|--------------------|
| Company name | Vigon International, Inc. | |
| Address | 127 Airport Road E. Stroudsburg, PA 18301 United States | |
| Telephone | For information call: | 570-476-6300 |
| Website | www.vigon.com | |
| E-mail | Not available. | |
| Emergency phone number | INFOTRAC | (ACCT# 78928); |
| | 1-800-535-5053 | WITHIN THE U.S.A. |
| | 1-352-323-3500 | OUTSIDE THE U.S.A. |

2. HAZARD(S) IDENTIFICATION

| | | |
|------------------------------|---------------------------|------------|
| Physical hazards | Flammable solids | Category 1 |
| Health hazards | Skin corrosion/irritation | Category 2 |
| Environmental hazards | Not classified. | |

Label elements

| | |
|-------------------------|--|
| Signal word | Danger |
| Hazard statement | Flammable solid. Causes skin irritation. |

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Precautionary statement

Prevention

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Ground and bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Wash thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection.

Response

IF ON SKIN: Wash with plenty of water. If skin irritation 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 away from incompatible materials.

Disposal

Dispose of waste and residues in accordance with local authority requirements.

Hazard(s) not otherwise classified (HNOC)

WARNING! May form combustible dust concentrations in air. Avoid breathing dust.

Supplemental information

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

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substances

| Chemical name | Common name and synonyms | CAS number | % |
|----------------|--|------------|-----|
| EXO-2-BORNANOL | DL-iso borneol exo-2- hydroxy-1,7,7-trimethyl norbornane | 124-76-5 | 100 |

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.

Skin contact

Take off immediately all contaminated clothing. Get medical attention if irritation develops and persists. Wash skin thoroughly with soap and water for several minutes.

Eye contact

Remove contact lenses, if present and easy to do. Get medical attention if irritation develops and persists. Promptly wash eyes with plenty of water while lifting the eye lids.

Ingestion

Call a physician or poison control center immediately. If swallowed, rinse mouth with water (only if the person is conscious). Do not induce vomiting. If vomiting occurs, the head should be kept low so that stomach vomit doesn't enter the lungs.

Most important symptoms/effects, acute and delayed

Dusts may irritate the respiratory tract, skin and eyes. Skin irritation. May cause redness and pain.

Indication of immediate medical attention and special treatment needed

Not available.

General information

Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media

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



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| Unsuitable extinguishing media | Do not use a solid water stream as it may scatter and spread fire. |
| Specific hazards arising from the chemical | Explosion hazard: Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard. Fire may produce irritating, corrosive and/or toxic gases. |
| 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 water spray to cool unopened containers. |
| 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 | Keep unnecessary personnel away. Eliminate all sources of ignition. Avoid contact with skin or inhalation of spillage, dust or vapor. 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 | Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). Sweep up and place in a clearly labeled container for chemical waste. Wash contaminated area with water. Use only non-sparking tools. Avoid the generation of dusts during clean-up. This material and its container must be disposed of as hazardous waste. Collect and dispose of spillage as indicated in section 13 of the SDS. |
| Environmental precautions | Never return spills in original containers for re-use. 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 | Take precautionary measures against static discharges when there is a risk of dust explosion. Minimize dust generation and accumulation. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces. Dry powders can build static electricity charges when subjected to the friction of transfer and mixing operations. Provide adequate precautions, such as electrical grounding and bonding, or inert atmospheres. Do not handle or store near an open flame, heat or other sources of ignition. Assume that this material is capable of producing a dust explosion if ignited as a dust cloud. Take precautionary measures against static discharges. Avoid breathing vapor. Avoid breathing dust. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. Wash thoroughly after handling. |
| Conditions for safe storage, including any incompatibilities | Keep container closed. Handle containers with care. Open slowly in order to control possible pressure release. Store in a cool, well-ventilated area. |



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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 only appropriately classified electrical equipment and powered industrial trucks. It is recommended that all dust control equipment such as local exhaust ventilation and material transport systems involved in handling of this product contain explosion relief vents or an explosion suppression system or an oxygen-deficient environment. Ensure that dust-handling systems (such as exhaust ducts, dust collectors, vessels, and processing equipment) are designed in a manner to prevent the escape of dust into the work area (i.e., there is no leakage from the equipment). Use explosion-proof ventilation equipment to stay below exposure limits. Adequate ventilation should be provided so that exposure limits are not exceeded. |
| Individual protection measures, such as personal protective equipment | |
| Eye/face protection | Wear safety glasses with side shields (or goggles). |
| Skin protection | |
| Hand protection | Chemical resistant gloves. |
| Other | Not available. |
| Respiratory protection | Dust mask. |
| Thermal hazards | Wear appropriate thermal protective clothing, when necessary. |
| General hygiene considerations | When using, do not eat, drink or smoke. 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. |

9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|-----------------------------------|
| Appearance | Refer to Spec Sheet |
| Physical state | Powder\Crystal. |
| Form | Powder. Crystalline powder. |
| Color | Refer to Spec Sheet |
| Odor | Characteristic. |
| Odor threshold | Not available. |
| pH | Not available. |
| Melting point/freezing point | Not available. |
| Initial boiling point and boiling range | Not available. |
| Flash point | > 200.0 °F (> 93.3 °C) Closed Cup |
| Evaporation rate | Not available. |
| Flammability (solid, gas) | Flammable solid. |
| Upper/lower flammability or explosive limits | |
| Flammability limit - lower (%) | Not available. |
| Flammability limit - upper (%) | Not available. |

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| | |
|--|----------------|
| Explosive limit - lower (%) | Not available. |
| Explosive limit - upper (%) | Not available. |
| Vapor pressure | Not available. |
| Vapor density | Not available. |
| Relative density | Not available. |
| Solubility(ies) | |
| Solubility (water) | Insoluble |
| Partition coefficient (n-octanol/water) | Not available. |
| Auto-ignition temperature | Not available. |
| Decomposition temperature | Not available. |
| Viscosity | Not available. |
| Other information | |
| Explosive properties | Not explosive. |
| Molecular formula | C10-H18-O |
| Molecular weight | 154.24 g/mol |
| Oxidizing properties | Not oxidizing. |

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 | Keep away from heat, sparks and open flame. Avoid temperatures exceeding the flash point. Contact with incompatible materials. Minimize dust generation and accumulation. |
| 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 | Irritating to respiratory system. |
| Skin contact | Causes skin irritation. |
| Eye contact | Direct contact with eyes may cause temporary irritation. |
| Ingestion | Expected to be a low ingestion hazard. |

Symptoms related to the physical, chemical and toxicological characteristics
Dusts may irritate the respiratory tract, skin and eyes. Skin irritation. May cause redness and pain.

Information on toxicological effects

Acute toxicity
Not known.

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| Product | Species | Test Results |
|---|--|--------------|
| ISOBORNEOL NATURAL (CAS 124-76-5) | | |
| Acute | | |
| <i>Dermal</i> | | |
| LD50 | Rabbit | > 5000 mg/kg |
| <i>Oral</i> | | |
| LD50 | Rat | > 5000 mg/kg |
| Skin corrosion/irritation | Causes skin irritation. | |
| Serious eye damage/eye irritation | Direct contact with eyes may cause temporary irritation. | |
| Respiratory or skin sensitization | | |
| Respiratory sensitization | Not a respiratory sensitizer. | |
| Skin sensitization | This product is not expected to cause skin sensitization. | |
| Germ cell mutagenicity | No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic. | |
| Carcinogenicity | | |
| IARC Monographs. Overall Evaluation of Carcinogenicity | | |
| Not listed. | | |
| OSHA Specifically Regulated Substances (29 CFR 1910.1001-1052) | | |
| Not regulated. | | |
| US. National Toxicology Program (NTP) Report on Carcinogens | | |
| Not listed. | | |
| US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050) | | |
| Not available. | | |
| Reproductive toxicity | This product is not expected to cause reproductive or developmental effects. | |
| Specific target organ toxicity - single exposure | Not classified. | |
| Specific target organ toxicity - repeated exposure | Not classified. | |
| Aspiration hazard | Not an aspiration hazard. | |

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. |
| Persistence and degradability | No data is available on the degradability of this substance. |
| 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. |

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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

General This material does not have an established Vigon item number and will not be purchased or sold, therefore transportation evaluation is not required at this time. Any information contained in this section was the default information brought in by MSDgen and is not necessarily applicable to this material.

ADN

| | |
|-----------------------------------|---|
| UN number | 1325 |
| UN proper shipping name | FLAMMABLE SOLID, ORGANIC, N.O.S. (ISOBORNEOL) |
| Transport hazard class(es) | 4.1 |
| Subsidiary class(es) | - |
| Packing group | II |
| Environmental hazards | No |
| Labels required | 4.1 |

ADR

| | |
|-----------------------------------|---|
| UN number | 1325 |
| UN proper shipping name | FLAMMABLE SOLID, ORGANIC, N.O.S. (ISOBORNEOL) |
| Transport hazard class(es) | 4.1 |
| Subsidiary class(es) | - |
| Packing group | II |
| Environmental hazards | No |
| Labels required | 4.1 |

RID

| | |
|-------------------------------------|---|
| UN number | 1325 |
| UN proper shipping name | FLAMMABLE SOLID, ORGANIC, N.O.S. (ISOBORNEOL) |
| Transport hazard class(es) | 4.1 |
| Subsidiary class(es) | - |
| Packing Group | II |
| Environmental Hazards | No |
| Labels required | 4.1 |
| Special precautions for user | Read safety instructions, SDS and emergency procedures before handling. |

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DOT

BULK

| | |
|-----------------------|---|
| UN number | 1325 |
| Proper shipping name | FLAMMABLE SOLID, ORGANIC, N.O.S. (ISOBORNEOL) |
| Hazard class | 4.1 |
| Packing group | III |
| Environmental hazards | |
| Marine pollutant | No |
| Labels required | 4.1 |

DOT

NON-BULK

| | |
|-----------------------|---|
| UN number | 1325 |
| Proper shipping name | FLAMMABLE SOLID, ORGANIC, N.O.S. (ISOBORNEOL) |
| Hazard class | 4.1 |
| Packing group | III |
| Environmental hazards | |
| Marine pollutant | No |
| Labels required | 4.1 |

IATA

| | |
|----------------------------|---|
| UN number | 1325 |
| UN proper shipping name | FLAMMABLE SOLID, ORGANIC, N.O.S. (ISOBORNEOL) |
| Transport hazard class(es) | 4.1 |
| Subsidiary class(es) | - |
| Packing group | III |
| Environmental hazards | No |
| Labels required | 4.1 |

IMDG

| | |
|--|---|
| UN number | 1325 |
| UN proper shipping name | FLAMMABLE SOLID, ORGANIC, N.O.S. (ISOBORNEOL) |
| Transport hazard class(es) | 4.1 |
| Subsidiary class(es) | - |
| Packing group | II |
| Environmental hazards | |
| Marine pollutant | No |
| Labels required | 4.1 |
| Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code | Not applicable. |

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

**General information**

This material does not have an established Vigon item number and will not be purchased or sold, therefore transportation evaluation is not required at this time. Any information contained in this section was the default information brought in by MSDgen and is not necessarily applicable to this material.

15. REGULATORY INFORMATION**US federal regulations**

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

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

SARA 304 Emergency release notification

Not regulated.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not available.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1052)

Not regulated.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)**SARA 302 Extremely hazardous substance**

Not listed.

SARA 311/312 Hazardous chemical

Yes

Classified hazard categories

Flammable (gases, aerosols, liquids, or solids)
Combustible dust
Skin corrosion or irritation

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.

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Safe Drinking Water Act (SDWA) Not regulated.

US state regulations

California Proposition 65

California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance

Not listed.

International Inventories

| Country(s) or region | Inventory name | On inventory (yes/no)* |
|-----------------------------|--|------------------------|
| Australia | Australian Inventory of Chemical Substances (AICS) | Yes |
| Canada | Domestic Substances List (DSL) | Yes |
| Canada | Non-Domestic Substances List (NDSL) | No |
| China | Inventory of Existing Chemical Substances in China (IECSC) | Yes |
| Europe | European Inventory of Existing Commercial Chemical Substances (EINECS) | Yes |
| Europe | European List of Notified Chemical Substances (ELINCS) | No |
| Japan | Inventory of Existing and New Chemical Substances (ENCS) | Yes |
| Korea | Existing Chemicals List (ECL) | Yes |
| New Zealand | New Zealand Inventory | Yes |
| Philippines | Philippine Inventory of Chemicals and Chemical Substances (PICCS) | Yes |
| Taiwan | Taiwan Toxic Chemical Substances (TCS) | Yes |
| United States & Puerto Rico | Toxic Substances Control Act (TSCA) Inventory | Yes |

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

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

| | |
|----------------------------|---|
| Issue date | 03-08-2018 |
| Revision date | 03-08-2018 |
| Version # | 02 |
| Further information | Refer to NFPA 654, Standard for the Prevention of Fire and Dust Explosions from the Manufacturing, Processing, and Handling of Combustible Particulate Solids, for safe handling. |
| HMIS® ratings | Health: 2 Flammability: 3 Physical hazard: 0 |



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Disclaimer

Vigon International, Inc. 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

This document has undergone significant changes and should be reviewed in its entirety.