

SAFETY DATA SHEET

BLUEBERRY FLAVOR, NAT WONF

Section 1. Identification

GHS product identifier	: BLUEBERRY FLAVOR, NAT WONF
Product code	: 809.0110U
Relevant identified uses of the substance or mixture and uses advised against	Industrial/Professional use
Product type	: Liquid.
Supplier's details	: FONA International 1900 Averill Road USA-Geneva, IL 60134 reg@fona.com
Emergency telephone number (with hours of operation)	: During normal operation hours: Office: 630-578-8600 Chemtrec (24-hour HAZMAT Communications Center): 1-800-262-8200 (Outside US & Canada: 703-741-5500). Account Number: 8554

Section 2. Hazards identification

OSHA/HCS status	: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Classification of the substance or mixture	: SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2B

GHS label elements

Hazard pictograms

:



Signal word

: Warning

Hazard statements

: H315 + H320 - Causes skin and eye irritation.

Precautionary statements

General

: P103 - Read label before use.
P102 - Keep out of reach of children.
P101 - If medical advice is needed, have product container or label at hand.

Prevention

: P280 - Wear protective gloves.
P264 - Wash hands thoroughly after handling.

Response

: P302 + P352 + P362+P364 - IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing and wash it before reuse.
P332 + P313 - If skin irritation occurs: Get medical attention.
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P313 - If eye irritation persists: Get medical attention.

Storage

: Not applicable.

Disposal

: Not applicable.

Hazards not otherwise classified

: None known.

Section 3. Composition/information on ingredients

Substance/mixture	: Mixture
Other means of identification	: Not available.

Section 3. Composition/information on ingredients

Product/ingredient name	CAS #	%	Classification
1) Propylene glycol	57-55-6	≥75 - ≤90	Skin Irrit. 2, H315 Eye Irrit. 2B, H320

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

Trade secret provisions for the US can be found in 29 CFR 1910.1200(i).

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

- Eye contact** : Causes eye irritation.
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : Causes skin irritation.
- Ingestion** : No known significant effects or critical hazards.

Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:
pain or irritation
watering
redness
- Inhalation** : No specific data.
- Skin contact** : Adverse symptoms may include the following:
irritation
redness
- Ingestion** : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Specific treatments** : No specific treatment.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : None known.

Specific hazards arising from the chemical : In a fire or if heated, a pressure increase will occur and the container may burst.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : **WARNING** – This flavor may pose an inhalation hazard if improperly handled. Please contact your workplace safety officer before opening and handling, and read the SDS. Handling of this flavor that results in inhalation of fumes, especially if the flavor is heated, may cause severe adverse health effects.

The risk of respiratory injury for any chemical substance including flavoring substances is a function of the inherent toxicity of the chemical and the conditions under which it is handled resulting in sufficient exposure to cause effects. Exposure conditions which might increase the risk of respiratory injury include:

1. High exposure concentration levels;
2. Repeated or long term exposure at lower air concentrations;
3. The heating of the flavoring substance resulting in increased volatility; and
4. Exposure in the absence of appropriate safety measures including: local and area ventilation, other process, engineering and administrative controls, and personal protective equipment.

Even low priority chemicals may pose hazards when handled under more extreme conditions of exposure. Examples of more extreme exposure conditions include heating the flavoring substance to higher temperatures thereby increasing volatility or mixing and blending activities that could significantly increase air concentrations.

Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Section 7. Handling and storage

- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
- Conditions for safe storage, including any incompatibilities** : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
1) Propylene glycol	AIHA WEEL (United States, 10/2011). TWA: 10 mg/m ³ 8 hours.

- Appropriate engineering controls** : General protective and hygienic measures:
Immediately remove all soiled and contaminated clothing.
Wash hands before breaks and at the end of work.
Avoid contact with the eyes.
- Breathing equipment:
The implementation of appropriate process and engineering controls is generally preferable to simply providing employees with personal respiratory protection when handling flavoring substances. However, if respiratory protection is necessary, the employer should provide to employees a respirator that provides both high efficiency particulate air (HEPA or P100) filtration for particulates and also provides protection against organic vapors (as applicable, HEPA/OV cartridge, P100/OV cartridge, or atmosphere supplying respirators). The Flavor and Extract Manufacturers Association of the United States (FEMA) like NIOSH recommends that all companies handling flavor substances have a health and safety program oriented around the following five areas of emphasis:
1. Management and employee awareness through education and hazard communication.
 2. Exposure assessment and control.
 3. Medical surveillance.
 4. Material handling strategies and engineering controls for manufacturing, storage, packing and shipping facilities.
 5. Personal respiratory protection.
- See Technical Guidance Document, Section 16
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.
- Individual protection measures**
- Hygiene measures** : Wash hands and forearms thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.
- Skin protection**
- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Section 8. Exposure controls/personal protection

Respiratory protection : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties

Appearance

Physical state : Liquid.
Color : Characteristic
Odor : Characteristic
Odor threshold : Not available.
pH : Not available.
Melting point : Not available.
Boiling point : Not available.
Flash point : Closed cup: 94°C (201.2°F)
Evaporation rate : Not available.
Flammability (solid, gas) : Not available.
Lower and upper explosive (flammable) limits : Not available.
Vapor pressure : Not available.
Vapor density : Not available.
Relative density : Not available.
Solubility : Not available.
Solubility in water : Not available.
Partition coefficient: n-octanol/ water : Not available.
Auto-ignition temperature : Not available.
Decomposition temperature : Not available.
Viscosity : Not available.

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.
Chemical stability : The product is stable.
Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid : No specific data.
Incompatible materials : No specific data.
Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Propylene glycol	LD50 Dermal	Rabbit	20800 mg/kg	-
	LD50 Oral	Rat	20 g/kg	-

Irritation/Corrosion

Section 11. Toxicological information

Product/ingredient name	Result	Species	Score	Exposure	Observation
Propylene glycol	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Eyes - Mild irritant	Rabbit	-	100 milligrams	-
	Skin - Moderate irritant	Child	-	96 hours 30 Percent continuous	-
	Skin - Mild irritant	Human	-	168 hours 500 milligrams	-
	Skin - Moderate irritant	Human	-	72 hours 104 milligrams Intermittent	-
	Skin - Mild irritant	Woman	-	96 hours 30 Percent	-

Sensitization

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely routes of exposure : Not available.

Potential acute health effects

Eye contact : Causes eye irritation.
Inhalation : No known significant effects or critical hazards.
Skin contact : Causes skin irritation.
Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following:
 pain or irritation
 watering
 redness
Inhalation : No specific data.
Skin contact : Adverse symptoms may include the following:
 irritation
 redness
Ingestion : No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.
Potential delayed effects : Not available.

Section 11. Toxicological information

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Not available.

General : No known significant effects or critical hazards.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
Propylene glycol	Acute EC50 >110 ppm Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 1020000 µg/l Fresh water	Crustaceans - Ceriodaphnia dubia	48 hours
	Acute LC50 710000 µg/l Fresh water	Fish - Pimephales promelas	96 hours

Persistence and degradability

Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	DOT Classification	TDG Classification	ADR/RID	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-	-	-
Transport hazard class(es)	-	-	-	-	-
Packing group	-	-	-	-	-
Environmental hazards	No.	No.	No.	No.	No.

Additional information

Section 14. Transport information

Special precautions for user : **Transport within user's premises**: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Section 15. Regulatory information

SARA 302/304

Composition/information on ingredients

No products were found.

SARA 304 RQ : Not applicable.

SARA 311/312

Classification : SKIN IRRITATION - Category 2
EYE IRRITATION - Category 2B

State regulations

Massachusetts : None of the components are listed.

New York : None of the components are listed.

New Jersey : The following components are listed: PROPYLENE GLYCOL; 1,2-PROPANEDIOL

Pennsylvania : The following components are listed: 1,2-PROPANEDIOL

Section 16. Other information

Hazardous Material Information System (U.S.A.)

Health	/	2
Flammability		0
Physical hazards		0
*		

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings and the associated label are not required on SDSs or products leaving a facility under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered trademark and service mark of the American Coatings Association, Inc.

* The customer is responsible for determining the PPE code for this material. For more information on HMIS® Personal Protective Equipment (PPE) codes, consult the HMIS® Implementation Manual.

National Fire Protection Association (U.S.A.)



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Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

History

Date of printing : 9/21/2020
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Date of previous issue : No previous validation
Version : 1

Section 16. Other information

Key to abbreviations :

- ATE = Acute Toxicity Estimate
- BCF = Bioconcentration Factor
- GHS = Globally Harmonized System of Classification and Labelling of Chemicals
- IATA = International Air Transport Association
- IBC = Intermediate Bulk Container
- IMDG = International Maritime Dangerous Goods
- LogPow = logarithm of the octanol/water partition coefficient
- MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
- UN = United Nations

References :

Technical Guidance on the Safe Use and Handling of Flavoring Substances

Maintaining a safe and healthy workplace is of utmost importance to FONA and to all members of the flavors and extracts industry. While it is well known that flavors and extracts are inherently safe under conditions of intended use in food, beverage and other consumer products, there have been reports of serious respiratory illness in workers associated with exposure by inhalation to a small number of flavor substances. Most flavoring substances are not associated with reports of severe respiratory illness; however, flavoring substances are chemicals and as such may pose a health risk to workers if exposed to high concentrations of fumes and vapors. In addition to the Safety Data Sheets received with each shipment of flavoring product, FONA would like to provide you with the following additional technical guidance on the safety and health of flavoring substances. FONA has limited knowledge of your R&D and manufacturing processes or applications. As such, FONA makes no specific opinions or recommendations as to the safety of your formulations, inventory, work in process or finished food products or material product testing. Accordingly, FONA strongly recommends that you make every effort to assure the safety and health of your employees and customers through independent testing, workplace safety and health evaluations. The following information may be useful to you in the conduct of those evaluations.

DHHS NIOSH Publication 2016-111

The National Institute for Occupational Safety and Health (NIOSH) has issued a Criteria for a Recommended Standard focusing on Occupational Exposure to Diacetyl and 2,3-Pentanedione. The criteria focuses on the specific hazards of these two flavoring materials but also provides information on the general aspects of handling flavorings. Breathing certain flavoring chemicals in the workplace may lead to severe lung disease. FONA has complied with the NIOSH recommendations in the document and strongly advises you to do the same. The link to the full report is: <https://www.cdc.gov/niosh/docs/2016-111/pdfs/2016-111-all.pdf>

Some of the recommendations made by NIOSH include:

1. An understanding of the conditions under which employees may be exposed to flavoring substances through the inhalation of vapors, dusts or sprays.
2. Reading labels and SDSs provided for all flavorings and ingredients.
3. Limiting worker exposures through use of engineering controls, administrative controls, training and personal protective equipment.
4. Evaluating the potentially exposed workers for the presence of breathing effects and the workplace air for the presence of flavoring substances.

FEMA: Respiratory Health and Safety in the Flavor Manufacturing Workplace

The Flavor and Extract Manufacturers Association of the United States (FEMA) issued a guidance document titled Respiratory Health and Safety in the Flavor Manufacturing Workplace. As a member of FEMA, FONA has used the guidance in this document to establish a successful respiratory safety program and recommends that you take the opportunity to review the guidance and incorporate the recommendations made herein. The link to the complete FEMA document is: https://www.femaflavor.org/sites/default/files/linked_files/FEMA_2012%20Respiratory%20Health%20and%20Safety.pdf

Many flavoring substances with lower molecular weights and high vapor pressures also have sufficient irritant potential to result in respiratory effects if inhaled at high concentrations or for prolonged periods of time. FEMA has developed a list of flavoring substances that may potentially pose a respiratory hazard in the workplace. These have been prioritized into high or low priority based on chemical structure, available inhalation exposure data in humans and animals, volatility and volume of use. The risk of respiratory injury for any chemical substance including flavoring substances is a function of the inherent toxicity of the chemical and the conditions under which it is handled resulting in sufficient exposure to cause effects. Exposure conditions which might increase the risk of respiratory injury include:

1. High exposure concentration levels
2. Repeated or long term exposure at lower air concentrations
3. The heating of the flavoring substance resulting in increased volatility
4. Exposure in the absence of appropriate safety measures including: local and area ventilation, other process, engineering and administrative controls, and personal protective equipment.

Low priority chemicals usually pose hazards only when handled under more extreme conditions of exposure. Examples of more extreme exposure conditions include heating the flavoring substance to even higher temperatures thereby increasing volatility or mixing and blending activities that could significantly increase air concentrations.

FEMA, like NIOSH recommends that all companies handling flavor substances have a health and safety program oriented around the following five areas of emphasis:

1. Management and employee awareness through education and hazard communication
2. Exposure assessment and control
3. Medical surveillance
4. Material handling strategies and engineering controls for manufacturing, storage, packing and shipping facilities
5. Personal respiratory protection

 Indicates information that has changed from previously issued version.

Notice to reader

Section 16. Other information

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