[POMEGRANATE]

SAFETY DATA SHEET

FLOW SCIENTIFIC LTD.

Revision Date: (08/09/2019)

Section 1: Identification

Product Identifier

Trade Name or Designation	Trade Secret, Proprietary Botanical Blend: POMEGRANATE
Brand	Flow Scientific Ltd.
CAS No.	Mixture
Recommended Use and Restrictions on:	This product is intended for use only by adults 21 or older. Do not use if you are pregnant, nursing or a person with or at risk of serious health conditions including but not limited to: heart disease, high blood pressure, diabetes or a person taking medicine for depression or asthma. Discontinue use and consult your doctor if and adverse reaction occurs. This is not a smoking cessation product.

Company Information

Company	Flow Scientific Ltd.
Address	Unit 8 9670 188 St. Surrey, BC V3S1V6 Canada
Telephone	(604) 371-3569
Website	www.flowsci.com

Emergency Contact

Poison Control BC	1-800-567-8911
Emergency	911

Section 2: Hazard(s) Identification

Classification of the Substance or Mixture

For the full text of the Hazard Statements listed below, see Section 16.

Hazard Class	Category	Hazard Statement	Precautionary Statements
Flammable Liquids	Category 3	H226	P201, P210, P220, P233, P240, P242, P243, P270, P280, P370+P378, P371+P380, P381
Skin Corrosion / Irritation	Category 2	H315	P262, P264, P280, P302+P352, P332+P313, P362, P363
Skin Sensitizer	Category 1	H317	P262, P264, P280, P302+P352, P332+P313, P362, P363
Eye Damage / Irritation	Category 2A	H319	P262, P280, P305+P351+P338, P337+P313
Aspiration Hazard	Category 1	H304	P261, P280, P304+P340, P342+P311
Acute toxicity, Oral	Category 4	H302	P201, P264, P270, P280, P301+P312+P330
Acute toxicity, Inhalation	Category 4	H332	P201, P261, P280, P271, P304 + P340 + P312
Hazardous to the Aquatic Environment (Acute)	Category 1	H400	P201, P233, P273, P501
Hazardous to the Aquatic Environment (Chronic)	Category 1	H410	P201, P233, P273, P501

GHS Label Elements

Pictograms

Signal Word Danger

Hazard Statements

Hazard Number	Hazard Statement
H226	Flammable liquid and vapor.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H304	May be fatal if swallowed and enters airways .
H410	Very toxic to aquatic life with long lasting effects.

Precautionary Statements

Precautionary Number	Precautionary Statement
P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P210	Keep away from heat, sparks and open flame. No smoking.
P220	Keep/Store away from clothing/…/combustible materials.
P233	Keep container tightly closed.
P240	Ground/bond container and receiving equipment.
P241	Use explosion-proof electrical/ventilating/lighting equipment.
P242	Use only non-sparking tools.
P243	Take precautionary measures against static discharge.
P260	Do not breathe fumes, mist, vapors, or spray.
P261	Avoid breathing dust, fumes, gas, mist, vapors, or spray.
P262	Do not get in eyes, on skin, or on clothing.
P264	Wash skin thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P272	Contaminated work clothing must not be allowed out of the workplace.
P273	Avoid release to the environment.
P280	Wear protective gloves, eye protection and skin protection.
P301 + P312 + P330	IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth.
P302+P352	IF ON SKIN: Wash with plenty of soap and water.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
P304 + P340 + P312	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P311	IF exposed or concerned: Call a POISON CENTER or physician.
P308+P313	IF exposed or concerned: Get medical attention.
P330	Rinse mouth.
P331	Do NOT induce vomiting.
P333+P313	If skin irritation occurs: Get medical attention.
P337+P313	If eye irritation persists: Get medical attention.
P342+P311	If experiencing respiratory symptoms: Call a POISON CENTER or physician.
P362	Take off contaminated clothing.
P363	Wash contaminated clothing before reuse.
P370+P378	In case of fire: Use dry chemical, foam or carbon dioxide to extinguish.
P371+P380	In case of major fire and large quantities: Evacuate area.

P381	Eliminate all ignition sources if safe to do so.
P403 + P233	Store in well-ventilated place. Keep container tightly closed.
P403+P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.
P501	Dispose of contents/container to an approved waste disposal plant.

Hazard(s) not Otherwise Classified (HNOC) - none.

Section 3: Composition / Information on Ingredients

Components of Substance or Mixture

Chemical Name	Formula	Molecular Weight	CAS Number	EC Number
A-Pinene	C10H16	136.23	80-56-8	232-087-8
Camphene	C10H16	136.23	79-92-5	201-234-8
B-Pinene	C10H16	136.23	18172-67-3	242-060-2
Limonene	C10H16	136.23	5989-27-5	227-813-5
Benzyl Alcohol	C7H8O	108.14	100-51-6	202-859-9
Linalool	C10H18O	154.24	78-70-6	201-134-4
B-Caryophyllene	C15H24	204.36	87-44-5	201-746-1
Humulene Alpha	C15H24	204.35	6753-98-6	229-816-7
Caryophyllene Oxide	C15H24O	220.35	1139-30-6	214-519-7

Contains other natural and synthetic ingredients

Specific chemical identities and/or exact percentage (concentration) of composition has been withheld as a trade secret.

Hazardous Components

Component	Classification
A-Pinene	Flam.liq.3; Skin Irrit 2; Eye Irrit 2A; STOT SE 3; Aquatic Chronic 4; H226, H315, H319, H335, H413
Camphene	Flam.Sol.2; Eye Irrit.2A; Aquatic Acute 1; Aquatic Chronic 1; H228, H319, H410
B-Pinene	Flam.liq.3; Skin Irrit 2,1; Asp. Tox. 1; Aquatic Acute 1; Aquatic Chronic 1; H226, H315, H317, H304, H400, H410
Limonene	Flam.liq.3; Skin Irrit 2,1; Asp. Tox. 1; Aquatic Acute 1; Aquatic Chronic 1; H226, H315, H317, H304; H400, H410
Benzyl Alcohol	Acute.Tox.4; Eye.Irrit.2A; Aquatic.acute.2; H302, H332, H319, H401
Linalool	Flam.liq.4; Skin Irrit. 2; Eye Irrit. 2A; Skin Sens. 1; Aquatic Acute 3; H227, H315, H317, H319, H402
B-Caryophyllene	Asp. Tox. 1; H304
Humulene	Flam.liq.4; Skin Irrit 2; Eye Irrit 2A; STOT SE 3; H227, H315, H319, H335

Section 4: First-Aid Measures

General First Aid Information

General Advice	Move out of dangerous area. Consult a physician. Show this safety data sheet to the doctor in attendance.
If inhaled	If breathed in, move person to fresh air and keep comfortable for breathing. If not breathing, give artificial respiration. Consult a physician.
In case of eye contact	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Irrigate immediately with large quantities of water for at least 15 minutes. Consult a physician.
In case of skin contact	Take off immediately all contaminated clothing. Rinse skin thoroughly with plenty of water for at least 15 minutes and consult a physician.
If swallowed	Do not induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth out with water. Consult a physician.

Most Important Symptoms / Effects, Acute and Delayed

The most important known symptoms and effects are described in the labeling (see section 2.2) and/or in section 11.

Indication of any medical attention or special treatment needed

No data available.

Section 5: Fire-Fighting Measures

Extinguishing Media

Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical, or carbon dioxide.

Specific Hazards Arising from the Substance or Mixture

Carbon oxides

Special Protective Equipment for Firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

Further Information

Use water spray to cool unopened containers.

Section 6: Accidental Release Measures

Personal Precautions, Protective Equipment and Emergency Procedures

Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas. For personal protection see section 8.

Environmental Precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Cleanup and Containment Methods and Materials

Remove all sources of ignition. Contain spill. Absorb with suitable inert material (vermiculite, dry sand, etc) and place in a chemical waste container for proper disposal in an approved waste disposal facility. Ventilate area of spill. Have extinguishing agent available in case of fire. Use non-sparking tools and equipment.

Reference to Other Sections

For disposal see section 13.

Section 7: Handling and Storage

Precautions for Safe Handling and Storage Conditions

Keep container tightly closed in a dry, cool and well-ventilated place. Store in a well-ventilated place. As with all chemicals, wash hands thoroughly after handling. Avoid contact with eyes and skin. Protect from freezing and physical damage. Store in secure, flammable storage area away from all sources of ignition. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Stored class (TRGS 510): 10: Combustible liquids. Empty containers may be hazardous since they retain product residues.

Section 8: Exposure Controls / Personal Protection

Control Parameters

Components with workplace control parameters

Component	CAS Number	Value	Control Parameters	Basic	Remarks
α-Pinene	80-56-8	TWA	20 ppm	USA. ACGIH Threshold Limit Value (TLV)	Central Nervous System impairment Upper Respiratory Tract irritation Lung damage Skin irritation Adopted values or notations enclosed are those for which changes are proposed in the NIC See Notice of Intended Changes (NIC) Not classifiable as a human carcinogen Dermal Sensitizer
D-Limonene	5989-27-5	TWA	20 ppm	USA. ACGIH Threshold Limit Value (TLV)	Central Nervous System impairment Upper Respiratory Tract irritation Lung damage Skin irritation Adopted values or notations enclosed are those for which changes are proposed in the NIC See Notice of Intended Changes (NIC) Not classifiable as a human carcinogen Sensitizer varies

Exposure Controls

Engineering Controls

Handle in accordance with good industrial hygiene and safety practice.

Personal Protective Equipment (PPE)

Eye/face Protection

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) and EN 166 (EU).

Skin Protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact Material: butyl-rubber Minimum layer thickness: 0.3 mm Break through time: 480 min Material tested:Butoject® (KCL 897 / Aldrich Z677647, Size M)

Splash contact Material: Nitrile rubber Minimum layer thickness: 0.4 mm Break through time: 30 min Material tested:Camatril® (KCL 730 / Aldrich Z677442, Size M)

This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection

Complete suit protecting against chemicals. Flame retardant antistatic protective clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory Protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of Environmental Exposure

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Section 9: Physical and Chemical Properties

Basic Physical and Chemical Properties

Appearance	Clear, colorless to pale yellow liquid
Physical State	Liquid
Odor	Pomegranate, Sweet
Odor Threshold	Data not available.
pH	Data not available.
Melting Point / Freezing Point	Data not available.
Initial Boiling Point and Boiling Range	Data not available.
Flash Point	Data not available.
Evaporation Rate	Data not available.
Flammability	Data not available.
Flammability / Explosive Limits	Data not available.
Vapor Pressure	Data not available.
Vapor Density	Data not available.
Relative Density	0.85 at 25°C
Solubility (Water)	Insoluble
Partition Coefficient	Data not available.
Auto-ignition Temperature	Data not available.
Decomposition Temperature	Data not available.

Viscosity	Data not available.
Explosive Properties	Data not available.
Oxidizing Properties	Data not available.

Section 10: Stability and Reactivity

Reactivity

Data not available.

Chemical Stability

Stable under normal conditions of use, storage and transport.

Possibility of Hazardous Reactions

Data not available.

Conditions to Avoid

Heat, flames and sparks.

Incompatible Materials

Acids, Bases, Oxidizing agents, Reducing agents

Hazardous Decomposition Products

Hazardous decomposition products formed under fire conditions - Carbon oxides

Other decomposition products- Data not available

In the event of fire: see section 5

Section 11: Toxicological Information

Information on Toxicological Effects

Acute Toxicity - Oral Exposure

Data not available.

Acute Toxicity - Dermal Exposure

Data not available.

Acute Toxicity - Inhalation Exposure

Data not available.

Acute Toxicity - Other Information

Data not available.

Skin Corrosion and Irritation

Data not available.

Serious Eye Damage and Irritation

Data not available.

Respiratory Sensitization

Data not available.

Skin Sensitization

Data not available.

Germ Cell Mutagenicity

Data not available.

Carcinogenicity

This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification.

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive Toxicity

Data not available.

Specific Target Organ Toxicity from Single Exposure

Data not available.

Specific Target Organ Toxicity from Repeated Exposure

Data not available.

Aspiration Hazard

Data not available.

Additional Toxicology Information

Data not available.

Section 12: Ecological Information

Toxicity

Data not available.

Persistence and Degradability

Data not available.

Bioaccumulative Potential

Data not available.

Mobility in Soil

Data not available.

Other Adverse Ecological Effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Very toxic to aquatic life with long lasting effects.

Section 13: Disposal Considerations

Waste Treatment Methods

Product

Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging

Dispose of as unused product.

Section 14: Transport Information

Transportation by Land-Department of Transportation (DOT, United States of America)

Sizes	2mL, 10mL, 30mL, 100mL, 250mL, 500mL
UN Number	UN2319
Proper Shipping Name	Terpene hydrocarbons, n.o.s.
Hazard Class	3
Packing Group	III
Hazard Placard Labels	

Transportation by Air - International Air Transport Association (IATA)

Sizes	2mL, 10mL, 30mL, 100mL, 250mL, 500mL
UN Number	UN2319
Proper Shipping Name	Terpene hydrocarbons, n.o.s.
Hazard Class	3

Packing Group	III
Hazard Placard Labels	

Section 15: Regulatory Information

Occupational Safety and Health Administration (OSHA) Hazards

No OSHA hazards.

Superfund Amendments and Reauthorization Act (SARA) 302 Extremely Hazardous Substances

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

Superfund Amendments and Reauthorization Act (SARA) 311/312 Hazardous Chemicals

Fire Hazard, Acute Health Hazard, Chronic Health Hazard

Superfund Amendments and Reauthorization Act (SARA) 313 Toxic Release Inventory (TRI)

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Massachusetts Right-to-Know Substance List

α-Pinene CAS#80-56-8

Pennsylvania Right-to-Know Hazardous Substances

A-Pinene CAS#80-56-8
Camphene CAS#79-92-5
B-Pinene CAS#18172-67-3
Limonene CAS#5989-27-5
Benzyl Alcohol CAS#100-51-6
Linalool CAS#78-70-6
B-Caryophyllene CAS#87-44-5
Humulene Alpha CAS#6753-98-6
Caryophyllene Oxide CAS#1139-30-6

New Jersey Worker and Community Right-to-Know Components

A-Pinene CAS#80-56-8
Camphene CAS#79-92-5
B-Pinene CAS#18172-67-3
Limonene CAS#5989-27-5
Benzyl Alcohol CAS#100-51-6
Linalool CAS#78-70-6
B-Caryophyllene CAS#87-44-5
Humulene Alpha CAS#6753-98-6
Caryophyllene Oxide CAS#1139-30-6

California Proposition 65

This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

Section 16: Other Information

Full Text of Hazard Statements referred to under sections 2 and 3.

Acute Tox.	Acute Toxicity
Eye Irrit.	Eye Irritation
Aquatic Acute	Acute aquatic toxicity
Aquatic Chronic	Chronic aquatic toxicity

Asp. Tox.	Aspiration hazard
Flam.liq.	Flammable liquids
Flam. Sol.	Flammable solid
Skin Irrit.	Skin Irritation
STOT SE	Specific target organ toxicity-single exposure
H226	Flammable liquid and vapor.
H227	Combustible liquid
H228	Flammable solid
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H304	May be fatal if swallowed and enters airways.
H302	Harmful if swallowed
H332	Harmful if inhaled
H335	May cause respiratory irritation
H400	Very toxic to aquatic life.
H401	Toxic to aquatic life
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.

Miscellaneous Hazard Classes

Canadian Carcinogenicity Hazard Class	Not Available.
Physical Hazards Not Otherwise Classified (PHNOC)	Not Available.
Health Hazards Not Otherwise Classified (HHNOC)	Not Available.
Biohazardous Infectious Materials Hazard Class	Not Available.

HMIS Rating

Health Hazard	2
Fire Hazard	3
Reactivity Hazard	0

National Fire Protection Association (NFPA) Rating

Health	2
Chronic Health Hazard	*
Flammability	3
Reactivity	0
Physical Hazard	0

Document Revision

Issue Date	06/12/2019
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Version #	2

Disclaimer	Flow Scientific 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. Flow Scientific 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 Flow Scientific 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.

Flow Scientific Ltd

Certificate of Analysis

Product Name: Pomegranate

Lot#: 190705

Date of Analysis: 08/20/2019

Test	Specification	Result
Appearance	Clear colourless fluid	Pass
Refractive Index (20C)	1.4675 – 1.4695	1.4685
Density (20C)	0.8523 – 0.8823 (g/ml)	0.8673
GC-FID	Conforms to standard	Pass

Sincerely,

Dave Higgins

FOOD GRADE CERTIFICATION

Product Name: Pomegranate

Product Code: TFF-004

Flow Scientific Ltd. certifies that the above flavor or ingredient is FDA/FEMA GRAS. We would like to assure you that we use only flavor ingredients that are listed as being generally recognized as safe (GRAS) on a reliable published industry association (FEMA) list and/or are approved for use in a regulation of the U.S. Food and Drug Administration. We hereby certify that this flavor or ingredient is safe for its intended use in food.

Flow Scientific Ltd.. may terminate this certification at any time upon written notice in which this certification shall be null and void as to any material supplied after termination of the certification.

NON GMO STATEMENT

Product Name: Pomegranate

Product Code: TFF-004

Flow Scientific Ltd. declares that the product listed above is not derived from or produced using genetically modified organisms or their derivatives.

HEAVY METALS AND PESTICIDES STATEMENT

Product Name: Pomegranate

Product Code: TFF-004

Flow Scientific Ltd. declares that, to the best of our knowledge and belief, all ingredients in the product listed above are listed as being generally recognized as safe (GRAS) by the Food and Drug administration (FDA) when used in accordance with the FDA's good manufacturing practices (GMP) and contain no residues of heavy metals and pesticides in excess of tolerances set by the FDA and the Environmental Protection Agency (EPA).