

PRODUCT TECHNICAL DOSSIER

Ellagic Acid 90% (from pomegranate seed extract)

Product Code:

P05076

Raw Material Full Name:

Pomegranate Seed Extract

Raw Material Full Botanical/Chemical/Latin/Trade Name/Synonyms:

Punica granatum L.

This material is Food Grade:

Yes

Vegan / Vegetarian Status:

Suitable for both

Limit/Range/Specification:

Ellagic Acid Min 90%

Ratio of Material:

100:1

Solubility in Water:

Slightly soluble in water

Solubility in Alcohol:

Soluble in Alcohol

Particle Size:

80mesh

Percentage passed through:

Min 95%

Bulk Density:

0.35-0.65g/ml

Tapped Density:

0.45-0.75g/ml

Product Code: P05076

Version: 2



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Specific Gravity:

0.35-0.75g/ml

Loss on Drying:

Max 5%

Residue on Ignition:

Max 5%

Country of Origin:

China

Country of Origin of the Manufacture:

China

Base Source/Start Material:

Seed of *Punica granatum* L.

Origin of Product – Synthetic, Plant, Mineral, Animal, Fish or Fermented:

Plant

Species used:

Punica granatum L.

Part of the plant used:

Seed

Solvents used:

Ethanol and water

Material is:

100%

Compound Ingredients Origin, Function and Percentages:

None

Shelf Life from Date of Manufacture:

Min 2 Years

Storage Conditions:

This material is to be stored in a tightly sealed bag/container and to be kept in a cool place away from moisture and direct sunlight.

Product Code: P05076

Version: 2



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Appearance (Fine/Crystals/Crystalline/Hygroscopic):

Fine powder

Colour:

Grey

Flavour/Taste:

Characteristic

Odour:

Characteristic

Do any of the parameters change in different seasons?

No

Microbiological Test

Total Viable Count:

Max 10,000cfu/g

Yeast & Moulds:

Max 1,000cfu/g

E. coli:

Negative/10g

Salmonella:

Negative/25g

Coliforms:

Negative/10g

Staphylococcus aureus:

Negative/10g

Heavy Metals

Lead (Pb):

Max 3ppm

Cadmium (Cd):

Max 1ppm

Product Code: P05076

Version: 2



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Mercury (Hg):

Max 0.1ppm

Arsenic (As):

Max 1ppm

Pharmacopeia Standard Used:

CP

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Version: 2



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The allergen information is supplied by the manufacturer, we have not tested for each individual allergen to ensure they are not present. The information given is based on a documented risk assessment and is accurate to the best of our knowledge. If you intend to make a voluntary “free from” claim on your pack, additional testing may need to be carried out. For technical and labelling guidance you should always speak to the competent authority for the market or member state in which the final products are placed.

ALLERGENS	Product Contains YES/NO	Listed Item on Site at Manufacturer YES/NO	If YES, Please Comment
Peanuts and Peanut Derivatives (including possible cross contamination)	NO	NO	
Other Nut and Nut Derivatives <i>Almond (Amygdalus communis L.), Hazelnut (Corylus avellana), Walnut (Juglans regia), Cashew (Anacardium occidentale), Pecan nut (Carya illinoensis (Wangenh.) K. Koch), Brazil nut (Bertholletia excelsa), Pistachio nut (Pistacia vera), Macadamia nut and Queensland nut (Macadamia ternifolia)</i>	NO	NO	
Sesame Seeds and Sesame Seed Derivatives	NO	NO	
Other Seeds and Seed Derivatives (Poppy Seeds, Cotton Seeds, Sunflower Seeds)	NO	NO	
Milk and Milk Derivatives (including lactose)	NO	NO	
Egg and Egg Derivatives	NO	NO	
Cereals and Derivatives containing OR POTENTIALLY CONTAMINATED WITH Gluten <i>(wheat, wheatgrass, faro, freekeh, spelt, kamut, rye, oats, barley, barley grass)</i>	NO	NO	
Soya and Soya Derivatives	NO	NO	
Lupin and Lupin Derivatives	NO	NO	
Mustard and Mustard Derivatives	NO	NO	
Celery or Celery Derivatives (including Celeriac)	NO	NO	
Fish and Fish Derivatives	NO	NO	
Molluscs and their Derivatives	NO	NO	
Crustaceans and their Derivatives	NO	NO	
Sulphur Dioxide and Sulphites (E220, E228) at levels > 10mg/kg or 10mg/litre	NO	NO	

Product Code: P05076

Version: 2



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ADDITIVES / CONTAMINANTS / DIETARY REQUIREMENTS	Product Contains YES/NO	Listed Item on Site at Manufacturer YES/NO	If YES, Please Comment
Additives	NO	NO	
Antioxidants	NO	NO	
Ethylene Oxide	NO	NO	
Gelatine	NO	NO	
Flavourings (Artificial / Nature Identical / Natural / Smoked)	NO	NO	
Maize / Corn and any Derivatives	NO	YES	Maltodextrin made from corn
Legumes / Pulses	NO	NO	
Rice and Rice Derivatives	NO	NO	
Added Salt	NO	NO	
Added Sugar / artificial or natural sweeteners	NO	NO	
Aspartame	NO	NO	
BHA / BHT (E320 / E321)	NO	NO	
Caffeine	NO	NO	
Colours (Artificial / Nature Identical / Natural / Smoked)	NO	NO	
Dextrose	NO	NO	
Dioxins	NO	NO	
MSG (Added and Naturally Occurring E621) or Glutamates (E620 to E625)	NO	NO	
Nucleotides (E627, E630, E631, E635)	NO	NO	
Polyols (sugar alcohols)	NO	NO	
Benzoates (E210 / E219)	NO	NO	
Sorbic Acid (E200, E203)	NO	NO	
Any other Preservatives	NO	NO	
Ethanol	NO	NO	
Honey	NO	NO	
Lactose	NO	NO	
Yeast and Yeast Derivatives	NO	NO	
All Animal Products (Beef, Pork, Poultry or other) and Derivatives (which may include growth/yield hormones, antibiotics etc.)	NO	NO	
Bovine Products or Derivatives (which may include growth/yield hormones, antibiotics etc.)	NO	NO	As extract solvent for other product

Product Code: P05076

Version: 2



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CONFIRMATION OF BSE/TSE STATUS

This is to certify that this product complies with all relevant current UK and EU Legislative requirements in regard to Transmissible Spongiform Encephalopathies (TSE) and Bovine Spongiform Encephalopathy (BSE) for human food, and so is free of TSE/BSE.

This is also to certify that, during the course of their manufacture, the above-mentioned product did not come into contact with any materials, which could be derived from TSE/BSE risk materials.

CONFIRMATION OF GM STATUS

This is to certify that this product is not manufactured from GM raw materials and is therefore not subject to labelling under regulations 1829/2003/EC and 1830/2003/EC.

CONFIRMATION OF NON IRRADIATION STATUS

This is to certify that this product, whole or in part, has not been subjected to Ionising Radiation as per European Directives 1999/3/EC.

CONFIRMATION OF NANDROLONE STATUS

This is to certify that this product, whole or in part, has not come into contact with Nandrolone or any of its precursors in any way.

CONFIRMATION OF IOC PRODUCT STATUS

This is to certify that this product, whole or in part, has not come into contact with any product/s, which is banned by the IOC (International Olympics Committee) and or WADA.

CONFIRMATION OF ANIMAL TESTING STATUS

This is to certify that all the products sold by Cambridge Commodities have not been tested on animals in any part of its manufacture in accordance with regulation 86/609/EEC.

CONFIRMATION OF PESTICIDES STATUS

This is to certify that the above-mentioned product complies with the regulation (EC) No.396/2005 of 23rd February 2005 and commission Regulation (EU) No. 559/2011 of 7th June 2011 amending annexes II and III of the above Regulation.

CONFIRMATION OF NANOPARTICLE STATUS

This is to certify that unless otherwise stated, the above-mentioned product is free of nanoparticles. Commission Recommendation 2011/696/EU, defines as follows: "'Nanomaterial' means a natural, incidental or manufactured material containing particles, in an unbound state or as an aggregate or as an agglomerate and where, for 50 % or more of the particles in the number size distribution, one or more external dimensions is in the size range 1 nm - 100 nm".

Product Code: P05076

Version: 2



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PRODUCTION FLOW CHART



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P05076 Ellagic Acid 90% (from pomegranate seed extract)

Cambridge Commodities

Chemwatch Hazard Alert Code: 2

Version No: 1.1

Safety Data Sheet (Conforms to Regulation (EU) No 2015/830)

Issue Date: 13/04/2018

Print Date: 13/04/2018

S.REACH.GBR.EN

SECTION 1 IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

1.1. Product Identifier

Product name	P05076 Ellagic Acid 90% (from pomegranate seed extract)
Synonyms	Not Available
Other means of identification	P05076
CAS number	Not Available

1.2. Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses	<p>Antioxidant. Intermediate. A privileged structure (capable of binding to multiple receptors with high affinity). In order to be considered privileged, a substructure should represent a molecule's core element and make up a significant portion of its total mass. Benzopyrans (also called chromenes), bicyclic heterocyclic systems consisting of a benzene ring fused to a heterocyclic pyran ring, constitute a privileged structure (capable of binding to multiple receptors with high affinity) in medicinal chemistry. Benzopyran derivatives (chromones and flavones) are potentially useful anti-inflammatory agents due to their ability to inhibit protein kinase dependant signal transduction pathways. Furthermore, some natural benzopyran derivatives showed inhibitory activity of prostaglandin E2 (PGE2) production. Benzopyran derivatives are also an attractive template for the identification of potential anticancer agents. The presence of a halogen allows these reagents to be used as substrates in various coupling reactions, including Suzuki-Miyaura cross-coupling reactions.</p>
Uses advised against	Not Applicable

1.3. Details of the supplier of the safety data sheet

Registered company name	Cambridge Commodities
Address	Lancaster Way Business Park Ely Cambridgeshire CB6 3NX United Kingdom
Telephone	+44 1353 667258
Fax	+44 1353 667289
Website	https://www.c-c-l.com/
Email	info@c-c-l.com

1.4. Emergency telephone number

Association / Organisation	Not Available
Emergency telephone numbers	Not Available
Other emergency telephone numbers	Not Available


SECTION 2 HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

Classification according to regulation (EC) No 1272/2008 [CLP] [1]	H315 - Skin Corrosion/Irritation Category 2, H319 - Eye Irritation Category 2, H335 - Specific target organ toxicity - single exposure Category 3 (respiratory tract irritation)
Legend:	1. Classified by Chemwatch; 2. Classification drawn from EC Directive 67/548/EEC - Annex I; 3. Classification drawn from EC Directive 1272/2008 - Annex VI

P05076 Ellagic Acid 90% (from pomegranate seed extract)

2.2. Label elements

Hazard pictogram(s)	
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SIGNAL WORD

WARNING

Hazard statement(s)

H315	Causes skin irritation.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.

Supplementary statement(s)

Not Applicable

Precautionary statement(s) Prevention

P271	Use only outdoors or in a well-ventilated area.
P261	Avoid breathing dust/fumes.
P280	Wear protective gloves/protective clothing/eye protection/face protection.

Precautionary statement(s) Response

P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P312	Call a POISON CENTER/doctor/physician/first aider/if you feel unwell.
P337+P313	If eye irritation persists: Get medical advice/attention.
P302+P352	IF ON SKIN: Wash with plenty of water and soap.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P332+P313	If skin irritation occurs: Get medical advice/attention.
P362+P364	Take off contaminated clothing and wash it before reuse.

Precautionary statement(s) Storage

P405	Store locked up.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.

Precautionary statement(s) Disposal

P501	Dispose of contents/container in accordance with local regulations.
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2.3. Other hazards

Skin contact and/or ingestion may produce health damage*.

Cumulative effects may result following exposure*.

Limited evidence of a carcinogenic effect*.

May be harmful to the foetus/ embryo*.

RECh - Art.57-59: The mixture does not contain Substances of Very High Concern (SVHC) at the SDS print date.

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

3.1. Substances

1.CAS No 2.EC No 3.Index No 4.REACH No	%[weight]	Name	Classification according to regulation (EC) No 1272/2008 [CLP]
1.476-66-4 2.207-508-3 3.Not Available 4.Not Available	90	<u>ellagic acid</u>	Skin Corrosion/Irritation Category 2, Eye Irritation Category 2, Specific target organ toxicity - single exposure Category 3 (respiratory tract irritation); H315, H319, H335 ^[1]

Legend: 1. Classified by Chemwatch; 2. Classification drawn from EC Directive 67/548/EEC - Annex I ; 3. Classification drawn from EC Directive 1272/2008 - Annex VI 4. Classification drawn from C&L

3.2. Mixtures

See 'Information on ingredients' in section 3.1

SECTION 4 FIRST AID MEASURES

P05076 Ellagic Acid 90% (from pomegranate seed extract)

4.1. Description of first aid measures

Eye Contact	<ul style="list-style-type: none"> ▶ Generally not applicable.
Skin Contact	<p>If skin contact occurs:</p> <ul style="list-style-type: none"> ▶ Immediately remove all contaminated clothing, including footwear. ▶ Flush skin and hair with running water (and soap if available). ▶ Seek medical attention in event of irritation. ▶ Generally not applicable.
Inhalation	<ul style="list-style-type: none"> ▶ If fumes or combustion products are inhaled remove from contaminated area. ▶ Lay patient down. Keep warm and rested. ▶ Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures. ▶ Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary. ▶ Transport to hospital, or doctor, without delay. ▶ Generally not applicable.
Ingestion	<ul style="list-style-type: none"> ▶ If swallowed do NOT induce vomiting. ▶ If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration. ▶ Observe the patient carefully. ▶ Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious. ▶ Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink. ▶ Seek medical advice. ▶ Generally not applicable.

4.2 Most important symptoms and effects, both acute and delayed

See Section 11

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5 FIREFIGHTING MEASURES

5.1. Extinguishing media

- ▶ Foam.
- ▶ Dry chemical powder.
- ▶ BCF (where regulations permit).
- ▶ Carbon dioxide.
- ▶ Water spray or fog - Large fires only.

5.2. Special hazards arising from the substrate or mixture

Fire Incompatibility	▶ Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result
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5.3. Advice for firefighters

Fire Fighting	<ul style="list-style-type: none"> ▶ Alert Fire Brigade and tell them location and nature of hazard. ▶ Wear breathing apparatus plus protective gloves. ▶ Prevent, by any means available, spillage from entering drains or water courses. ▶ Use water delivered as a fine spray to control fire and cool adjacent area. ▶ DO NOT approach containers suspected to be hot. ▶ Cool fire exposed containers with water spray from a protected location. ▶ If safe to do so, remove containers from path of fire. ▶ Equipment should be thoroughly decontaminated after use. <p>Slight hazard when exposed to heat, flame and oxidisers.</p>
Fire/Explosion Hazard	<p>Combustible. Will burn if ignited. Combustion products include: carbon monoxide (CO) carbon dioxide (CO₂) other pyrolysis products typical of burning organic material. May emit poisonous fumes. May emit corrosive fumes.</p> <p>Articles and manufactured articles may constitute a fire hazard where polymers form their outer layers or where combustible packaging remains in place. Certain substances, found throughout their construction, may degrade or become volatile when heated to high temperatures. This may create a secondary hazard.</p>

SECTION 6 ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

See section 8

6.2. Environmental precautions

See section 12

6.3. Methods and material for containment and cleaning up

Minor Spills	<ul style="list-style-type: none"> ▶ Clean up all spills immediately. ▶ Secure load if safe to do so. ▶ Bundle/collect recoverable product. ▶ Collect remaining material in containers with covers for disposal.
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Major Spills	<ul style="list-style-type: none"> ▶ Clear area of personnel and move upwind. ▶ Alert Fire Brigade and tell them location and nature of hazard. ▶ Wear breathing apparatus plus protective gloves. ▶ Prevent, by any means available, spillage from entering drains or water course. ▶ Stop leak if safe to do so. ▶ Contain spill with sand, earth or vermiculite. ▶ Collect recoverable product into labelled containers for recycling. ▶ Neutralise/decontaminate residue (see Section 13 for specific agent). ▶ Collect solid residues and seal in labelled drums for disposal. ▶ Wash area and prevent runoff into drains. ▶ After clean up operations, decontaminate and launder all protective clothing and equipment before storing and re-using. ▶ If contamination of drains or waterways occurs, advise emergency services. <p>Minor hazard.</p> <ul style="list-style-type: none"> ▶ Clear area of personnel. ▶ Alert Fire Brigade and tell them location and nature of hazard. ▶ Control personal contact with the substance, by using protective equipment as required. ▶ Prevent spillage from entering drains or water ways. ▶ Contain spill with sand, earth or vermiculite. ▶ Collect recoverable product into labelled containers for recycling. ▶ Absorb remaining product with sand, earth or vermiculite and place in appropriate containers for disposal. ▶ Wash area and prevent runoff into drains or waterways. ▶ If contamination of drains or waterways occurs, advise emergency services. ▶ Clean up all spills immediately. ▶ Wear protective clothing, safety glasses, dust mask, gloves. ▶ Secure load if safe to do so. Bundle/collect recoverable product. ▶ Use dry clean up procedures and avoid generating dust. ▶ Vacuum up (consider explosion-proof machines designed to be grounded during storage and use). ▶ Water may be used to prevent dusting. ▶ Collect remaining material in containers with covers for disposal. ▶ Flush spill area with water.
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6.4. Reference to other sections

Personal Protective Equipment advice is contained in Section 8 of the SDS.

SECTION 7 HANDLING AND STORAGE

7.1. Precautions for safe handling

Safe handling	<ul style="list-style-type: none"> ▶ Avoid all personal contact, including inhalation. ▶ Wear protective clothing when risk of exposure occurs. ▶ Use in a well-ventilated area. ▶ Prevent concentration in hollows and sumps. ▶ DO NOT enter confined spaces until atmosphere has been checked. ▶ DO NOT allow material to contact humans, exposed food or food utensils. ▶ Avoid contact with incompatible materials. ▶ When handling, DO NOT eat, drink or smoke. ▶ Keep containers securely sealed when not in use. ▶ Avoid physical damage to containers. ▶ Always wash hands with soap and water after handling. ▶ Work clothes should be laundered separately. Launder contaminated clothing before re-use. ▶ Use good occupational work practice. ▶ Observe manufacturer's storage and handling recommendations contained within this SDS. ▶ Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained.
Fire and explosion protection	See section 5
Other information	<p>Consider storage under inert gas.</p> <ul style="list-style-type: none"> ▶ Store away from incompatible materials.

7.2. Conditions for safe storage, including any incompatibilities

Suitable container	<p>Generally packaging as originally supplied with the article or manufactured item is sufficient to protect against physical hazards.</p> <p>If repackaging is required ensure the article is intact and does not show signs of wear. As far as is practicably possible, reuse the original packaging or something providing a similar level of protection to both the article and the handler.</p> <ul style="list-style-type: none"> ▶ Glass container is suitable for laboratory quantities
Storage incompatibility	<p>For lactones (also known as cyclic esters):</p> <ul style="list-style-type: none"> · The reactions of lactones are similar to those of esters · Heating a lactone with a base (sodium hydroxide) will hydrolyse the lactone to its parent compound, the straight chained bifunctional compound. Like straight-chained esters, the hydrolysis-condensation reaction of lactones is a reversible reaction, with an equilibrium. However, the equilibrium constant of the hydrolysis reaction of the lactone is lower than that of the straight-chained ester i.e. the products (hydroxyacids) are less favoured in the case of the lactones. · Lactones can be reduced to diols using lithium aluminium hydride in dry ether. · Lactones also react with ethanolic ammonia, gamma-Lactones will react to yield CH₂(OH)-(CH₂)₂-CO-NH₂. · gamma-Lactones (5-membered cyclic esters), delta-lactones (6-membered cyclic esters) and epsilon lactones (7-membered cyclic esters) are the most stable lactone structures because, as in all organic cycles, 5, 6 and 7-membered rings minimise the strain of bond angles · alpha-Lactones (3-membered cyclic esters) and beta-lactones (4-membered cyclic esters) represent a group of strained-ring (unstable) substances · beta-Lactones exhibit similar reactivities to epoxides due to their inherent ring strain (beta-lactones, 22.8 kcal/mol; epoxides, 27.2 kcal/mol). In general, hard nucleophiles such as alkoxides, alkyllithiums, and Grignard reagents react with beta-lactones to cleave the acyl C-O bond, while alkyl C-O cleavage occurs with soft nucleophiles including organocuprates, azides, halides, and thiolates · Sesquiterpene lactones, (generally 5-membered cyclic esters with an alkene side chain) found in many plants, can react with other molecules via a Michael reaction · Lactones readily form polyesters <p>Naturally occurring lactones are mainly saturated and unsaturated gamma- and delta-lactones, and to a lesser extent macrocyclic lactones. The gamma</p>

P05076 Ellagic Acid 90% (from pomegranate seed extract)

and delta-lactones are intramolecular esters of the corresponding hydroxy fatty acids

- ▶ Esters react with acids to liberate heat along with alcohols and acids.
- ▶ Strong oxidising acids may cause a vigorous reaction with esters that is sufficiently exothermic to ignite the reaction products.
- ▶ Heat is also generated by the interaction of esters with caustic solutions.
- ▶ Flammable hydrogen is generated by mixing esters with alkali metals and hydrides.
- ▶ Esters may be incompatible with aliphatic amines and nitrates.

7.3. Specific end use(s)

See section 1.2

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1. Control parameters

DERIVED NO EFFECT LEVEL (DNEL)

Not Available

PREDICTED NO EFFECT LEVEL (PNEC)

Not Available

OCCUPATIONAL EXPOSURE LIMITS (OEL)

INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
Not Available	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available

EMERGENCY LIMITS

Ingredient	Material name	TEEL-1	TEEL-2	TEEL-3
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Ingredient	Original IDLH	Revised IDLH
ellagic acid	Not Available	Not Available

8.2. Exposure controls

Articles or manufactured items, in their original condition, generally don't require engineering controls during handling or in normal use.

Exceptions may arise following extensive use and subsequent wear, during recycling or disposal operations where substances, found in the article, may be released to the environment.

Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.

The basic types of engineering controls are:

Process controls which involve changing the way a job activity or process is done to reduce the risk.

Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment. Ventilation can remove or dilute an air contaminant if designed properly. The design of a ventilation system must match the particular process and chemical or contaminant in use.

Employers may need to use multiple types of controls to prevent employee overexposure.

General exhaust is adequate under normal operating conditions. Local exhaust ventilation may be required in special circumstances. If risk of overexposure exists, wear approved respirator. Supplied-air type respirator may be required in special circumstances. Correct fit is essential to ensure adequate protection. Provide adequate ventilation in warehouses and enclosed storage areas. Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to effectively remove the contaminant.

Type of Contaminant:	Air Speed:
solvent, vapours, degreasing etc., evaporating from tank (in still air).	0.25-0.5 m/s (50-100 f/min)
aerosols, fumes from pouring operations, intermittent container filling, low speed conveyer transfers, welding, spray drift, plating acid fumes, pickling (released at low velocity into zone of active generation)	0.5-1 m/s (100-200 f/min.)
direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts, gas discharge (active generation into zone of rapid air motion)	1-2.5 m/s (200-500 f/min.)
grinding, abrasive blasting, tumbling, high speed wheel generated dusts (released at high initial velocity into zone of very high rapid air motion)	2.5-10 m/s (500-2000 f/min.)


Within each range the appropriate value depends on:

Lower end of the range	Upper end of the range
1: Room air currents minimal or favourable to capture	1: Disturbing room air currents
2: Contaminants of low toxicity or of nuisance value only.	2: Contaminants of high toxicity
3: Intermittent, low production.	3: High production, heavy use
4: Large hood or large air mass in motion	4: Small hood-local control only

Simple theory shows that air velocity falls rapidly with distance away from the opening of a simple extraction pipe. Velocity generally decreases with the square of distance from the extraction point (in simple cases). Therefore the air speed at the extraction point should be adjusted, accordingly, after reference to distance from the contaminating source. The air velocity at the extraction fan, for example, should be a minimum of 1-2 m/s (200-400 f/min) for extraction of solvents generated in a tank 2 meters distant from the extraction point. Other mechanical considerations, producing performance deficits within the extraction apparatus, make it essential that theoretical air velocities are multiplied by factors of 10 or more when extraction systems are installed or used.

8.2.1. Appropriate engineering controls

P05076 Ellagic Acid 90% (from pomegranate seed extract)

8.2.2. Personal protection	
Eye and face protection	<ul style="list-style-type: none"> ▶ Safety glasses with side shields. ▶ Chemical goggles. ▶ Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59], [AS/NZS 1336 or national equivalent] <p>No special equipment required due to the physical form of the product.</p>
Skin protection	See Hand protection below
Hands/feet protection	<ul style="list-style-type: none"> ▶ Wear chemical protective gloves, e.g. PVC. ▶ Wear safety footwear or safety gumboots, e.g. Rubber <p>No special equipment required due to the physical form of the product.</p>
Body protection	See Other protection below
Other protection	<ul style="list-style-type: none"> ▶ Overalls. ▶ P.V.C. apron. ▶ Barrier cream. ▶ Skin cleansing cream. ▶ Eye wash unit.
Thermal hazards	Not Available

Respiratory protection

Respiratory protection not normally required due to the physical form of the product.

8.2.3. Environmental exposure controls

See section 12

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES**9.1. Information on basic physical and chemical properties**

Appearance	Air sensitive.		
Physical state	article	Relative density (Water = 1)	Not Available
Odour	Not Available	Partition coefficient n-octanol / water	Not Available
Odour threshold	Not Available	Auto-ignition temperature (°C)	Not Available
pH (as supplied)	Not Available	Decomposition temperature	Not Available
Melting point / freezing point (°C)	Not Available	Viscosity (cSt)	Not Available
Initial boiling point and boiling range (°C)	Not Available	Molecular weight (g/mol)	Not Available
Flash point (°C)	Not Available	Taste	Not Available
Evaporation rate	Not Available	Explosive properties	Not Available
Flammability	Not Available	Oxidising properties	Not Available
Upper Explosive Limit (%)	Not Available	Surface Tension (dyn/cm or mN/m)	Not Available
Lower Explosive Limit (%)	Not Available	Volatile Component (%vol)	Not Available
Vapour pressure (kPa)	Not Available	Gas group	Not Available
Solubility in water (g/L)	Immiscible	pH as a solution (1%)	Not Available
Vapour density (Air = 1)	Not Available	VOC g/L	Not Available

9.2. Other information

Not Available

SECTION 10 STABILITY AND REACTIVITY

10.1. Reactivity	See section 7.2
10.2. Chemical stability	Product is considered stable and hazardous polymerisation will not occur.
10.3. Possibility of hazardous reactions	See section 7.2
10.4. Conditions to avoid	See section 7.2
10.5. Incompatible materials	See section 7.2
10.6. Hazardous decomposition products	See section 5.3

P05076 Ellagic Acid 90% (from pomegranate seed extract)

SECTION 11 TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Inhaled	The material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage.
Ingestion	Accidental ingestion of the material may be damaging to the health of the individual.
Skin Contact	This material can cause inflammation of the skin on contact in some persons. The material may accentuate any pre-existing dermatitis condition Skin contact with the material may damage the health of the individual; systemic effects may result following absorption. Open cuts, abraded or irritated skin should not be exposed to this material Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.
Eye	This material can cause eye irritation and damage in some persons.
Chronic	Long-term exposure to respiratory irritants may result in airways disease, involving difficulty breathing and related whole-body problems. Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure. There has been some concern that this material can cause cancer or mutations but there is not enough data to make an assessment.

P05076 Ellagic Acid 90% (from pomegranate seed extract)	TOXICITY	IRRITATION
	Not Available	Not Available
ellagic acid	TOXICITY	IRRITATION
	Not Available	Not Available

Legend: 1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2.* Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances

Acute Toxicity	☹	Carcinogenicity	☹
Skin Irritation/Corrosion	✔	Reproductivity	☹
Serious Eye Damage/Irritation	✔	STOT - Single Exposure	✔
Respiratory or Skin sensitisation	☹	STOT - Repeated Exposure	☹
Mutagenicity	☹	Aspiration Hazard	☹

Legend: ✘ – Data available but does not fill the criteria for classification
✔ – Data available to make classification
☹ – Data Not Available to make classification

SECTION 12 ECOLOGICAL INFORMATION

12.1. Toxicity

P05076 Ellagic Acid 90% (from pomegranate seed extract)	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	Not Available	Not Available	Not Available	Not Available	Not Available
ellagic acid	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	Not Available	Not Available	Not Available	Not Available	Not Available

Legend: Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 3. EPIWIN Suite V3.12 (QSAR) - Aquatic Toxicity Data (Estimated) 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data

Harmful to aquatic organisms.

DO NOT discharge into sewer or waterways.

12.2. Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
ellagic acid	LOW	LOW

12.3. Bioaccumulative potential

Ingredient	Bioaccumulation
ellagic acid	LOW (LogKOW = -2.0455)

12.4. Mobility in soil

Ingredient	Mobility
ellagic acid	LOW (KOC = 3418)

P05076 Ellagic Acid 90% (from pomegranate seed extract)

12.5. Results of PBT and vPvB assessment

	P	B	T
Relevant available data	Not Available	Not Available	Not Available
PBT Criteria fulfilled?	Not Available	Not Available	Not Available

12.6. Other adverse effects

No data available

SECTION 13 DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Product / Packaging disposal	<ul style="list-style-type: none"> · Recycle wherever possible or consult manufacturer for recycling options. · Consult State Land Waste Management Authority for disposal. ▶ DO NOT allow wash water from cleaning or process equipment to enter drains. ▶ It may be necessary to collect all wash water for treatment before disposal. ▶ In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first. ▶ Where in doubt contact the responsible authority. ▶ Recycle wherever possible or consult manufacturer for recycling options. ▶ Consult State Land Waste Authority for disposal. ▶ Bury or incinerate residue at an approved site. ▶ Recycle containers if possible, or dispose of in an authorised landfill.
Waste treatment options	Not Available
Sewage disposal options	Not Available

SECTION 14 TRANSPORT INFORMATION

Labels Required

Marine Pollutant	NO
HAZCHEM	Not Applicable

Land transport (ADR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

14.1. UN number	Not Applicable										
14.2. UN proper shipping name	Not Applicable										
14.3. Transport hazard class(es)	<table border="1"> <tbody> <tr> <td>Class</td> <td>Not Applicable</td> </tr> <tr> <td>Subrisk</td> <td>Not Applicable</td> </tr> </tbody> </table>	Class	Not Applicable	Subrisk	Not Applicable						
Class	Not Applicable										
Subrisk	Not Applicable										
14.4. Packing group	Not Applicable										
14.5. Environmental hazard	Not Applicable										
14.6. Special precautions for user	<table border="1"> <tbody> <tr> <td>Hazard identification (Kemler)</td> <td>Not Applicable</td> </tr> <tr> <td>Classification code</td> <td>Not Applicable</td> </tr> <tr> <td>Hazard Label</td> <td>Not Applicable</td> </tr> <tr> <td>Special provisions</td> <td>Not Applicable</td> </tr> <tr> <td>Limited quantity</td> <td>Not Applicable</td> </tr> </tbody> </table>	Hazard identification (Kemler)	Not Applicable	Classification code	Not Applicable	Hazard Label	Not Applicable	Special provisions	Not Applicable	Limited quantity	Not Applicable
Hazard identification (Kemler)	Not Applicable										
Classification code	Not Applicable										
Hazard Label	Not Applicable										
Special provisions	Not Applicable										
Limited quantity	Not Applicable										

Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

14.1. UN number	Not Applicable												
14.2. UN proper shipping name	Not Applicable												
14.3. Transport hazard class(es)	<table border="1"> <tbody> <tr> <td>ICAO/IATA Class</td> <td>Not Applicable</td> </tr> <tr> <td>ICAO / IATA Subrisk</td> <td>Not Applicable</td> </tr> <tr> <td>ERG Code</td> <td>Not Applicable</td> </tr> </tbody> </table>	ICAO/IATA Class	Not Applicable	ICAO / IATA Subrisk	Not Applicable	ERG Code	Not Applicable						
ICAO/IATA Class	Not Applicable												
ICAO / IATA Subrisk	Not Applicable												
ERG Code	Not Applicable												
14.4. Packing group	Not Applicable												
14.5. Environmental hazard	Not Applicable												
14.6. Special precautions for user	<table border="1"> <tbody> <tr> <td>Special provisions</td> <td>Not Applicable</td> </tr> <tr> <td>Cargo Only Packing Instructions</td> <td>Not Applicable</td> </tr> <tr> <td>Cargo Only Maximum Qty / Pack</td> <td>Not Applicable</td> </tr> <tr> <td>Passenger and Cargo Packing Instructions</td> <td>Not Applicable</td> </tr> <tr> <td>Passenger and Cargo Maximum Qty / Pack</td> <td>Not Applicable</td> </tr> <tr> <td>Passenger and Cargo Limited Quantity Packing Instructions</td> <td>Not Applicable</td> </tr> </tbody> </table>	Special provisions	Not Applicable	Cargo Only Packing Instructions	Not Applicable	Cargo Only Maximum Qty / Pack	Not Applicable	Passenger and Cargo Packing Instructions	Not Applicable	Passenger and Cargo Maximum Qty / Pack	Not Applicable	Passenger and Cargo Limited Quantity Packing Instructions	Not Applicable
Special provisions	Not Applicable												
Cargo Only Packing Instructions	Not Applicable												
Cargo Only Maximum Qty / Pack	Not Applicable												
Passenger and Cargo Packing Instructions	Not Applicable												
Passenger and Cargo Maximum Qty / Pack	Not Applicable												
Passenger and Cargo Limited Quantity Packing Instructions	Not Applicable												

P05076 Ellagic Acid 90% (from pomegranate seed extract)

Passenger and Cargo Limited Maximum Qty / Pack

Not Applicable

Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

14.1. UN number	Not Applicable
14.2. UN proper shipping name	Not Applicable
14.3. Transport hazard class(es)	IMDG Class Not Applicable
	IMDG Subrisk Not Applicable
14.4. Packing group	Not Applicable
14.5. Environmental hazard	Not Applicable
14.6. Special precautions for user	EMS Number Not Applicable
	Special provisions Not Applicable
	Limited Quantities Not Applicable

Inland waterways transport (ADN): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

14.1. UN number	Not Applicable
14.2. UN proper shipping name	Not Applicable
14.3. Transport hazard class(es)	Not Applicable Not Applicable
14.4. Packing group	Not Applicable
14.5. Environmental hazard	Not Applicable
14.6. Special precautions for user	Classification code Not Applicable
	Special provisions Not Applicable
	Limited quantity Not Applicable
	Equipment required Not Applicable
	Fire cones number Not Applicable

14.7. Transport in bulk according to Annex II of MARPOL and the IBC code

Not Applicable

SECTION 15 REGULATORY INFORMATION

15.1. Safety, health and environmental regulations / legislation specific for the substance or mixture

ELLAGIC ACID(476-66-4) IS FOUND ON THE FOLLOWING REGULATORY LISTS

European Customs Inventory of Chemical Substances ECICS (English)

European Union - European Inventory of Existing Commercial Chemical Substances (EINECS) (English)

This safety data sheet is in compliance with the following EU legislation and its adaptations - as far as applicable - : 98/24/EC, 92/85/EC, 94/33/EC, 91/689/EEC, 1999/13/EC, Commission Regulation (EU) 2015/830, Regulation (EC) No 1272/2008 and their amendments

15.2. Chemical safety assessment

For further information please look at the Chemical Safety Assessment and Exposure Scenarios prepared by your Supply Chain if available.

ECHA SUMMARY

Ingredient	CAS number	Index No	ECHA Dossier
ellagic acid	476-66-4	Not Available	Not Available

Harmonisation (C&L Inventory)	Hazard Class and Category Code(s)	Pictograms Signal Word Code(s)	Hazard Statement Code(s)
1	Skin Irrit. 2; Eye Irrit. 2; STOT SE 3	GHS07; Wng	H315; H319; H335
2	Skin Irrit. 2; Eye Irrit. 2; STOT SE 3; Not Classified	GHS07; Wng	H315; H319; H335

Harmonisation Code 1 = The most prevalent classification. Harmonisation Code 2 = The most severe classification.

National Inventory	Status
Australia - AICS	N (ellagic acid)
Canada - DSL	N (ellagic acid)
Canada - NDSL	N (ellagic acid)
China - IECSC	Y
Europe - EINEC / ELINCS / NLP	Y

P05076 Ellagic Acid 90% (from pomegranate seed extract)

Japan - ENCS	N (ellagic acid)
Korea - KECI	N (ellagic acid)
New Zealand - NZIoC	N (ellagic acid)
Philippines - PICCS	N (ellagic acid)
USA - TSCA	N (ellagic acid)
Legend:	Y = All ingredients are on the inventory N = Not determined or one or more ingredients are not on the inventory and are not exempt from listing (see specific ingredients in brackets)

SECTION 16 OTHER INFORMATION

Revision Date	13/04/2018
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Full text Risk and Hazard codes

Other information

Ingredients with multiple cas numbers

Name	CAS No
ellagic acid	476-66-4, 133039-73-3

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

For detailed advice on Personal Protective Equipment, refer to the following EU CEN Standards:

EN 166 Personal eye-protection

EN 340 Protective clothing

EN 374 Protective gloves against chemicals and micro-organisms

EN 13832 Footwear protecting against chemicals

EN 133 Respiratory protective devices

Definitions and abbreviations

PC – TWA: Permissible Concentration-Time Weighted Average

PC – STEL: Permissible Concentration-Short Term Exposure Limit

IARC: International Agency for Research on Cancer

ACGIH: American Conference of Governmental Industrial Hygienists

STEL: Short Term Exposure Limit

TEEL: Temporary Emergency Exposure Limit.

IDLH: Immediately Dangerous to Life or Health Concentrations

OSF: Odour Safety Factor

NOAEL: No Observed Adverse Effect Level

LOAEL: Lowest Observed Adverse Effect Level

TLV: Threshold Limit Value

LOD: Limit Of Detection

OTV: Odour Threshold Value

BCF: BioConcentration Factors

BEI: Biological Exposure Index

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The Information provided in this document is subject to change and the batch specific certificate of analysis should always be referenced.

To be used as per local legislation.

Change History

Version	Change	Customer Notification required Yes / No
1	First Issue	N/A
2	Updated percentage passed through 80 Mesh. Added the following requirements: Bulk Density, Tapped Density, Specific Gravity, Coliforms Negative/10g, Removed following requirements: Sulphate max 5%, Insolubles in Ethanol Max 10ppm, Ethanol Resides Max 0.2%, Phosphate Organics Max 1ppm, P. aeruginosa Absent, S. aureus Absent, Pesticides Resides Max 1ppm, Aflatoxins Max 0.2ppb Added Vegetarian/Vegan status and allergen statement. Changed Yeast & Moulds requirements from Max 50cfu/g to Max 1,000cfu/g, E. Coli requirement from Negative to Negative/10g, Salmonella from Negative to Negative/25g, Total Viable Count from Max 1,000cfu/g to Max 10,000cfu/g. Added flow chart. Updated MSDS. General reformat.	Yes

Document Approval

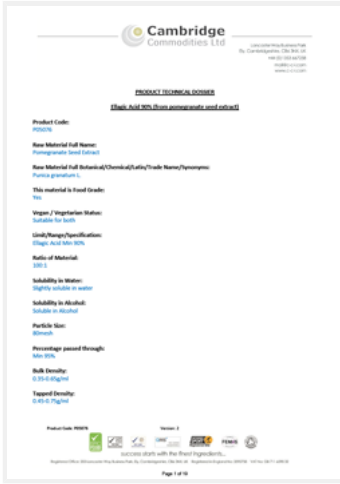
Originator Job Title	QC Technician	Approver Job Title	Quality Specialist
 Malgorzata Sosnin (Apr 13, 2018)		 Lucia Valle (Apr 13, 2018)	

Product Code: P05076

Version: 2



success starts with the finest ingredients...



P05076 - Ellagic Acid 90% (from pomegranate seed extract) - TD

Adobe Sign Document History

04/13/2018

Created:	04/13/2018
By:	Malgorzata Sosnin (malgorzata.sosnin@c-c-l.com)
Status:	Signed
Transaction ID:	CBJCHBCAABAAbdPY0430sYwVyfVE593p-XeuuH4OF5vd

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