

Flavor West Manufacturing, LLC.

Version No: **2.3** Safety Data Sheet according to OSHA HazCom Standard (2012) requirements Chemwatch Hazard Alert Code: 2

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

Product Identifier

Product name	FW-ATT N&A Amaretto Flavor
Synonyms	Not Available
Other means of identification	Not Available

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

Relevant identified	Use according to manufacturer's directions.
uses	

Details of the manufacturer/importer

Registered company name	Flavor West Manufacturing, LLC.
Address	29400 Hunco Way, Lake Elsinore CA 92530 United States
Telephone	(951) 893-5120
Fax	(714) 276-1621
Website	www.FlavorWest.com
Email	Flavor@FlavorWest.com

Emergency telephone number

Association / Organisation	Chemwatch
Emergency telephone numbers	see below
Other emergency telephone numbers	see below

CHEMWATCH EMERGENCY RESPONSE

Primary Number	Alternative Number 1	Alternative Number 2
877 715 9305	+612 9186 1132	Not Available

Once connected and if the message is not in your prefered language then please dial 01

Una vez conectado y si el mensaje no está en su idioma preferido, por favor marque 02

SECTION 2 HAZARDS IDENTIFICATION

Classification of the substance or mixture

FW-ATT N&A Amaretto Flavor

2 1 0	
GHS Classification	Eye Irritation Category 2A
Label elements	
GHS label elements	
SIGNAL WORD	WARNING
Hazard statement(s)	
H319	Causes serious eye irritation
Precautionary statem	ent(s) Prevention
P280	Wear protective gloves/protective clothing/eye protection/face protection.
Precautionary statem	ent(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.

Precautionary statement(s) Storage

P337+P313

Precautionary statement(s) Disposal

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

Substances

See section below for composition of Mixtures

Mixtures

CAS No	%[weight]	Name
102-76-1	80-90	glyceryl triacetate
100-52-7	5-10	benzaldehyde
121-33-5	1-5	vanillin

The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

If eye irritation persists: Get medical advice/attention.

SECTION 4 FIRST AID MEASURES

Description of first aid measures

Eye Contact	 If this product comes in contact with the eyes: Wash out immediately with fresh running water. Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids. Seek medical attention without delay; if pain persists or recurs seek medical attention. Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.
Skin Contact	If skin or hair contact occurs: ▶ Flush skin and hair with running water (and soap if available). ▶ Seek medical attention in event of irritation.
Inhalation	 If fumes, aerosols or combustion products are inhaled remove from contaminated area. Other measures are usually unnecessary.

Ingestion

Immediately give a glass of water.

• First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.

Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5 FIREFIGHTING MEASURES

Extinguishing media Water spray or fog. Foam. Dry chemical powder. BCF (where regulations permit).

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

Advice for firefighters

Fire Fighting	 Alert Fire Brigade and tell them location and nature of hazard. Wear full body protective clothing with breathing apparatus. Prevent, by any means available, spillage from entering drains or water course. Use water delivered as a fine spray to control fire and cool adjacent area.
Fire/Explosion Hazard	 Combustible. Slight fire hazard when exposed to heat or flame. Heating may cause expansion or decomposition leading to violent rupture of containers. On combustion, may emit toxic fumes of carbon monoxide (CO).

SECTION 6 ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Minor Spills	 Remove all ignition sources. Clean up all spills immediately. Avoid breathing vapours and contact with skin and eyes. Control personal contact with the substance, by using protective equipment.
Major Spills	 Moderate hazard. Clear area of personnel and move upwind. Alert Fire Brigade and tell them location and nature of hazard. Wear breathing apparatus plus protective gloves.
	Personal Protective Equipment advice is contained in Section 8 of the MSDS.

SECTION 7 HANDLING AND STORAGE

Precautions for safe handling

	Rags wet / soaked with unsaturated hydrocarbons / drying oils may auto-oxidise; generate heat and, in-time, smoulder and ignite. This is especially the case where oil-soaked materials are folded, bunched, compressed, or piled together - this allows the heat to accumulate or even accelerate the reaction
Safe handling	 Oily cleaning rags should be collected regularly and immersed in water, or spread to dry in safe-place away from direct sunlight or stored, immersed, in solvents in suitably closed containers. Avoid all personal contact, including inhalation. Wear protective clothing when risk of exposure occurs.
Other information	 Store in original containers. Keep containers securely sealed. No smoking, naked lights or ignition sources. Store in a cool, dry, well-ventilated area.

Conditions for safe storage, including any incompatibilities

	 Glass container is suitable for laboratory quantities
Suitable container	► Metal can or drum

FW-ATT	N&A	Amaretto	Flavor
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	 Packaging as recommended by manufacturer. Check all containers are clearly labelled and free from leaks.
Storage incompatibility	Materials soaked with plant/ vegetable derived (and rarely, animal) oils may undergo spontaneous combustion Many vegetable and animal oils absorb oxygen from the air to form oxidation products. This oxidation process produces heat and the resultant increase in temperature accelerates the oxidation process. Drying oils such as linseed, tung, poppy and sunflower oils and semi-drying oils such as soya bean, tall oil, corn, cotton and castor oils all absorb oxygen readily and thus experience the self-heating process. Cotton fibres are readily ignited and if contaminated with an oxidisable oil, may ignite unless heat can be dissipated Avoid reaction with oxidising agents, bases and strong reducing agents.

PACKAGE MATERIAL INCOMPATIBILITIES

Not Available

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

OCCUPATIONAL EXPOSURE LIMITS (OEL)

INGREDIENT DATA

Not Available

EMERGENCY LIMITS

Ingredient	Material name	Т	EEL-1		TEEL-2	TEEL-3
glyceryl triacetate	Triacetin; (Triacetyl glycerin)	9	mg/m	3	99 mg/m3	590 mg/m3
benzaldehyde	Benzaldehyde	4	ppm		4 ppm	180 ppm
vanillin	Vanilin	1	0 mg/n	n3	10 mg/m3	310 mg/m3
Ingredient	Original IDLH			Revised ID	LH	
glyceryl triacetate	Not Available		Not Available			
benzaldehyde	Not Available			Not Available		
vanillin	Not Available			Not Available		

MATERIAL DATA

Sensory irritants are chemicals that produce temporary and undesirable side-effects on the eyes, nose or throat. Historically occupational exposure standards for these irritants have been based on observation of workers' responses to various airborne concentrations. Present day expectations require that nearly every individual should be protected against even minor sensory irritation and exposure standards are established using uncertainty factors or safety factors of 5 to 10 or more. On occasion animal no-observable-effect-levels (NOEL) are used to determine these limits where human results are unavailable.

Exposure controls

xposure controls	
Appropriate engineering controls	 Care: Atmospheres in bulk storages and even apparently empty tanks may be hazardous by oxygen depletion. Atmosphere must be checked before entry. Requirements of State Authorities concerning conditions for tank entry must be met. Particularly with regard to training of crews for tank entry; work permits; sampling of atmosphere; provision of rescue harness and protective gear as needed Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard.
Personal protection	
Eye and face protection	 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.
Skin protection	See Hand protection below
Hands/feet protection	The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application. The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and.has to be observed when making a final choice. Suitability and durability of glove type is dependent on usage.
Body protection	See Other protection below

Other protection	 Overalls. P.V.C. apron. Barrier cream.
Thermal hazards	Not Available

Recommended material(s)

GLOVE SELECTION INDEX

Glove selection is based on a modified presentation of the:

"Forsberg Clothing Performance Index".

The effect(s) of the following substance(s) are taken into account in the *computer-generated* selection:

FW-ATT N&A Amaretto Flavor

Material	CPI
BUTYL	А
NATURAL RUBBER	С
NEOPRENE	С
NITRILE	С
PE/EVAL/PE	С
PVA	С
VITON	С

* CPI - Chemwatch Performance Index

A: Best Selection

B: Satisfactory; may degrade after 4 hours continuous immersion C: Poor to Dangerous Choice for other than short term immersion **NOTE**: As a series of factors will influence the actual performance of the glove, a final selection must be based on detailed observation. -* Where the glove is to be used on a short term, casual or infrequent basis, factors such as "feel" or convenience (e.g. disposability), may dictate a choice of gloves which might otherwise be unsuitable following long-term or frequent use. A qualified practitioner should be consulted.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance Pale Yellow Liquid **Relative density** Physical state Liquid 1.16 (Water = 1) Partition coefficient Odour Sharp Not Available n-octanol / water Auto-ignition Odour threshold Not Available Not Available temperature (°C) Decomposition pH (as supplied) Not Available Not Available temperature Melting point / Not Available Viscosity (cSt) Not Available freezing point (°C) Initial boiling point Molecular weight Not Available Not Available and boiling range (°C) (g/mol) Flash point (°C) >93 Amaretto Taste **Evaporation rate** Not Available **Explosive properties** Not Available Not Available Flammability Not Applicable **Oxidising properties Upper Explosive Limit** Surface Tension Not Available Not Available (dyn/cm or mN/m) (%) Lower Explosive Limit **Volatile Component** Not Available Not Available (%vol) (%) Vapour pressure (kPa) Not Available Gas group Not Available Solubility in water Miscible pH as a solution (1%) Not Available (g/L)

Respiratory protection

Type A Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)

Where the concentration of gas/particulates in the breathing zone, approaches or exceeds the "Exposure Standard" (or ES), respiratory protection is required.

Degree of protection varies with both face-piece and Class of filter; the nature of protection varies with Type of filter.

Required Minimum Protection Factor	Half-Face Respirator	Full-Face Respirator	Powered Air Respirator
up to 10 x ES	A-AUS	-	A-PAPR-AUS / Class 1
up to 50 x ES	-	A-AUS / Class 1	-
up to 100 x ES	-	A-2	A-PAPR-2 ^

^ - Full-face

A(All classes) = Organic vapours, B AUS or B1 = Acid gasses, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO2), G = Agricultural chemicals, K = Ammonia(NH3), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

Vapour density (Air = 1) Not Available

VOC g/L

Not Available

SECTION 10 STABILITY AND REACTIVITY

Reactivity	See section 7
Chemical stability	 Unstable in the presence of incompatible materials. Product is considered stable. Hazardous polymerisation will not occur.
Possibility of hazardous reactions	See section 7
Conditions to avoid	See section 7
Incompatible materials	See section 7
Hazardous decomposition products	See section 5

SECTION 11 TOXICOLOGICAL INFORMATION

Information on toxicological effects

Inhaled	The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting. Inhalation hazard is increased at higher temperatures. Fine mists generated from plant/ vegetable (or more rarely from animal) oils may be hazardous.
Ingestion	The material has NOT been classified by EC Directives or other classification systems as "harmful by ingestion". This is because of the lack of corroborating animal or human evidence. The material may still be damaging to the health of the individual, following ingestion, especially where pre-existing organ (e.g liver, kidney) damage is evident. Present definitions of harmful or toxic substances are generally based on doses producing mortality rather than those producing morbidity (disease, ill-health).
Skin Contact	The material is not thought to produce adverse health effects or skin irritation following contact (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting. Open cuts, abraded or irritated skin should not be exposed to this material Entry into the blood-stream through, for example, cuts, abrasions, puncture wounds 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	Evidence exists, or practical experience predicts, that the material may cause eye irritation in a substantial number of individuals and/or may produce significant ocular lesions which are present twenty-four hours or more after instillation into the eye(s) of experimental animals. Repeated or prolonged eye contact may cause inflammation characterised by temporary redness (similar to windburn) of the conjunctiva (conjunctivitis); temporary impairment of vision and/or other transient eye damage/ulceration may occur.
Chronic	Limited evidence suggests that repeated or long-term occupational exposure may produce cumulative health effects involving organs or biochemical systems. In a study with benzaldehyde, conducted by NTP, there was evidence of carcinogenic activity in mice as suggested by an increased incidence of squamous cell papillomas and hyperplasia of the fore-stomach - there was no evidence of carcinogenic activity in rats. Glyceryl triesters (triglycerides), following ingestion, are metabolised to monoglycerides, free fatty acids and glycerol, all of which are absorbed in the intestinal mucosa and undergo further metabolism. Medium chain triglycerides (C8-C10) appear to have relatively rapid metabolism and elimination from blood and tissues compared to long chain triglycerides (C16-C18).

FW-ATT N&A	TOXICITY	IRRITATION	
Amaretto Flavor	Not Available	Not Available	
	TOXICITY		IRRITATION
glyceryl triacetate	Dermal (rabbit) LD50: >5000 mg/kg ^[1]		[Manufacturer]*
	Oral (rat) LD50: >2000 mg/kg ^[1]		
benzaldehyde	TOXICITY	IRRITATION	
	Dermal (rabbit) LD50: >1250 mg/kg ^[1]	Skin (rabbit):500 mg/24h-moderate	

	Oral (rat) LD50: ca.1487.2 mg/kg ^[1]		
	ТОХІСІТҮ	IRRITATION	
vanillin	dermal (rat) LD50: >2000 mg/kg ^[1] Oral (rat) LD50: 1400 mg/kg ^[1]	Not Available	
Legend:	 Value obtained from Europe ECHA Registered Substances - Acute toxicity 2.* Value obtained from manufacturer's msds. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances 		
FW-ATT N&A Amaretto Flavor	No significant acute toxicological data identified in literature search. For Group E aliphatic esters (polyol esters): According to a classification scheme described by the American Ch substances are esters of monoacids, mainly common fatty acids, a such as pentaerythritol (PE), 2-ethyl-2-(hydroxymethyl)- 1,3-propand (diPE). The Group E substances often are referred to as "polyol est characteristics since they lack beta-tertiary hydrogen atoms, thus le The fatty acids often range from C5-C10 to as high as C18 (e.g., o number and generally are derived from naturally occurring sources.	nemistry Council' Aliphatic Esters Panel, Group E and trihydroxy or polyhydroxyalcohols or polyols, ediol or trimethylolpropane (TMP), and dipentaerythritol ers" The polyol esters are unique in their chemical eading to stability against oxidation and elimination. leic, stearic, isostearic, tall oil fatty acids) in carbon	
BENZALDEHYDE	Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a non-allergenic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound. Key criteria for the diagnosis of RADS include the absence of preceding respiratory disease, in a non-atopic individual, with abrupt onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. A reversible airflow pattern, on spirometry, with the presence of moderate to severe bronchial hyperreactivity on methacholine challenge testing and the lack of minimal lymphocytic inflammation, without eosinophilia, have also been included in the criteria for diagnosis of RADS. Somnolence , tremor, coma, ulceration of the small intestine, increased urine volume recorded.		
VANILLIN	For certain benzyl derivatives: All members of this group (benzyl, benzoate and 2-hydroxybenzoate (salicylate) esters) contain a benzene ring bonded directly to an oxygenated functional group (aldehyde or ester) that is hydrolysed and/or oxidised to a benzoic acid derivative. As a stable animal metabolite, benzoic acid derivatives are efficiently excreted primarily in the urine. These reaction pathways have been reported in both aquatic and terrestrial species. The similarity of their toxicologic properties is a reflection their participation in these common metabolic pathways. Miosis, somnolence, muscle weakness, coma, respiratory stimulation, maternal effects involving ovaries, fallopian tubes, uterus, cervix and vagina recorded.		

Acute Toxicity	0	Carcinogenicity	0
Skin Irritation/Corrosion	0	Reproductivity	0
Serious Eye Damage/Irritation	v	STOT - Single Exposure	0
Respiratory or Skin sensitisation	0	STOT - Repeated Exposure	0
Mutagenicity	0	Aspiration Hazard	\otimes

- 🗙 Data available but does not fill the criteria for classification
- 🚫 Data Not Available to make classification

CMR STATUS

Not Applicable

SECTION 12 ECOLOGICAL INFORMATION

Toxicity

NOT AVAILABLE

Ingredient	Endpoint	Test Duration	Effect	Value	Species	BCF
glyceryl triacetate	Not Available					
benzaldehyde	Not Available					
vanillin	Not Available					

For certain benzyl derivatives:

Environmental fate:

All members of this group (benzyl, benzoate and 2-hydroxybenzoate (salicylate) esters) contain a benzene ring bonded directly to an oxygenated functional group (aldehyde or ester) that is hydrolysed and/or oxidised to a benzoic acid derivative:

Photodegradation: The calculated half lives for hydroxyl radical reactions range from 4.7 to 64.5 hours. The calculated photodegradation half-lives for three benzaldehyde derivatives in this chemical category are in the narrow range from 4.7 hours for *m*-methoxy-*p*-hydroxybenzaldehyde to 7.2 hours for the less substituted derivative benzaldehyde. The relative half-lives reflect the increased reactivity of a phenolic OH group. The half-lives for the aldehydes are shorter than those for the corresponding benzyl and benzoate esters in this category (12.7 for methyl benzoate to 64.5 hours for methyl *p*-methylbenzoate) Generally, the carboxylate function of the ester is more stable to reaction with hydroxyl radicals than The calculated half lives for hydroxyl radical reactions range from 4.7 to 64.5 hours.

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
glyceryl triacetate	LOW	LOW
benzaldehyde	LOW	LOW
vanillin	LOW	LOW

Bioaccumulative potential

Ingredient	Bioaccumulation
glyceryl triacetate	LOW (BCF = 1.3)
benzaldehyde	LOW (LogKOW = 1.48)
vanillin	LOW (LogKOW = 1.21)

Mobility in soil

Ingredient	Mobility
glyceryl triacetate	LOW (KOC = 48.06)
benzaldehyde	LOW (KOC = 32.67)
vanillin	LOW (KOC = 38.45)

SECTION 13 DISPOSAL CONSIDERATIONS

Waste treatment methods

	Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked. A Hierarchy of Controls seems to be common - the user should investigate:
Product / Packaging	▶ Reduction
disposal	▶ Reuse
	▶ Recycling
	▶ Disposal (if all else fails)
	This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use

SECTION 14 TRANSPORT INFORMATION

Labels Required

Marine Pollutant NO

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

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

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

Transport in bulk according to Annex II of MARPOL 73 / 78 and the IBC code

Source	Ingredient	Pollution Category
IMO MARPOL 73/78 (Annex II) - List of Noxious Liquid Substances Carried in Bulk	glyceryl triacetate	Z

SECTION 15 REGULATORY INFORMATION

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

glyceryl triacetate(102-76-1) is found on the following regulatory lists	"US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory"
benzaldehyde(100-52-7) is found on the following regulatory lists	"US AIHA Workplace Environmental Exposure Levels (WEELs)","US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory"
vanillin(121-33-5) is found on the following regulatory lists	"US AIHA Workplace Environmental Exposure Levels (WEELs)","US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory"
National Inventory	Status
Australia - AICS	Y
Canada - DSL	Y
China - IECSC	Y
Europe - EINEC / ELINCS / NLP	Y
Japan - ENCS	Y
Korea - KECI	Y
New Zealand - NZIoC	Y
Philippines - PICCS	Y
USA - TSCA	Y
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

Other information

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.

A list of reference resources used to assist the committee may be found at: <u>www.chemwatch.net</u>

The (M)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.

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