SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Mixture

Name : Vinegar and Natural Flavor

Trade name : VERDAD® N335
VERDAD® N330

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

1.2.1. Relevant identified uses

Use of the substance/mixture : Food

1.2.2. Uses advised against:

Restrictions on use : This product must not be used in applications other than those identified above, without first seeking advice of the supplier

1.3. Details of the supplier of the safety data sheet

Purac Biochem bv
Arkelsedijk 46
4206 AC Gorinchem - The Netherlands
T +31 183 695695 - F +31 183 695604
sds@corbion.com

1.4. Emergency telephone number

Emergency number : +31 183 695695

Country	Organisation/Company	Address	Emergency number	Comment
Ireland	National Poisons Information Centre Beaumont Hospital	PO Box 1297 Beaumont Road 9 Dublin	+353 1 809 2566 (Healthcare professionals-24/7) +353 1 809 2166 (public, 8am - 10pm, 7/7)	
United Kingdom	National Health Service (NHS)		111 999 (in life-threatening emergencies)	
Wales	National Health Service (NHS)		0845 46 47	

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Skin corrosion/irritation, Category 1A H314

Serious eye damage/eye irritation, Category 1 H318

Full text of H statements : see section 16

Adverse physicochemical, human health and environmental effects

Causes skin irritation. Causes serious eye damage.

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP) :

GHS05

Signal word (CLP) : Danger

Hazardous ingredients : Natural Flavor

Hazard statements (CLP) : H314 - Causes severe skin burns and eye damage.

Precautionary statements (CLP) : P264 - Wash hands thoroughly after handling.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P303+P361+P353+P310 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.. Immediately call a doctor.
P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338+P310 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a doctor.
P363 - Wash contaminated clothing before reuse.

2.3. Other hazards

This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII

This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	Conc. (% w/w)	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Natural Flavor		<25	Skin Irrit. 2, H315 Eye Dam. 1, H318
Acetic Acid (from Vinegar)	(CAS-No.) 64-19-7	<20	Flam. Liq. 3, H226 Skin Corr. 1A, H314

Full text of H-statements: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : Get medical advice/attention if you feel unwell.

First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing.

First-aid measures after skin contact : Rinse skin with water/shower. Take off immediately all contaminated clothing. Call a physician immediately.

First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician immediately.

First-aid measures after ingestion : Rinse mouth. Do not induce vomiting. Call a physician immediately.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/effects after inhalation : May cause irritation to the respiratory tract.

Symptoms/effects after skin contact : Burns.

Symptoms/effects after eye contact : Serious damage to eyes.

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

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Water spray. Dry powder. Foam. Carbon dioxide.

Unsuitable extinguishing media : Do not use a solid water stream as it may scatter and spread fire.

5.2. Special hazards arising from the substance or mixture

Reactivity in case of fire : Under fire conditions, hazardous fumes will be present. Carbon dioxide. Carbon monoxide.

Hazardous decomposition products in case of fire : Under fire conditions, hazardous fumes will be present. Carbon monoxide. Carbon dioxide.

5.3. Advice for firefighters

Firefighting instructions : Evacuate personnel to a safe area. Use water spray or fog for cooling exposed containers. Move containers from fire area if it can be done without personal risk. Prevent fire fighting water from entering the environment.

Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Protective equipment : Wear recommended personal protective equipment.

Emergency procedures : Ventilate spillage area. Avoid contact with skin and eyes. Do not touch or walk on the spilled product. Evacuate unnecessary personnel. Do not breathe mist, spray, vapours.

6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

For containment : Stop leak without risks if possible. For large spills, confine the spill in a dike and charge it with wet sand or earth for subsequent safe disposal.

Methods for cleaning up : Take up liquid spill into absorbent material. Shovel or sweep up and put in a closed container for disposal.

Other information : Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 8: "Exposure controls/personal protection". For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Ensure good ventilation of the work station. Avoid contact with skin and eyes. Wear personal protective equipment.

Hygiene measures : Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Always wash hands after handling the product. Avoid contact with skin, eyes and clothing. Do not breathe vapour/aerosol.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep container tightly closed in a cool, well-ventilated place.

Storage area : Store according to local legislation.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

EU - Occupational Exposure Limits	
Local name	Acetic Acid (from Vinegar)
IOELV TWA (mg/m³)	25 mg/m³

IOELV TWA (ppm)	10 ppm
IOELV STEL (mg/m³)	50 mg/m³
IOELV STEL (ppm)	20 ppm
Regulatory reference	COMMISSION DIRECTIVE (EU) 2017/164
Ireland - Occupational Exposure Limits	
Local name	Acetic Acid (from Vinegar)
OEL (8 hours ref) (mg/m³)	25 mg/m³
OEL (8 hours ref) (ppm)	10 ppm
OEL (15 min ref) (mg/m3)	50 mg/m³
OEL (15 min ref) (ppm)	20 ppm
Notes (IE)	IOELV (Indicative Occupational Exposure Limit Values)
Regulatory reference	Code of Practice for the Chemical Agents Regulations 2018
United Kingdom - Occupational Exposure Limits	
Local name	Acetic Acid (from Vinegar)
WEL TWA (mg/m³)	25 mg/m³
WEL TWA (ppm)	10 ppm
WEL STEL (mg/m³)	50 mg/m³
WEL STEL (ppm)	20 ppm
Regulatory reference	EH40/2005 (Third edition, 2018). HSE

Acetic Acid (from Vinegar)	
DNEL/DMEL (Workers)	
Acute - local effects, inhalation	25 mg/m³
Long-term - local effects, inhalation	25 mg/m³
DNEL/DMEL (General population)	
Acute - local effects, inhalation	25 mg/m³
Long-term - local effects, inhalation	25 mg/m³
PNEC (Water)	
PNEC aqua (freshwater)	3.058 mg/l
PNEC aqua (marine water)	0.3058 mg/l
PNEC aqua (intermittent, freshwater)	30.58 mg/l
PNEC (Sediment)	
PNEC sediment (freshwater)	11.36 mg/kg dwt
PNEC sediment (marine water)	1.136 mg/kg dwt
PNEC (Soil)	
PNEC soil	0.47 mg/kg dwt
PNEC (STP)	
PNEC sewage treatment plant	85 mg/l

8.2. Exposure controls

Appropriate engineering controls:

Ensure good ventilation of the work station. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.

Hand protection:					
Protective gloves					
Type	**Material**	**Permeation**	**Thickness (mm)**	**Penetration**	**Standard**
Protective gloves	Butyl rubber	6 (> 480 minutes)	0.5		EN 374

Eye protection:			
Chemical goggles or safety glasses			
Type	**Use**	**Characteristics**	**Standard**
Safety goggles	Droplet		EN 166

Skin and body protection:	
Wear suitable protective clothing	
Type	**Standard**
Long sleeved protective clothing	

Respiratory protection:			
No respiratory protection needed under normal use conditions. Where exposure through inhalation may occur from use, respiratory protection equipment is recommended			
Device	**Filter type**	**Condition**	**Standard**
Reusable half mask	Filter AX (brown)	Mist formation, Vapour protection	

Personal protective equipment symbol(s):

Environmental exposure controls:

Avoid release to the environment.

Other information:

Handle in accordance with good industrial hygiene and safety procedures. Do not eat, drink or smoke when using this product. Always wash hands after handling the product. Avoid contact with skin, eyes and clothing. Do not breathe mist, vapours.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Colour	: Brown
Odour	: No data available
Odour threshold	: No data available
pH	: 3.5 - 5.5
Relative evaporation rate (butylacetate=1)	: No data available
Melting point	: Not applicable
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: Not applicable
Vapour pressure	: No data available
Relative vapour density at 20 °C	: No data available

Relative density	: No data available
Density	: 1100 - 1250 kg/m³
Solubility	: Soluble in water
Log Pow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: No data available

9.2. Other information
No additional information available

SECTION 10: Stability and reactivity
10.1. Reactivity
The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability
Stable under normal conditions.

10.3. Possibility of hazardous reactions
No dangerous reactions known under normal conditions of use. Hazardous polymerisation: Will not occur.

10.4. Conditions to avoid
Above a temperature of: 200 °C.

10.5. Incompatible materials
No additional information available

10.6. Hazardous decomposition products
Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information
11.1. Information on toxicological effects
Acute toxicity (oral) : Not classified

Acute toxicity (dermal) : Not classified

Acute toxicity (inhalation) : Not classified

Natural Flavor	
LD50 oral rat	3543 mg/kg bodyweight
LD50 dermal rabbit	> 2000 mg/kg bodyweight
LC50 inhalation rat (Dust/Mist - mg/l/4h)	7.94 mg/l/4h (OECD 403 method)

Acetic Acid (from Vinegar)	
LD50 oral rat	3310 mg/kg bodyweight
LD50 oral	4960 mg/kg bodyweight

Skin corrosion/irritation : Causes severe skin burns and eye damage.
pH: 3.5 - 5.5

Serious eye damage/irritation : Causes serious eye damage.
pH: 3.5 - 5.5

Respiratory or skin sensitisation : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Reproductive toxicity : Not classified

STOT-single exposure : Not classified

STOT-repeated exposure : Not classified

Acetic Acid (from Vinegar)	
NOAEL (oral, rat, 90 days)	290 mg/kg bodyweight Animal: rat, Animal sex: male

Aspiration hazard : Not classified

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment.

Hazardous to the aquatic environment, short-term (acute) : Not classified

Hazardous to the aquatic environment, long-term (chronic) : Not classified

Natural Flavor	
LC50 fish 1	130 - 320 mg/l
EC50 Daphnia 1	320 - 750 mg/l
ErC50 (algae)	3500 mg/l
NOEC chronic algae	1900 mg/l

Acetic Acid (from Vinegar)	
LC50 fish 2	> 300.82 mg/l Oncorhynchus mykiss (Rainbow trout)
EC50 Daphnia 2	> 300.82 mg/l daphnia
EC50 72h algae (2)	> 300.82 mg/l

12.2. Persistence and degradability

VERDAD® N335 VERDAD® N330	
Persistence and degradability	Preparation based on substances which are readily biodegradable.

Natural Flavor	
Persistence and degradability	Readily biodegradable.

Acetic Acid (from Vinegar)	
Persistence and degradability	Readily biodegradable.

12.3. Bioaccumulative potential

VERDAD® N335 VERDAD® N330	
Bioaccumulative potential	Bioaccumulation unlikely.

Natural Flavor	
Log Pow	-0.54 (OECD 107 method)

Acetic Acid (from Vinegar)	
BCF fish 1	3.16 Quantitative structure-activity relationship (QSAR)
Log Pow	-0.17
Bioaccumulative potential	Low bioaccumulation potential.

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

VERDAD® N335 **VERDAD® N330**
This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII
This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

Component	
Natural Flavor	This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII
Acetic Acid (from Vinegar)	This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

12.6. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Regional legislation (waste) : Dispose in a safe manner in accordance with local/national regulations.

Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.

Product/Packaging disposal recommendations : Dispose in a safe manner in accordance with local/national regulations.

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

ADR	IMDG	IATA	ADN	RID
14.1. UN number				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
14.2. UN proper shipping name				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
14.3. Transport hazard class(es)				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
14.4. Packing group				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
14.5. Environmental hazards				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
This product contains food grade vinegar resulting in a concentration of < 25% Acetic Acid (from Vinegar) in the complete product. According to ADR (2019) chapter 3.3, special provision 647 is applicable for this product.				

14.6. Special precautions for user

Overland transport

Not regulated

Transport by sea

Not regulated

Air transport

Not regulated

Inland waterway transport

Not regulated

Rail transport

Not regulated

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

15.1.1. EU-Regulations

The following restrictions are applicable according to Annex XVII of the REACH Regulation (EC) No 1907/2006:		
Reference code	Applicable on	Entry title or description
3(a)	Acetic Acid (from Vinegar)	Substances or mixtures fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: Hazard classes 2.1 to 2.4, 2.6 and 2.7, 2.8 types A and B, 2.9, 2.10, 2.12, 2.13 categories 1 and 2, 2.14 categories 1 and 2, 2.15 types A to F
3(b)	Vinegar and Natural Flavor;	Substances or mixtures fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: Hazard classes 3.1 to 3.6, 3.7 adverse effects on sexual function and fertility or on development, 3.8 effects other than narcotic effects, 3.9 and 3.10
40.	Acetic Acid (from Vinegar)	Substances classified as flammable gases category 1 or 2, flammable liquids categories 1, 2 or 3, flammable solids category 1 or 2, substances and mixtures which, in contact with water, emit flammable gases, category 1, 2 or 3, pyrophoric liquids category 1 or pyrophoric solids category 1, regardless of whether they appear in Part 3 of Annex VI to Regulation (EC) No 1272/2008 or not.

Contains no substance on the REACH candidate list

Contains no REACH Annex XIV substances

Contains no substance subject to Regulation (EU) No 649/2012 of the European Parliament and of the Council of 4 July 2012 concerning the export and import of hazardous chemicals.

Contains no substance subject to Regulation (EU) No 2019/1021 of the European Parliament and of the Council of 20 June 2019 on persistent organic pollutants

15.1.2. National regulations

No additional information available

15.2. Chemical safety assessment

No chemical safety assessment has been carried out

SECTION 16: Other information

Indication of changes:
Not applicable.

Abbreviations and acronyms:	
ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Acute Toxicity Estimate
BCF	Bioconcentration factor
CLP	Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
DMEL	Derived Minimal Effect level
DNEL	Derived-No Effect Level
EC50	Median effective concentration
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association

IMDG	International Maritime Dangerous Goods
LC50	Median lethal concentration
LD50	Median lethal dose
LOAEL	Lowest Observed Adverse Effect Level
NOAEC	No-Observed Adverse Effect Concentration
NOAEL	No-Observed Adverse Effect Level
NOEC	No-Observed Effect Concentration
OECD	Organisation for Economic Co-operation and Development
PBT	Persistent Bioaccumulative Toxic
PNEC	Predicted No-Effect Concentration
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
SDS	Safety Data Sheet
STP	Sewage treatment plant
vPvB	Very Persistent and Very Bioaccumulative

Training advice : Ensure staff are informed of and trained on the nature of exposure and basic actions to minimise exposure.

Full text of H- and EUH-statements:	
Eye Dam. 1	Serious eye damage/eye irritation, Category 1
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
Flam. Liq. 3	Flammable liquids, Category 3
Skin Corr. 1A	Skin corrosion/irritation, Category 1A
Skin Corr. 1B	Skin corrosion/irritation, Category 1B
Skin Irrit. 2	Skin corrosion/irritation, Category 2
H226	Flammable liquid and vapour.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.

Corbion SDS EU (REACH Annex II)

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.