IMCD

Product Portfolio
Distilling

www.imcdgroup.com

Creating a world of opportunity

IMCD Industrial Solutions

IMCD has been a valued supporter of the Australian beverage industry for over 40 years. We are actively involved in the distilled spirits and brewing industries and are members of the ADA (Australian Distillers Association) and IBD (Institute of Brewing and Distilling).

This portfolio showcases our broad range of exclusive products from our valued suppliers. With the support of our expert sales team, customers Australia wide can choose products that best suit their applications.

IMCD: Creating a World of Opportunity.

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Our Team

Darren Burt	Business Unit Manager - Industrial Solutions	+61 (0) 425 717 344	Darren.Burt@imcd.com.au
Sue Mills	Principal Manager	+61 (0) 427 370 008	Sue.Mills@imcd.com.au
Customer Service	Australia	+61 (0) 8544 3100	cs@imcd.com.au
Tanya Harvey	Telesales - VIC/TAS	+61 (0) 468 541 887	Tanya.Harvey@imcd.com.au
Indika Weerasinghe	Account Manager - SA	+61 (0) 427 370 011	Indika.Weerasinghe@imcd.com.au
Patrick Wesley	Account Manager - NSW	+61 (0) 425 220 157	Patrick.Wesley@imcd.com.au
Bev Romero	Account Manager - WA	+61 (0) 425 724 084	Bev.Romero@imcd.com.au
Nathan Schultz	Account Manager - QLD	+61 (0) 427 011 256	Nathan.Schultz@imcd.com.au
Customer Service	New Zealand	+64 (0) 9 582 0250	imcdcs@imcd.co.nz
Chantelle Swanepoel	Principal Manager - NZ	+64 (0) 274 894 790	Chantelle.Swanepoel@imcd.co.nz
Karl Crawford	Principal Manager - NZ	+64 (0) 212 290 581	Karl.Crawford@imcd.co.nz
Dipin Pappachan	Account Manager - NZ	+64 (0) 274 904 261	Dipin.Pappachan@imcd.co.nz

Distilling

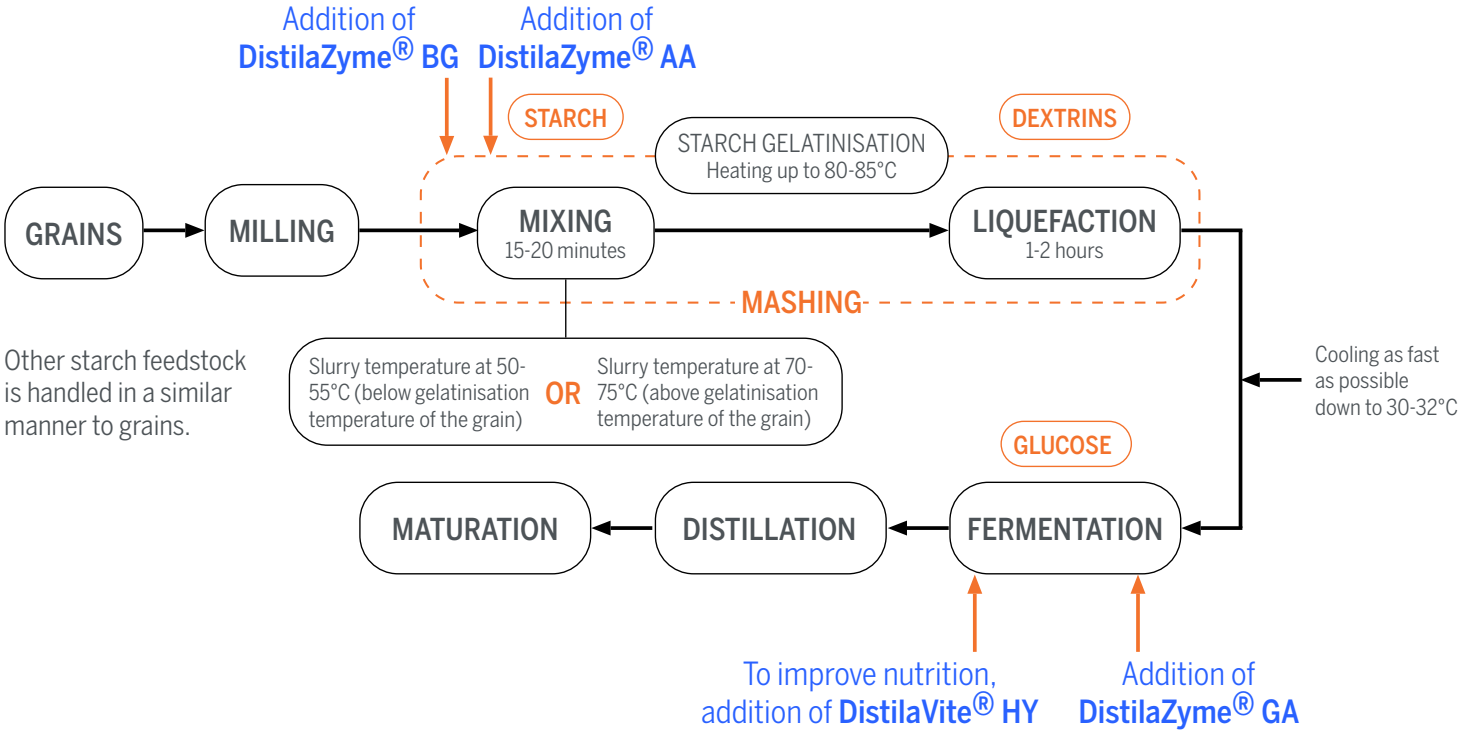
ENZYMES - DistilaZyme		
4394700VR	DISTILAZYME GA 1KG PACK DISTILAZYME GA 20KG PACK	Glucoamylase
4409630VR	DISTILAZYME AA 1KG PACK DISTILAZYME AA 20KG PACK	Alpha Amylase
4433320VR	DISTILAZYME BG 1KG PACK DISTILAZYME BG 20KG PACK	Beta-Glucanase
YEASTS - DistilaMax		
4405760VR 440576JCR	DISTILAMAX RM 0.5KG PACK DISTILAMAX RM 10KG PACK	Rum, Molasses, Cane juice
4434810VR 443481JCR	DISTILAMAX SR 0.5KG PACK DISTILAMAX SR 10KG PACK	Rum, Molasses, Cane juice
4414440VR 441444JCR	DISTILAMAX CN 0.5KG PACK DISTILAMAX CN 10KG PACK	Rum, Molasses, Cane juice
511701JCR	DISTILAMAX ML 10KG PACK	
4431631VR 4431630VR	DISTILAMAX LS 0.5KG PACK DISTILAMAX LS 10KG PACK	Light Neutral Spirit, Fruit
4401810VR	DISTILAMAX HT 0.5KG PACK DISTILAMAX HT 10KG PACK	High temp tolerant yeast
4409840VR 440984JCR	DISTILAMAX TQ 0.5KG PACK DISTILAMAX TQ 10KG PACK	Tequila, Fructophilic yeast
476623SBR 476623JCR	DISTILAMAX AG 0.5KG PACK DISTILAMAX AG 10KG PACK	Agave Spirit (Mexican origin) Fructophilic yeast
4437220VR 4437221VR	DISTILAMAX MW 0.5KG PACK DISTILAMAX MW 10KG PACK	Malt Whisky
4400761VR 4400760VR	DISTILAMAX GW 0.5KG PACK DISTILAMAX GW 10KG PACK	Grain Whisky
4385310VR 438531JCR	DISTILAMAX XP 0.5KG PACK DISTILAMAX XP 10KG PACK	Malt Whisky, elevated temperature producing complex congeners, higher ester production. This is a Diastatic yeast
4382141VR 4382140VR	DISTILAMAX NT 0.5KG PACK DISTILAMAX NT 10KG PACK	Grain & Malt Whisky, desirable congener profile, increased complexity and fruit characters
YEAST NUTRIENTS - DistilaVite		
4405960VR 440596JCR	DISTILAVITE GN 0.5KG PACK DISTILAVITE GN 10KG PACK	Complex nutrient for sugar & grain ferments
4398480VR	DISTILAVITE VM 0.5KG PACK DISTILAVITE VM 10KG PACK	Nutrient with enzyme for grain ferments
4411490VR	DISTILAVITE HY 0.5KG PACK	Nutrient for grain ferment with protease
BACTERIA - DistilaBact		
4435700VR	DISTILABACT LP	Lactobacillus bacteria for whisky

Why do we Need Enzymes in Grain Spirits Production?

- **To break non-starch viscosity down**
- **To break starch down to fermentable sugars**
- **To break peptides down to amino acids**

All the cereals (corn, rye, barley, rice, etc.) and some roots, i.e. potatoes, contain starch which are glucose polymers. Starch cannot be fermented by yeast directly and must be broken down to simple sugars: glucose, maltose.

Diagram of Grain Spirits Production



The optimal DistilaZyme® AA, DistilaZyme® BG and DistilaZyme® GA dosages are variable according to individual distillery production processes.

How do Enzymes Work?

Enzymes are highly specific: one enzyme catalyses one biochemical reaction: one key for one lock!

- **Beta-glucanase (BG) reduces non-starch viscosity**
- **Alpha-amylase (AA) breaks down starch into dextrins**
- **Glucoamylase (GA) breaks down dextrins into glucose**
- **Protease breaks down proteins into amino acids**

The activity of the enzymes depends mainly on the pH, the temperature and the dosage.

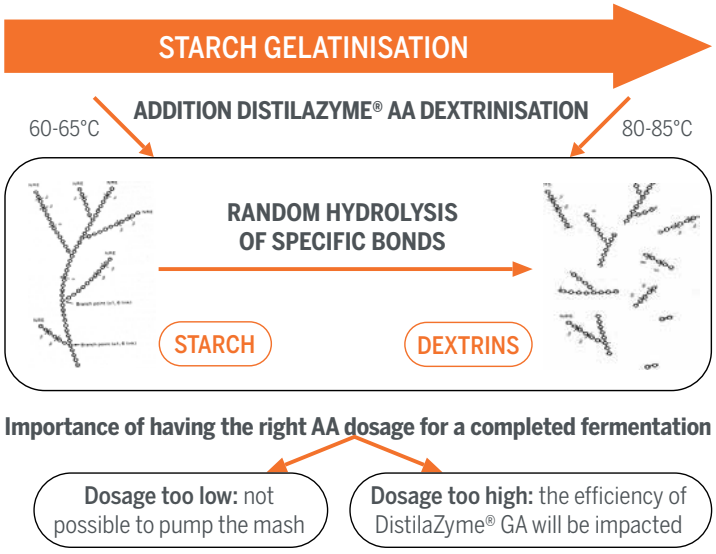
DISTILAZYME® BG
DISTILAZYME® AA

Goal: Reduce viscosity to pump the mash and to provide a substrate for DistilaZyme® GA action.

How does it work?

DistilaZyme® BG is a liquid β-glucanase enzyme complex that quickly hydrolyses non-starch polysaccharides (NSPs) such as β-glucans and xylans reducing viscosity in mashes that contain high proportions of rye, wheat or other small grains. It works well in combination with **DistilaZyme® AA.**

DistilaZyme® AA.
After mixing, the temperature is increased progressively. During heating, the granules swell irreversibly and the granular structure collapses: Gelatinisation. For each type of grain there is a typical gelatinisation temperature range. This changes according to variety, region, year, etc. We increase the temperature for DistilaZyme® AA activity and for the liquefaction (dextrinisation) to occur.



Importance of having the right AA dosage for a completed fermentation

- **Dosage too low:** not possible to pump the mash
- **Dosage too high:** the efficiency of DistilaZyme® GA will be impacted

DISTILAZYME® GA

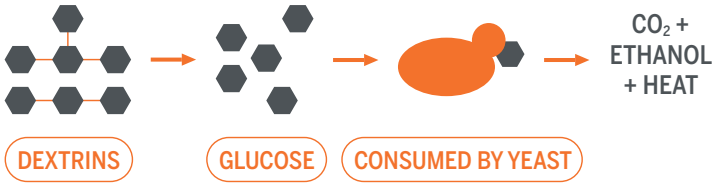
Goal: To convert dextrins resulting from DistilaZyme® AA action into fermentable sugars: Saccharification.

How does it work?

Glucoamylase breaks Alpha-bonds to convert dextrins (oligosaccharides) into glucose units.

When to add DistilaZyme® GA
Simultaneous Saccharification and Fermentation (SSF): after liquefaction, the mash is cooled to fermentation temperature and DistilaZyme® GA is added 1-2 hours after the yeast directly in fermenter. It allows control of contamination and osmotic stress due to controlled sugar release therefore a good start of fermentation.

We do not recommend to use DistilaZyme® GA before the fermentation vessel because it can cause significant issues with contamination and osmotic stress.

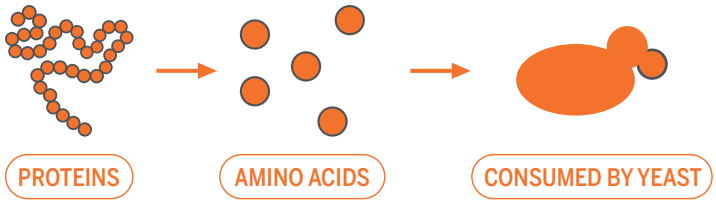


Importance of having the right GA dosage for a completed fermentation

- **Dosage too low:** will lead to slow fermentation: yeast will be starving. Fermentation will not be completed efficiently.
- **Dosage too high:** will produce high amount of glucose in the start, which will lead to osmotic stress for the yeast. Fermentation will not be completed efficiently.

DISTILAVITE® HY

Goal: To provide a gradual and optimised release of natural amino acids during the fermentation.



They have the right protease dosage for a completed fermentation:

DistilaVite HY is added to the fermenter at the start of filling.

How does it work?

Yeast is a complex living organism which needs a balanced nutrient package. Thanks to its specific selected proteolytic enzymes, DistilaVite® HY allows the release of essential amino acids throughout the entire fermentation process.

Characteristics of DistilaMax® Yeasts

TEMPERATURE	RAW MATERIAL	DISTILAMAX®	PH RANGE	ETHANOL CONTENT	HIGHER ALCOHOLS	ESTERS	ADDITIONAL INFORMATION
20°C - 28°C	Malted Grain	MW	3.8 - 5.3				
		NT	3.8 - 5.3				
		XP	3.8 - 5.3				
28° - 34°C		MW	3.8 - 5.3				
		NT	3.8 - 5.3				
		XP	3.8 - 5.3				
34°C - 36°C		MW	3.8 - 5.3				
		NT	3.8 - 5.3				
		XP	3.8 - 5.3				
20°C - 34°C	Grain	GW	3.8 - 5.3				Used for Whisky
20°C - 36°C		NT	3.8 - 5.3				
25°C - 33°C		MW	3.8 - 5.3				Recommend with rye due to foam
28°C - 35°C		HT	3.8 - 5.8				Used for neutral spirit production
25°C - 38°C	CANE Molasses	CN	3.4 - 5.3				Selected on cane juice, works well at high temperature
25°C - 38°C		ML	3.6 - 5.3				
25°C - 36°C		SR	3.6 - 5.3				Selected on molasses
25°C - 34°C	BEET Molasses	SR	3.6 - 5.3				Selected on molasses
27°C - 33°C	SUGAR CANE Juice	RM	3.3 - 5.3				Selected on cane juice, works well at high temperature
33°C - 36°C		RM					
27°C - 33°C		CN	3.4 - 5.3				Selected on cane juice, works well at high temperature
33°C - 38°C		CN					
27°C - 33°C		SR	3.6 - 5.3				Good results on ethanol content
20 °C - 33°C	Agave	TQ	3.2 - 5.2				
20 °C - 33°C		LS	3.2 - 5.2				
36 °C - 38°C		AG	3.8 - 5.2				
20 °C - 33°C	Fruit	LS	3.2 - 5.2				Works well at low pH
20 °C - 33°C		TQ	3.2 - 5.2				

LALLEMAND BIOFUELS & DISTILLED SPIRITS

= Lowest = Highest

Givaudan

Givaudan has the flavours you need to create innovative beverage products that delight the consumer

TasteSolutions® Alcohol Modifier Flavours

Key taste and sensory attributes associated with alcohol beverage experience

Alcohol Perception and Boosting

Modification combined with boosting of the alcoholic taste with enhancement of body and mouthfeel

Ageing

Modification that delivers the perception of key attributes associated with barrel ages spirits

Smoothening

Modification combined with smoothening of the alcoholic taste offering a premium experience.

Sensation

Modification combined with sparkling booster for micro bubble perception and tingling effect

Sweetness

Modification of alcohol combined with an increase in the sweetness perception, also enabling sugar reduction

Please discuss your requirements with our IMCD representatives

SALTS, ACIDS, pH ADJUSTMENT, NUTRIENTS		
4395500VP	CALCIUM SULPHATE FCC - ACG 11.34KG BAG	
441638ACR	OMYABAKE 50 KP 25KG BAG	Calcium Carbonate
441245ALP	CALCIUM CHLORIDE 77% FOOD 25KG BAG	
4435060VP	MAGNESIUM SULPHATE USP 22.7KG BAG	
364458FHR	LACTIC ACID 88% 25KG DRUM	Lactic Acid
441034ALR	SODIUM BICARBONATE 25KG	pH Balancer
440202AFR	CITRIC ACID ANHYDROUS 15KG	pH Adjustant
307132ALR	DAP FOOD GRADE 25KG	Nitrogen source for yeast

pK Chemicals

OMYA

ACG MATERIALS

Corbion

Interested to learn more? Contact your IMCD representative

Distilling

CARBON

275098ALR	NORIT GAC 1240 W 25KG	Multipurpose for removal of taste & odour
438212ALR	NORIT GAC 830 W 25KG	
442091A2R	NORIT PK 1-3 10KG	

CARAMELS AND COLOURS

Product Name	Description	Hue Index (Typical)	Stability in Alcohol (ABV)
CARAMEL 050	Class IV, double strength	4.2	50%
CARAMEL 108	Class IV, single strength	5.8	60%
CARAMEL 136	Class IV, single strength	5.4	75%
CARAMEL 520	Class I, acid proof	6.5	60%
CARAMEL 570	Class I	7.0	80%
BURNT SUGAR 720	Burnt Sugar, acid proof	6.5	60%
BURNT SUGAR 785	Burnt Sugar	6.5	75%
NaturBrown 805	Natural Caramelised Pear Juice	6.8	60%
NaturBrown 811	Natural Caramelised Apple Juice	6.8	60%
CARAMEL 820	Certified Organic Caramel Colour, acid proof	6.5	60%
CARAMEL 830	Natural Flavouring; Caramelised Sugar	6.0	35%

FILTER SHEET GRADES

Z4 - Z5	Prefiltration	Whisky, Brandy
Z3 - Z4	Prefiltration	Dark Rum , Bourbon
Z6 - Z7 - Z8	Final filtration during bottling	Whisky, Brandy
Z5 - Z6 - Z7	Final filtration during bottling	Dark Rum , Bourbon
Z6 - Z7	Final filtration during bottling	White Spirits
Z3 - Z4 - Z5	Final filtration during bottling	Liqueurs

ANTIFOAMS

Silfax D20	Food grade reduction in foaming	Applicable antifoam for all spirits

IMCD Australia Pty Ltd

Level 1, 352 Wellington Road,
Mulgrave, VIC, 3170
Australia

E cs@imcd.com.au
T +61 (0) 8544 3100

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