



APPLICATION GUIDE FOR MUSIM MAS EMULSIFIERS

BAKERY Applications

CATEGORY	OUR PRODUCT	USAGE LEVELS (recommended)	APPLICATION/FUNCTIONALITY
Plain & Wholegrain bread/rolls, bread improvers & bakery mixes	MASEMUL™ MDG 5080	0.25-1.0% basis flour wt.	Crumb softener , anti-staling, to be added to the fat prior to mixing with other ingredients.
	MASEMUL™ DMG 9320 NH	0.5-0.8% basis flour wt.	Crumb softener, anti-staling, fine powder. Applicable for dry mix applications.
	MASEMUL™ SSL 2802	0.25-0.5% basis flour wt.	Dough conditioner, strengthener. Regulated by 21.CFR 172.846 Food Chemical codex, 0.5% maximum
Biscuits/ Cookies/ Crackers	MASEMUL™ MDG 5080	0.5-2.0% basis flour wt.	Dough development
	MASEMUL™ SSL 2802	0.5% basis flour wt.	Fat reduction, increased spread.
Cake Batters	MASEMUL™ MDG 5080	1.0-3.0% basis flour wt.	Batter emulsion and aeration stability
	MASEMUL™ SSL 3302	0.25-0.5% basis flour wt.	Emulsification, stability
	MASEMUL™ PGE 5702	0.3-0.5% basis total wt.	Ensures good aeration of cake batters/improves crumb structure in cakes/facilitates all-in-one procedures
Cake Mixes	MASEMUL™ MDG 5080	4.0-5.0% basis fat wt.	Helps aerate and stabilize the batter, improves aeration. Combine with the fat phase first.
	MASEMUL™ PGE 5702	0.3-0.5% basis fat wt.	
	MASEMUL™ MDG 5080	1.0-3.0% basis fat	Aeration emulsification, cake donut crumb softener. Combine with the fat phase first.
	MASEMUL™ PGE 5702	0.3-0.5% basis total wt	
Sponge Cake Improvers/ Cake gels	MASEMUL™ PGMS 9502	10-14% basis total wt (improvers) 5-15% basis total wt (cake gels)	Promotes large cake volume Provides good whipping properties, uniform cake structure, good cake batter stability
Extruded starch & cereal products	MASEMUL™ DMG 9502	as required	Reduces sticking during processing, process aid
	MASEMUL™ DMG 9320 NH	0.3-1.0% basis dry wt	Improves crispness, process aid, improves product quality and easier production
Pasta/Noodles	MASEMUL™ DMG 9502	0.5-1.0% basis dry wt	Improves freeze-thaw stability
	MASEMUL™ DMG 9320 NH	0.3-1.1.0% basis dry wt	Prevents sticking; improves cooking stability and Facilitates easier production

PT MUSIM MAS (Functional Products Division)

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High-ratio Cake Shortening/ Cake margarine	MASEMUL™ PGMS 9502	3.0-5.0% basis total wt (shortening) 0.5-1.0% basis total wt (margarine)	Promotes large cake volume; Provides good whipping properties
	MASEMUL™ LMG 2202	0.7-1.0% basis total wt (cake margarine) 3.0-5.0% basis total wt. (high-ratio shortening)	Improves cake volume and crumb structure
Fillings	MASEMUL™ SSL 2802	0.1-0.2 total wt	Stabilizes emulsion and improves texture and appearance
	MASEMUL™ MDG 5080	6-8% based on shortening	Improves mouth feel and prevents weeping
Icings	MASEMUL™ MDG 5080	6-8% based on shortening	Improves mouth feel and prevents weeping
Sponge Cake Improvers/ Cake gels	MASEMUL™ PGMS 9502	10-14% basis total wt (improvers) 5-15% basis total wt (cake gels)	Promotes large cake volume Provides good whipping properties, uniform cake structure, good cake batter stability
	MASEMUL™ PGE 5702	15-17% basis total wt	Provides good cake overrun and whipping stability
	MASEMUL™ PGE 4090	15-17% basis total wt	
	MASEMUL™ DMG 8502 SE	8-10% basis total wt	
Topping Powders	MASEMUL™ PGMS 9502	2-3% basis total wt	Provides short whipping time, improves overrun, creates nice stiff foam,
	MASEMUL™ LMG 2202	10-14% basis total wt	Increases overrun and improves foam stiffness

BEVERAGES Applications

CATEGORY	OUR PRODUCT	USAGE LEVELS (recommended)	APPLICATION FUNCTIONALITY
Cream Liquors	MASEMUL™ DMG 9502	0.5% basis total wt	Stabilizes alcoholic dairy emulsions
Infant Totals	MASEMUL™ MDG 5080	6-8% based on shortening	Improves mouth feel and prevents weeping
	MASEMUL™ DMG 9595	0.5-1.0% basis total wt	Helps stabilize emulsion
	MASEMUL™ DMG 9320 NH	0.5-1.0% basis total wt	Creates stable dispersion
Sport Drinks/ Nutritional Supplements	MMESTER E6000	0.3-1.0% basis total wt	Acts as a clouding agent and helps disperse flavors
	MASEMUL™ MDG 5080	as required	Improves flavor stability
	MASEMUL™ DMG 9320 NH	as required	Improves flavor stability, solubilizes vitamin oil

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CONFECTIONERY Applications

CATEGORY	OUR PRODUCT	USAGE LEVELS (recommended)	APPLICATION/FUNCTIONALITY
Chocolate, compound coatings, ice cream coatings	MASEMUL™ PGPR 9090	0..1-0.3% basis total wt.	Fat reduction, ease of production, cost saving
	MASEMUL™ LMG 2202	0.15-0.2% basis fat wt.	Prevents bloom in chocolate and chocolate compound
Caramels	MASEMUL™ MDG 5080	0.5% basis total wt	Controls fat dispersion in caramel; to be added to the fat phase prior to other ingredients
Caramel/ marshmallows	MASEMUL™ PGE 5702	0.3-0.5% basis total weight	Secures a high overrun
Licorice	MASEMUL™ MDG 4202	0.5% basis total weight	Improves lubricity by reducing stickiness, improves flavor release.
Topping Powders	MASEMUL™ PGMS 9502	2-3% basis total wt	Provides short whipping time, improves overrun, creates nice stiff foam,
Licorice	MASEMUL™ MDG 4202	0.5% basis total weight	Improves lubricity by reducing stickiness, improves flavor release.
Taffy	MASEMUL™ MDG 5202	0.5% basis total weight	Reduces stickiness, improves lubricity and enhances bite and mouth feel.
Compound Coatings	MASEMUL™ DMG 9502	as required	Speeds fat crystallization, improves dispersion in compound coatings
Gum	MASEMUL™ MDG 4202	0.5-1.0%, total wt	Provides lubricity, antisticking, emulsification of gum base
Syrups	MASEMUL™ MDG 5202	0.5% basis total wt	Improves emulsification stability, improves mouth feel

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DAIRY/NON-DAIRY Applications

CATEGORY	OUR PRODUCT	USAGE LEVELS (recommended)	APPLICATION FUNCTIONALITY
Coffee Whiteners, Powder & Liquid	MASEMUL™ DMG 9502	0.1-1.0% basis total wt	Helps create stable emulsion and aids fat dispersion
	MASEMUL™ DMG 9502	0.1-1.0% basis total wt	Helps create emulsion and aids fat dispersion
	MASEMUL™ MDG 5080	0.5-2.0% basis total wt	Helps create emulsion and aids fat dispersion
	MASEMUL™ DMG 9320 NH	0.5-2.0% basis total wt	Helps create emulsion and aids fat dispersion
	MASEMUL™ MDG 5202	0.5-2.0% basis total wt	Imparts freeze-thaw stability
	MASEMUL™ SSL 2802	0.1-0.3% basis total wt	Improves whitening, mouth feel and storage ability through protein interactions.
Ice Cream/Ice Milk/Mellorine/Soft Serve	MASEMUL™ DMG 9502	as required	Improves dispersion and stability to freeze thawing
	MASEMUL™ DMG 9320 NH	0.1-1.0% basis total wt	Imparts dryness and overrun
Imitation Sour Cream and Dip	MASEMUL™ DMG 9502	0.5-1.0% basis total wt	Improves texture and capacity of water
	MASEMUL™ MDG 5080	0.5-1.0% basis total wt	Improves mouth feel and increases stability
	MASEMUL™ MDG 5202	0.5-1.0% basis total wt	Helps create emulsion and increases stability
	MASEMUL™ MDG 5080	0.5-1.0% basis total wt	Trans free emulsifier that improves mouth feel and increases stability
Whipped Toppings, Liquid and Powder	MASEMUL™ DMG 9502	0.5-1.0% basis total wt	Provides good aeration, texture, overrun, stability with improved mouth feel
	MASEMUL™ DMG 9502	0.5-1.0% basis total wt	Provides body, texture, overrun
	MASEMUL™ SSL 2802	0.2% max basis total wt	Provides aeration and stability.
	MASEMUL™ MDG 5080	0.5-2.0% basis total wt	Helps create emulsion while improving texture, mouth feel
Puddings/ Snack Dips	MASEMUL™ SSL 2802	0.2% max basis total wt	Stabilizes emulsion, improves texture and appearance. Regulated under 21
	MASEMUL™ DMG 9502	0.25-0.75% basis total wt	Helps create emulsion, improves dispersion, stability and texture
Vegetable Whipped Cream/Topping Powders	MASEMUL™ LMG 2202	0.1-0.5% basis total wt	Increases overrun and improves foam stiffness

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PROCESSED FOODS(by Application)

CATEGORY	OUR PRODUCT	USAGE LEVELS (recommended)	APPLICATION FUNCTIONALITY
Imitation Cheeses	MASEMUL™ DMG 9502	0.5-3.0% basis total wt	Improves mouthfeel, stability
	MASEMUL™ SSL 2802	0.1-0.2% basis total wt	Stabilizes emulsion while giving body and smooth texture. Regulated under 21 CFR 172.846
Peanut Butter	MASEMUL™ MDG 4202	2.0-4.0% basis total wt	Inhibits oil separation while improving texture
	MASEMUL™ MDG 5202	1.75-2.5% basis total wt	Inhibits oil separation while improving texture
	MASEMUL™ DMG 9502	1.0-2.5% basis total wt	Inhibits oil separation, reduces stickiness, improves stability, and increases flavor retention
		as required	Modifies fat crystals and improves stability
Processed Potatoes	MASEMUL™ SSL 2802	0.25% basis on solids	Improves ease of hydration, palatability, texture while reducing stickiness. Regulated under 21 CFR 172.846
	MASEMUL™ DMG 9502	0.3-0.8% basis on total wt	Improves water holding, palatability, and steam stability
	MASEMUL™ DMG 9502	0.3-0.8% basis on total wt	Improves texture and prevents sticking
	MASEMUL™ MDG 5080	0.5-1.0% basis on solids	Improves sheeting and texture in doughs
Sauces/Gravies	MASEMUL™ MDG 5080	0.5-2.0% basis total wt	Increases stability, shelf life while improving mouth feel
	MASEMUL™ SSL 2802	0.1-0.5% basis total wt	Improves emulsion stability and increases shelf life while reducing skinning.
	MASEMUL™ DMG 9320 PH	0.2-0.5% basis total wt	Improves freeze-thaw stability, reduces skinning, increases stability and facilitates emulsification
Pet Foods	MASEMUL™ MDG 5080	2.0-4.0% basis total wt	Aids extrusion, retards firming
	MASEMUL™ MDG 5202	2.0-4.0% basis total wt	Aids extrusion while preventing fat separation
	MASEMUL™ SSL 2802	0.3% basis formula wt	Retards firming and increases stability.
	MASEMUL™ DMG 9502	as required	Helps maintain moisture and softness while aiding extrusion

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PROCESSED FOODS (continued by Application)

CATEGORY	OUR PRODUCT	USAGE LEVELS (recommended)	APPLICATION FUNCTIONALITY
Full fat Margarine & Spreads	MASEMUL™ MDG 5080	0.4-0.6% basis total wt	Facilitates margarine emulsification, increases stability; imparts fine and stable water dispersion
	MASEMUL™ MDG 5080	0.4-0.6% basis total wt	Facilitates margarine emulsification, increases stability
	MASEMUL™ MDG 5202	0.5% basis total wt	Facilitates emulsification, increases stability
	MASEMUL™ DMG 9502	0.5-1.0% basis total wt	Facilitates margarine spread emulsification
	MASEMUL™ DMG 9502	0.1-0.3% basis total wt	Prevents moisture loss, improves emulsion stability
	MASEMUL™ DMG 9502	0.5% basis total wt	Provides anti-spattering properties, facilitates emulsification, reduces staling
Shortening	MASEMUL™ MDG 5080	2.5-10% basis total wt	Emulsifier for high ratio cake shortening; imparts better handling of the batter
	MASEMUL™ MDG 5080	2.5-10% basis total wt	Emulsifier for high ratio cake shortening
Cake & Cream Margarine	MASEMUL™ PGE 4090	1.0-1.2% basis total wt.	Improves whipping properties/cake volume
	MASEMUL™ DMG 9595	0.5-1.0% basis total wt	Prevents syneresis in whipped cream, margarinje
Low fat spreads/ Bakery compounds	MASEMUL™ PGE 4090	0.2-0.3% basis total wt	Stabilises low-fat spread emulsions
	MASEMUL™ DMG 9595	0.5-1.0% basis total wt	Stabilises low-fat spread emulsions
High-ratio Cake Shortening/ Cake margarine	MASEMUL™ PGMS 9502	3.0-5.0% basis total wt (shortening) 0.5-1.0% basis total wt (margarine)	Promotes large cake volume Provides good whipping properties

MISCELLANEOUS Application

CATEGORY	OUR PRODUCT	USAGE LEVELS (recommended)	APPLICATION FUNCTIONALITY
Instant Active Dry Yeast	MASEMUL™ SMS 5502	0.8-1.0% basis yeast wt	Facilitates drying and rehydration of instant active dry yeast; increased gassing powder of instant active dry yeast