Dairy Ingredients Functionality Guide

ADPI

AMERICAN
Dairy Products
INSTITUTE®

Functional Properties of Dried Dairy Ingredients

	WHEY PROTEINS						MILK PROTEINS						CASEINS			CARBOHYDRATES			FATS	
	Whey	RM Whey	WPC34	WPC80	WPI	WPPC	DWM/ WMP	NFDM/ SMP	DBM	MPC70	MPC80	MPI	MCC	Ca-seins[2]	Casein-ates	Perm.	Lactose	GOS[3]	AMF/ BOil	CP
HYDRATION RATE	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦	♦♦	♦♦	♦♦	♦	♦♦	♦♦	♦♦	♦♦		♦♦
EMULSIFICATION	♦	♦	♦♦	♦♦	♦♦	♦♦♦	♦♦	♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦	♦			♦
GELATION[1]	♦♦	♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦														♦♦
WATER BINDING	♦	♦	♦	♦♦	♦♦	♦♦	♦♦	♦♦	♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦	♦	♦		♦♦
VISCOSITY	♦	♦	♦	♦	♦	♦♦	♦	♦	♦	♦♦	♦♦	♦♦	♦♦	♦♦	♦♦♦	♦	♦	♦		♦♦
WHIPPING	♦♦	♦♦	♦♦	♦♦	♦♦♦	♦	♦	♦	♦	♦	♦	♦	♦		♦♦	♦	♦			♦
BROWNING	♦♦♦	♦♦♦	♦♦	♦	♦	♦	♦♦	♦♦	♦♦	♦	♦	♦	♦	♦	♦	♦♦♦	♦♦♦	♦		♦♦
HEAT STABILITY	♦	♦♦	♦	♦	♦	♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦	♦♦	♦♦	♦	♦♦♦
ACID STABILITY	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦

Legend

♦♦♦ HIGH
♦♦ MEDIUM
♦ LOW

AMF/BOil .....Anhydrous Milk Fat/Butteroil
Caseins.....Acid & Rennet[2] Caseins
CP .....Cream Powder
DWM/WMP .....Dry Whole Milk/Whole Milk Powder
DBM .....Dry Buttermilk
GOS .....Galaco-oligosaccharides
MCC .....Michellar Casein
MPC .....Milk Protein Concentrate
MPI.....Milk Protein Isolate
NFDM/SMP .....Nonfat Dry Milk/Skim Milk Powder
Perm.....Milk & Whey Permeate
RM Whey.....Reduced Minerals Whey
WPC .....Whey Protein Concentrate
WPI.....Whey Protein Isolate
WPPC .....Whey Protein Phospholipid Concentrate

(1) Heat induced gelation, milk proteins and caseins form acid gels ie. yogurt and cheese

(2) Acid and Rennet casein are not soluble in water and need emulsifying salts to improve their ability to bind water and emulsify

(3) Powder or Syrup

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