



Vitamins

Vitamins and Fine Chemicals for Use in the Food Industry

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Product	Compendia	Standard sales packs	Optimum delivery size		Main applications
			Cartons	Pallets	

Vitamin A

Oily forms

Vitamin A Acetate 1.5 m. IU/g 450 mg retinol per gram, stabilized with tocopherol	USP, FCC, Ph. Eur.	5 kg aluminium bottle	10 kg	300 kg	For fortification of fat-based foods, especially margarine and dairy products
Vitamin A Palmitate 1.7 m. IU/g 510 mg retinol per gram, stabilized with BHA/BHT	USP, FCC, Ph. Eur.	5 kg aluminium bottle 20 kg aluminium bottle	10 kg	300 kg 360 kg	For fortification of fat-based foods, especially margarine and dairy products
Vitamin A Palmitate 1.7 m. IU/g 510 mg retinol per gram, stabilized with tocopherol	USP, FCC, Ph. Eur.	5 kg aluminium bottle	10 kg	300 kg	For fortification of fat-based foods, especially margarine and dairy products
Vitamin A Palmitate 1.0 m. IU/g 300 mg retinol per gram, stabilized with BHA/BHT	USP, FCC, Ph. Eur.	5 kg aluminium bottle 20 kg aluminium bottle	10 kg	300 kg 360 kg	For fortification of fat-based foods, especially margarine and dairy products
Vitamin A Palmitate 1.0 m. IU/g 300 mg retinol per gram, stabilized with tocopherol	USP, FCC, Ph. Eur.	5 kg aluminium bottle	10 kg	300 kg	For fortification of fat-based foods, especially margarine and dairy products
Vitamin A Palmitate 1.0 IU/g and Vitamin D₃ 100 000 IU/g Stabilized with tocopherol	USP	5 kg aluminium bottle	10 kg	300 kg	For fortification of fat-based foods, especially margarine and dairy products

Product	Compendia	Standard sales packs	Optimum delivery size		Main applications
			Cartons	Pallets	
Dry forms					
Dry Vitamin A Acetate 500 500 000 IU/g (150 mg retinol per gram), stabilized with BHT	USP, FCC, Ph. Eur.	5 kg bag 25 kg carton	20 kg	400 kg 500 kg	For fortification of dry food products, i.e. flour and dry milk and beverage powders, and fortification of water- based foods
Dry Vitamin A Acetate + D₃ 500/50 500 000 IU vitamin A and 50 000 IU vitamin D ₃ per gram, stabilized with BHA/BHT		5 kg bag	20 kg	400 kg	For fortification of dry food products, i.e. flour and dry milk and beverage powders, and fortification of water- based foods
Dry Vitamin A Acetate, Type 325 CWS/F 325 000 IU/g (97.5 mg retinol per gram), fish-gelatin coated, stabilized with tocopherol, cold-water soluble	USP, FCC, Ph. Eur.	5 kg bag 25 kg carton	20 kg	400 kg 500 kg	Especially for dry products to be reconstituted with cold water before use
Dry Vitamin A Acetate, Type 250 CWS/A 250 000 IU/g (75 mg retinol per gram), gum-acacia coated, stabilized with tocopherol, cold-water soluble (limited availability)	USP, FCC, Ph. Eur.	25 kg carton	-	500 kg	Especially for dry products to be reconstituted with cold water before use
Dry Vitamin A Palmitate 500 500 000 IU/g (150 mg retinol per gram), stabilized with BHT	USP, FCC, Ph. Eur.	5 kg bag	20 kg	400 kg	For fortification of dry food products, i.e. flour and dry milk and beverage powders, and fortification of water- based foods
Dry Vitamin A Palmitate and Vitamin D₃, Type 500/50 500 000 IU vitamin A and 50 000 IU vitamin D ₃ per gram, stabilized with BHA/BHT		5 kg bag	20 kg	400 kg	For fortification of dry food products, i.e. flour and dry milk and beverage powders, and fortification of water- based foods

Product	Compendia	Standard sales packs	Optimum delivery size		Main applications
			Cartons	Pallets	
Dry Vitamin A Palmitate, Type 250 CWS 250 000 IU/g (75 mg retinol per gram), gelatin-coated, stabilized with BHA/BHT, cold-water soluble	USP, FCC, Ph. Eur.	5 kg bag 25 kg carton	20 kg	400 kg 500 kg	Especially for dry products to be reconstituted with cold water before use
Dry Vitamin A Palmitate, Type 250 CWS/F 250 000 IU/g (75 mg retinol per gram), fish-gelatin coated, stabilized with tocopherol, cold-water soluble	USP, FCC, Ph. Eur.	5 kg bag 25 kg carton	20 kg	400 kg 500 kg	Especially for dry products to be reconstituted with cold water before use

The activity of 1000 IU vitamin A corresponds to the activity of 0.3 mg retinol

Product	Compendia	Standard sales packs	Optimum delivery size		Main applications
			Cartons	Pallets	

Vitamin D

Vitamin D₃ Crystalline 40 m. IU/g (1000 mg cholecalciferol per gram)	USP, FCC,	25 g easy-open tin	1.5 kg		For fortification of edible oils, fats, margarine and dairy products
	Ph. Eur.	250 g easy-open tin	1.5 kg		
Vitamin D₃ 1.0 m. IU/g 1 000 000 IU/g (25 mg cholecalciferol per gram), stabilized with tocopherol	Ph. Eur.	1 kg aluminium bottle	10 kg	200 kg	For fortification of edible oils, fats, margarine and dairy products
		5 kg aluminium bottle	10 kg	300 kg	
Dry Vitamin D₃, Type 100 CWS 100 000 IU/g (2.5 mg cholecalciferol per gram), gelatin-coated, stabilized with tocopherol, cold-water soluble	Ph. Eur.	5 kg bag	20 kg	400 kg	For fortification of dry products including dry products to be reconstituted with cold water before use
		25 kg carton		500 kg	
Dry Vitamin D₃, Type 100 CWS/A 100 000 IU/g (2.5 mg cholecalciferol per gram), gum-acacia coated, stabilized with tocopherol, cold-water soluble (limited availability)	Ph. Eur.	25 kg carton		500 kg	For fortification of dry products including dry products to be reconstituted with cold water before use

The activity of 1000 IU vitamin D corresponds to the activity of 0.025 mg cholecalciferol

Product	Compendia	Standard sales packs	Optimum delivery size		Main applications
			Cartons	Pallets	

Vitamin E

dl-α-Tocopherol	USP, FCC, Ph. Eur.	5 kg aluminium bottle 20 kg aluminium bottle	10 kg	300 kg 360 kg	As an antioxidant for stabilizing oils and fats, fat-containing products and essential oils
dl-α-Tocopheryl Acetate	USP, FCC, Ph. Eur.	5 kg aluminium bottle 20 kg aluminium bottle 190 kg metal drum	10 kg	300 kg 360 kg 380 kg	For enrichment of margarine, oils, dietetic products and baby foods
Dry Vitamin E 50%, Type CWS/F 500 IU/g in form of <i>dl</i> - α -tocopheryl acetate. Spray-dried, fish-gelatin coated, cold-water soluble	USP, Ph. Eur.	20 kg carton		400 kg	For enrichment of dry products, such as dietetic and baby foods and dry products to be reconstituted with cold water before use
Mixed Tocopherols E 306 Oily concentrate of mixed <i>d</i> -tocopherols (<i>d</i> - α -, <i>d</i> - β -, <i>d</i> - γ - and <i>d</i> - δ - tocopherol)	FCC	20 kg metal pail 190 kg metal drum		480 kg 760 kg	As an antioxidant for edible fats and oils

The activity of 1 IU vitamin E corresponds to the activity of 1 mg *dl*- α -tocopheryl acetate

Product	Compendia	Standard sales packs	Optimum delivery size		Main applications
			Cartons	Pallets	

Vitamin K₁

Vitamin K ₁	USP, Ph. Eur.	100 g aluminium bottle	4.8 kg		For fortification of dietetic products and baby food
		1 kg aluminium bottle	10 kg		
Dry Vitamin K ₁ 5% SD 50 mg vitamin K ₁ per gram, gum-acacia coated		1 kg bag	10 kg	200 kg	For fortification of infant formulas (dry products) to be reconstituted with water or milk before use
		20 kg carton		400 kg	

Vitamin B₁

Thiamine Hydrochloride	USP, FCC, Ph. Eur.	20 kg carton		400 kg	For enrichment of flour, rice, noodles, beverage powders, breakfast cereals, and for imitation of meat flavour
Thiamine Mononitrate	USP, FCC, Ph. Eur.	20 kg carton		400 kg	For enrichment of flour, rice, noodles, beverage powders, breakfast cereals, and for imitation of meat flavour

Product	Compendia	Standard sales packs	Optimum delivery size		Main applications
			Cartons	Pallets	

Vitamin B₂

Riboflavin	USP, FCC, Ph. Eur.	10 kg carton		200 kg	For enrichment of cereals, pasta products and dietetics, and for coloration of light-protected products
Riboflavin 5'-Phosphate Sodium	USP, FCC, Ph. Eur.	1 kg bag 5 kg bag 25 kg metal drum	10 kg 20 kg	200 kg 300 kg	For enrichment of instant dry food preparations and coloration of light-protected products

Vitamin B₆

Pyridoxine Hydrochloride (Pyridoxol hydrochloride)	USP, FCC, Ph. Eur.	20 kg carton		600 kg	For enrichment of cereals, flour, rice, candies and dry food preparations
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Product	Compendia	Standard sales packs	Optimum delivery size		Main applications
			Cartons	Pallets	

Vitamin B₁₂

Cyanocobalamin

Vitamin B₁₂ Crystalline	USP, FCC, Ph. Eur.	10 g easy-open tin	600 g		For enrichment of dietetics, cereals, fruit juices, confectionery, milk products and baby food
		100 g easy-open tin	3 kg		
		1 kg aluminium bottle	3 kg		
Vitamin B₁₂ 0.1% WS Spray dried		5 kg bag	20 kg	300 kg	For enrichment of dietetics, cereals, fruit juices, confectionery, milk products and baby food

Niacin

Vitamin PP

Nicotinic Acid	USP, FCC, Ph. Eur.	20 kg carton		400 kg	For enrichment of cereals, flour, rice, dietetics and dry food preparations
Nicotinamide To be phased out during 2001	USP, FCC, Ph. Eur.	20 kg carton		400 kg	For enrichment of cereals, flour, rice, dietetics and dry food preparations, and for meat and fish curing preparations
Niacinamide New product with improved flowability	USP, FCC, Ph. Eur.	20 kg carton		400 kg	For enrichment of cereals, flour, rice, dietetics and dry food preparations, and for meat and fish curing preparations

Product	Compendia	Standard sales packs	Optimum delivery size		Main applications
			Cartons	Pallets	

Pantothenates

Calcium D-Pantothenate	USP, FCC, Ph. Eur.	25 kg carton		500 kg	For enrichment of cereals, breakfast drinks and baby foods
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Biotin

Vitamin H

D-Biotin	USP, FCC, Ph. Eur.	50 g tin 1 kg tin		1.5 kg 4 kg	48 kg	For enrichment of baby foods and dietetics, and for the fermentation industry
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Folic acid

Folic Acid	USP, FCC, Ph. Eur.	1 kg bag 25 kg metal drum		10 kg	200 kg	For enrichment of baby food, dietetics, cereals and beverages
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Product	Compendia	Standard sales packs	Optimum delivery size		Main applications
			Cartons	Pallets	

Vitamin C

L-Ascorbic acid

Ascorbic Acid Ascorbic Acid, Fine Granular Ascorbic Acid, Fine Powder	USP, FCC, Ph. Eur.	25 kg carton		750 kg	For enrichment of dry products, such as instant powdered beverages and dietetic products, and liquid products, such as fruit juices and soft drinks. Also for meat curing, improvement of flour and dough, and stabilization of fruit juices, soft drinks, beer, wine, processed fruits and vegetables
Coated Ascorbic Acid, Type EC Ethocel coated		25 kg carton		750 kg	For enrichment of dry products, such as instant powdered beverages, dietetic products and processed potatoes
Coated Ascorbic Acid, Type FC Fat coated		25 kg carton		750 kg	For enrichment of dry products, such as instant powdered beverages, dietetic products and processed potatoes
Sodium Ascorbate, Crystalline	USP, FCC	25 kg carton		750 kg	For meat curing, improvement of flour and dough, stabilization of processed potatoes, and enrichment of dry and liquid products
Calcium Ascorbate	USP, FCC, Ph. Eur.	25 kg carton		500 kg	For enrichment of dry food products, particularly low sodium diets

Product	Compendia	Standard sales packs	Optimum delivery size		Main applications
			Cartons	Pallets	
Ascorbyl Palmitate	USP, FCC, Ph. Eur.	5 kg bag 25 kg metal drum	10 kg	200 kg 100 kg	For stabilization of oils and fats, fat-containing products and processed potatoes, and as an antioxidant

β-Carotene

As nutrient, colour or physiological antioxidant

β-Carotene 30% FS Fluid suspension	FAO/WHO*	1 kg plastic pail	6 kg	300 kg	Colour range: yellow to orange. For coloration of fat-based foods: margarine, edible oils, salad creams and sauces. Also for coloration of beverages, juices, soft drinks and snacks
		5 kg plastic pail	20 kg	320 kg	
β-Carotene 10% CWS Cold-water soluble	FAO/WHO*	1 kg bag	10 kg	400 kg	Colour range: yellow-orange to orange. For coloration of beverages, soups, sauces, cereals and confectionery
		5 kg bag	20 kg	400 kg	
		25 kg carton		500 kg	
β-Carotene 10% B	FAO/WHO*	1 kg bag	10 kg	400 kg	As nutrient for dry food preparations
		5 kg bag	20 kg	400 kg	
		25 kg carton		500 kg	
β-Carotene 7% CWS Cold-water soluble	FAO/WHO*	10 kg carton with aluminium liner		200 kg	Colour: yellow with reduced cloudiness. For coloration of beverages, confectionery and milk products

Product	Compendia	Standard sales packs	Optimum delivery size		Main applications
			Cartons	Pallets	
β-Carotene 1% CWS Cold-water soluble	FAO/WHO*	5 kg bag 25 kg carton	20 kg	300 kg 500 kg	Colour: yellow. For coloration of water-based foods, instant products, beverages, puddings, confectionery and milk products
β-Carotene 5% EM Emulsion	FAO/WHO*	5 kg plastic pail	20 kg	320 kg	Colour range: yellow to orange. For coloration of water-based foods, beverages, milk products and confectionery

*Specifications established for active substance β-carotene

Product	Compendia	Standard sales packs	Optimum delivery size		Main applications
			Cartons	Pallets	

Apocarotenal

Apocarotenal 20% S Suspension	FAO/WHO*	1 kg plastic pail	6 kg	300 kg	Colour range: orange to orange-red. For coloration of fat-based foods such as salad creams, sauces, edible oils and margarine. Also for coloration of beverages, juices, soft drinks and snacks
		5 kg plastic pail	20 kg	320 kg	
Apocarotenal 10% WS/N Apocarotenal in starch-coated matrix of fish gelatin, sucrose and maize (corn) oil, water soluble	FAO/WHO*	1 kg bag	10 kg	400 kg	Colour range: orange to orange-red. For coloration of beverages, soups, sauces and confectionery
Apocarotenal 1% CWS Cold-water soluble	FAO/WHO*	5 kg bag	20 kg	300 kg	Colour range: orange to orange-red. For coloration of water-based foods, instant products, beverages, puddings, confectionery and milk products
		25 kg carton		500 kg	

*Specifications established for active substance apocarotenal

Product	Compendia	Standard sales packs	Optimum delivery size		Main applications
			Cartons	Pallets	

Apocarotenoic ester

Apocarotenoic Ester 20% S Suspension	FAO/WHO*	1 kg plastic pail	6 kg	300 kg	Colour range: yellow to yellow-orange. For coloration of fat and fat-based foods, and as a marking agent for butter and cream
		5 kg plastic pail	20 kg	320 kg	

*Specifications established for active substance apocarotenoic acid ethyl ester

Canthaxanthin

Canthaxanthin 10% CWS/N Canthaxanthin in starch-coated matrix of fish gelatin, sucrose and maize (corn) oil, cold-water soluble	FAO/WHO*	1 kg bag	10 kg	400 kg	Colour range: orange-red to red. For coloration of tomato soups, sauces, confectionery and meat products
		5 kg bag	20 kg	400 kg	
		25 kg carton		500 kg	
Canthaxanthin 10% RVI	FAO/WHO*	5 kg bag	20 kg	300 kg	Colour range: orange-red to red. For coloration of meat products and meat substitution products
Canthaxanthin 1% CWS/N Cold-water soluble	FAO/WHO*	25 kg carton		500 kg	Colour range: orange-red to red. For coloration of instant products, instant beverages and instant puddings

*Specifications established for active substance canthaxanthin

Product	Compendia	Standard sales packs	Optimum delivery size		Main applications
			Cartons	Pallets	

Polyunsaturated fatty acids

n-3 (refined marine oils)

ROPUFA® '30' n-3 EPA Oil Min. 30% total n-3 polyunsaturated fatty acids, min. 15% EPA	5 kg metallized polyethylene bag in box	20 kg	560 kg	For food, dietary products and nutritional supplements
	25 kg metal drum		800 kg	
ROPUFA® '30'n-3 INF Oil Min. 30% total n-3 polyunsaturated fatty acids, min. 23% DHA, ratio DHA to EPA min. 4.5	5 kg metallized polyethylene bag in box	20 kg	560 kg	Specifically for baby food enrichment
	25 kg metal drum		800 kg	
ROPUFA® '30' n-3 Food Oil Min. 30% total n-3 polyunsaturated fatty acids, min. 25% long-chain n-3 PUFAs (DHA, EPA, DPA), min. 12.5% DHA	25 kg metal drum		600 kg	For food, dietary products and nutritional supplements
ROPUFA® '10' n-3 EPA Powder Min. 9% total n-3 polyunsaturated fatty acids	5 kg aluminium bag		150 kg	For food, dietary products and nutritional supplements
	20 kg carton		400 kg	
ROPUFA® '10' n-3 INF Powder Min. 7% DHA	5 kg aluminium bag		150 kg	Specifically for baby food enrichment
	20 kg carton		400 kg	

Product	Compendia	Standard sales packs	Optimum delivery size		Main applications
			Cartons	Pallets	
n-6					
ROPUFA® '25' n-6 Oil Borage oil. Min. 23% γ -linolenic acid		5 kg metallized polyethylene bag in box	20 kg	560 kg	For dietary and cosmetic products and for nutritional supplements
		25 kg polyethylene drum		600 kg	
ROPUFA® '10' n-6 Oil Evening Primrose oil. Min. 9% γ -linolenic acid		5 kg metallized polyethylene bag in box	20 kg	560 kg	For dietary and cosmetic products
		25 kg polyethylene drum		600 kg	
ROPUFA® '10' n-6 PR Oil Evening Primrose oil. Min. 9% γ -linolenic acid		25 kg polyethylene drum		600 kg	For nutritional supplements
		185 kg polyethylene drum		555 kg	
ROPUFA® '10' n-6 Powder Borage oil. Min. 9% γ -linolenic acid		5 kg aluminium bag in box	20 kg	300 kg	For dietary products and nutritional supplements
		20 kg carton		400 kg	

Product	Compendia	Standard sales packs	Optimum delivery size		Main applications
			Cartons	Pallets	

Citric acid

Citric Acid Anhydrous, Medium Granular 1200	USP, FCC, Ph. Eur.	25 kg bag	1000 kg	1000 kg	Acidulant (flavour component) for soft drinks, candies, jam and marmalade, and for stabilization of wine
Citric Acid Anhydrous, Fine Granular 700		1000 kg big bag	1000 kg		
Citric Acid Anhydrous 51 N, Fine Granular	USP, FCC, Ph. Eur.	25 kg bag	1000 kg	1000 kg	Acidulant (flavour component) for soft drinks, candies, jam and marmalade. Particularly suited for acidulation of dry soft-drink mixes. Also for stabilization of wine
		1000 kg big bag	1000 kg		
Citric Acid Anhydrous, Powder	USP, FCC, Ph. Eur.	25 kg bag	1000 kg		Acidulant (flavour component) for soft drinks, candies, jam and marmalade. Particularly suited for acidulation of dry soft-drink mixes. Also for stabilization of wine
Citric Acid Monohydrate Granular	USP, FCC, Ph. Eur.	25 kg bag	1000 kg	1000 kg	Acidulant (flavour component) for soft drinks, candies, jam and marmalade, and for stabilization of wine
Citric Acid Monohydrate, Fine Granular					
Trisodium Citrate Dihydrate, Granular	USP, FCC, Ph. Eur.	25 kg bag	1000 kg	1000 kg	Imparts cool and saline taste to beverages. Acts as a buffer in combination with free acid in beverages and jellies. Improves curing process and properties of sausages. Acts as an emulsifier in processed cheese
Trisodium Citrate Dihydrate, Fine Granular					
Trisodium Citrate Dihydrate, Powder					

Product	Compendia	Standard sales packs	Optimum delivery size		Main applications
			Cartons	Pallets	
Monosodium Citrate Anhydrous, Granular Monosodium Citrate Anhydrous, Powder	FAO/WHO	25 kg bag		1000 kg	Imparts cool and saline taste to beverages. Acts as a buffer in combination with free acid in beverages and jellies

Antioxidants

RONOXAN® A Ascorbyl palmitate, tocopherol, lecithin		1 kg tin	6 kg	240 kg	Oil-soluble antioxidant mixture utilizing the pronounced synergism between tocopherol and ascorbyl palmitate
Ascorbic Acid (see also vitamin C)	USP, FCC, Ph. Eur.	25 kg carton		750 kg	For stabilization of fruit juices, soft drinks, beer, wine, processed fruits and vegetables
Ascorbyl Palmitate (see also vitamin C)	USP, FCC, Ph. Eur.	5 kg bag 25 kg metal drum	10 kg	200 kg 100 kg	For stabilization of oils and fats, fat-containing products and processed potatoes
dl-α-Tocopherol (see also vitamin E)	USP, FCC, Ph. Eur.	5 kg aluminium bottle 20 kg aluminium bottle	10 kg	300 kg 360 kg	For stabilization of oils and fats, fat-containing products and essential oils
Mixed Tocopherols E 306 (see also vitamin E) Oily concentrate of mixed <i>d</i> -tocopherols (<i>d</i> - α -, <i>d</i> - β -, <i>d</i> - γ - and <i>d</i> - δ - tocopherol)	FCC	20 kg metal pail 190 kg metal drum		480 kg 760 kg	As an antioxidant for edible fats and oils

Product	Compendia	Standard sales packs	Optimum delivery size Cartons Pallets	Main applications
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Roche precision premixes

Standardized for specific applications or custom-made

<p>Custom-made premixes (oily and dry formulations) Custom-designed with vitamins, other micronutrients, colours, antioxidants, minerals and carrier as needed.</p>	<p>For fortification or enrichment of food and drinks</p>
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Additional information

- In general, vitamins, carotenoids and fine chemicals are relatively sensitive products, and their storage stability is influenced by many factors. For this reason, indications of the relevant storage conditions are given on the labels of most of the products.
- Compendia:
 - USP** United States Pharmacopoeia (current edition), including National Formulary (current edition) and Supplements
 - FCC** Food Chemicals Codex, 4th edition 1996 and supplements
 - Ph. Eur.** European Pharmacopoeia, 3rd Edition
 - FAO/WHO** Compendium of Food Additive Specifications, Joint FAO/WHO Expert Committee on Food Additives (JECFA) (ed. Food and Agriculture Organization, Rome, 1992)
- Our material complies with the monographs of the above-mentioned compendia. It is the responsibility of the manufacturing company to ensure that the final product is manufactured according to current local regulations and standards.
- Data sheets are available for all products listed in this catalogue. They contain information on specification, composition and stability.
- Some of the listed products are used either as vitamins (nutrients) or as food additives for technological purposes; some of them serve both purposes. As food additives they are permitted in most countries. However, there are special local regulations according to which the use of food additives is restricted. It is therefore advisable to consult the corresponding food regulations.
- For detailed information on local availability and prices, please contact the Roche company in your country.

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