

Application: PharmalD V1_8 M1624 Excipients
Date of Release: April 2, 2009

Purpose:

Identification of common pharmaceutical materials. Most of these materials are white powders. Data and applications are now split into excipients and active ingredients.

Usage:

The PHAZIR™ is applied to a clean surface of a glass vial or bagged material and the trigger is pressed to obtain a reading. Accuracy is not guaranteed with bags thicker than 4 mil (100 µm). Bags less than 4 mil thick may be used, as well as glass vials.

Requirements:

Phazir 1624
Version 2.3 or later
FPGA version 12 or later

Installation:

Place PharmalD-V1_8-M1624 xxx.pbe and PharmalD-V1_8-M1624 xxx.dat in the PHAZIR Applications directory, where xxx refers to either excipients or APIs. Spanish (Sp) versions are also available.

Performance:

Measurement time: Approximately 3 seconds
Time to background: 60 minutes
Time to standby: 60 minutes
Spectra in library: over 2500
Accuracy: >95% in challenge sets

Method:

Preprocessing
SNV (full spectrum)
Savitzky-Golay 1st derivative, 5 point window, 2nd order polynomial (full spectrum)
Range Normalization (1802-2247 nm)
Spectral matching (1802-2247 nm)
KNN = 3

Results:

Product Name	Phazir Name	Spanish	Material Type
Acacia	Acacia	Acacia	Excipient
Acesulfam K	Ace K	Acesulfam K	Excipient
Acemetacin	Acemetacine	Acemetacina	API
Acetylcysteine	Acetylcysteine	Acetilcisteína	Excipient

Acexamic acid	Acexamic acid	Acido Acexamico	Excipient
Acryl-Eze White	Acryl-Eze White	Acryl-Eze White	Excipient
Adipic Acid	Adipic Acid	Ácido adípico	Excipient
Adrenaline hydrochloride	Adrenaline HCl	Adrenalina Clorhidrato (crist.)	API
Aluminum magnesium silicate	Al Mg Silicate	Silicato de aluminio del magnesio	Excipient
Albendazole	Albendazole	Albendazol	API
Ambroxol hydrochloride	Ambroxol	Ambroxol Clorhidrato	API
Amiloride	Amiloride	Amiloride	API
Ammonium Acetate	Ammonium acetate	Acetato de Amonio	Excipient
ammonium glycyrrhinate	ammonium glycyrrhinate	Glicirrinato de amonio	Excipient
acetominaphen	APAP	APAP	API
Arlacel	Arlacel	Arlacel	Excipient
Ascorbic acid	Ascorbic acid (Vitamin C)	Acido Ascorbico	Excipient
Aspartame	Aspartame	Aspartame	API
Aspirin	Aspirin	Aspirina	API
Atropine methyl nitrate	Atropine methyl nitrate	Atropina Metil Nitrato	API
Atropine sulfate	Atropine sulfate	Atropina Sulfato	API
Avicel Ph101	Avicel Ceolus MCC	Avicel pH101	Excipient
Microcrystalline cellulose	Avicel Ceolus MCC	Celulosa Microcristalina PH200	Excipient
Microcrystalline cellulose	Avicel Ceolus MCC	Celulosa Microcrist. PH 101	Excipient
Avicel RC	Avicel RC	Avicel RC	Excipient
Bacitracin Zinc Micro	Bacitracine Zinc	Bacitracina Zinc Micro	API
Barium Sulfate	Barium sulfate	Bario Sulfato	Excipient
Beeswax Substitute	Beeswax Substitute	Substituto de la cera de abejas	Excipient
Benadryl	Benadryl	Benadryl	API
Bentonite U.S.P.	BentoniteU.S.P.	Bentonita U.S.P.	Excipient
Benzidamine HCl	Benzidamine HCl	Benzidamina Clorhidrato	API
Benzoic Acid	Benzoic acid	Acido Benzoico	Excipient
Benzoyl metronidazole	Benzoyl metronidazole	Metronidazol benzoilo	Excipient
Benzoyl peroxide	Benzoyl peroxide	Benzoilo Peroxido	Excipient
Benzydamine hydrochloride	Benzydamine	Benzidamina Clorhidrato	API
Betaine hydrochloride	Betaine HCl	Betaina Clorhidrato	API
Betamethasone valerate	Betamethasone	Betametasona17 Valerato	API
Biotin	Biotin	Biotina	Excipient
Bumetanide	Bumetanide	Bumetanida	API
Butabarbital	Butabarbital	Butabarbital	API
Butyl hydroxyanisole	Butyl hydroxyanisol	Butil Hidroxianisol	Excipient
Butyl hydroxytoluene	Butyl hydroxytoluene	Butil Hidroxitolueno	Excipient
Butyl paraben	Butyl paraben	Parabén butílico	Excipient

Calcium Carbonate	Ca Carbonate	Carbonato de calcio	Excipient
Caffeine	Caffeine	Cafeína	API
Calcium Chloride	Calcium chloride	Cloruro de Calcio	Excipient
Calcium pantothenate	Calcium pantotenate	Calcio Pantotenato	Excipient
Calcium Stearate	Calcium Stearate	Estearato de calcio	Excipient
Calcium phosphate	CaPO4	Fosfato Dibasico de Calcio	Excipient
Carbamazepine	Carbamazepine	Carbamazepina	API
carbetapentane citrate	carbetapentane	Carbetapentano Citrato	Excipient
Carbopol 940	Carbopol 940	Carbopol 940	Excipient
Carboxymethylcysteine	Carboxymethyl cysteine	Carboximetilcisteina	Excipient
Carboxymethyl cellulose	CMC	Carboximetil celulosa 7MF	Excipient
Carboxymethyl cellulose PE30-FGH	CMC	Carboximetil Celulosa PE30-FGH	Excipient
Carisoprodol	Carisoprodol	Carisoprodol	Excipient
Carnuba Wax	Carnuba Wax	Cera de Carnuba	Excipient
Calcium sulfate	CaSO4	Estearato de calcio	Excipient
Cellacafate	Cellacafate	Cellacafate	Excipient
Cellactose 80	Cellactose 80	Cellactosa 80	Excipient
Cellulose acetophthalate	Cellulose acetophthalate	Ftalato del acetato de celulosa	Excipient
Aceto cellulose phthalate	Cetostearyl Alcohol	Acetoftalato de Celulosa	Excipient
Cetyl Alcohol	Cetyl alcohol	Alcohol Cetilico	Excipient
Cetyl pyridinium chloride	Cetyl pyridinium chloride	Cetil Piridinio Cloruro	Excipient
Chlorobutanol	Clorobutanol	Clorobutanol	Excipient
Chondroitin Sulfate APM	Chondroitin sulfateAPM	Condroitin Sulfato APM	API
Cilostazol	Cilostazol	Cilostazol	API
Cinnarizine	Cinnarizine	Cinarizina	API
Ciprofloxacin hydrochloride	Ciprofloxacin	Ciprofloxacina Clorhidrato	API
Citric acid	Citric acid	Acido Citrico	Excipient
Citric acid, anhydrous	Citric acid	Acido Citrico Anhidro	Excipient
Clenbuterol	Clenbuterol HCl	Clenbuterol HCl	API
Clonidine	Clonidine HCl	Clonidina HCl	API
Clonixinate lysine injectable	Clonixinate lys inj	Clonixinate lisina iny	API
Clorobutanol	Clorobutanol	Clorobutanol	Excipient
Microcrystalline cellulose	CMC	Celulosa Microcristalina	Excipient
Coenzyme Q10	CoQ	CoQ	Excipient
Corn starch	Cornstarch	Almidon de Maiz	Excipient
Croscarmellose sodium	Croscarmellose	Croscarmelosa Sodica	Excipient
Crospovidone	Crospovidone	Crospovidone	Excipient
Cyanocobalamin	Cyanocobalamine	Cianocobalamina	Excipient
Cycloserine	Cycloserine	Cicloserina	API
Dexamethasone Base	Dexametasone	Dexametasona Base	API
Dexamethasone Sodium	Dexametasone	Dexametasona Sodio	API

Phosphate		Fosfato	
Dextrose Anhydrous	Dextrose	Dextrosa Anhidra	Excipient
Dextrose hydrate	Dextrose	Dextrosa	Excipient
Diacerein	Diacerein	Diacereina	API
Diclofenac diethylamine	Diclofenac	Diclofenac	API
Diclofenac potassium	Diclofenac	Diclofenac	API
Diclofenac sodium	Diclofenac	Diclofenac	API
Dinithromycin	Dinithromycin	Dinithromycin	API
Diphenylhydantoin	DiphenylhydantoinBase	Difenilhidantohina Base	API
Diphenylhydantoin, Sodium salt	DiphenylhydantoinSodium	Difenilhidantoina Sodica	API
Divalproex sodium	Divalproex sodium	Divalproato de Sodio	API
Dextromethorphan	DM	DM	API
Duodenal Heparinoid	Duodenal Heparinoid	Heparinoide Duodenale	API
Dye Sunset Yellow 85	Dye Sunset Yellow 85	Colorante Amarillo Sunset 85	Excipient
EDTA	EDTA	EDTA Tritiplex	Excipient
Ephedrine Sulphate	Ephedrine sulfate	Efedrina Sulfato	API
Ethyl cellulose	Ethyl cellulose	Celulosa de etilo	Excipient
Famotidine	Famotidine	Famotidina	API
FDC Blue	FDC Blue	Azul de FDC	Excipient
FDC Red	FDC Red	Rojo de FDC	Excipient
Fenazona	Fenazona	Fenazona	API
Fenofibrate micronized	Fenofibrate	Fenofibrate Micronizado	API
Fenpiverinium Bromomethane	Fenpiverinium	Fenpivirinium Bromometilato	API
Fluconazole	Fluconazol	Fluconazol	API
Fluoexetine	Fluoexetine	Fluoexetine	API
Folic acid	Folic acid	Acido Folico	Excipient
Fructose	Fructose	Fructosa	Excipient
Galactose	Galactose	Galactosa	Excipient
Gelatin	Gelatin	Gelatina	Excipient
Gelatin Basic	Gelatin Basic	Gelatina	Excipient
Gelatin USP	Gelatin	Gelatina U.S.P.	Excipient
Gliclazide	Gliclazide	Glicazida	API
glucosamine sulfate	GlucosamineSulfate	Glucosamina Sulfato	Excipient
Glycin	Glycine	Glicina Glicocola	Excipient
Grape Shade	Grape Shade	Cortina de la uva	Excipient
Guar gum	Guar gum	Goma de guar	Excipient
Gum arabica	Gum arabica	Goma Arabiga	Excipient
Gum Karaya	Gum Karaya	Karia de la goma	Excipient
Heparinoid	Heparinoid	Heparinoid	API
HP cellulose	HP cellulose	Hidroxipropilcelulosa LF	Excipient
HP Opadry II	HP Opadry	HP Opadry II	Excipient
Hydroxypropylcellulose phthalate	HPC	Hdroxipropilcelulosa Ftalato	Excipient

Hydroxypropylcellulose LF	HPC	Hidroxipropilcelulosa LF	Excipient
Hydroxypropyl methyl cellulose	HPM cellulose	Celulosa de Hdroxylpropyl Metilo	Excipient
Hydrocortisone Succinate	Hydrocortisone	Hidrocotisona Succinato	API
Hydroxychloroquine	hydroxychloroquine	Hidroxicloroquina	API
Hydroxyquinoline	Hydroxyquinoline Sulfate	Hidroxiquinoleina Sulfato	API
Idebenone	Idebenone	Idebenona	API
Indian chestnut extract	Indian chestnut extract	Extracto de castanas de India	Excipient
Iodo-chloro-hydroxyquinoline	Iodochlorohydroxyquinoline	Iodochlorohidroxiquinolina	API
Potassium sulfate	K2SO4	Sulfato del potasio	Excipient
Kanamycin Sulfate	Kanamycin Sulfate	Kanamicina Sulfato	API
Kaolin	Kaolin	Caolin Coloidal	Excipient
Ketoconazole	Ketoconazol	Ketoconazol	API
Ketoprofen	Ketoprofen	Ketoprofeno	API
Klucel	Klucel	Klucel	Excipient
Kollidon	Kollidon CLM	Kollidon CLM	Excipient
Kollidon	Kollidon SR	Kollidon SR	Excipient
Lactose	Lactose	Lactosa	Excipient
Lactose DT	Lactose	Lactosa DT	Excipient
Lactose hydrate	Lactose hydrate	Lactosa Monohidrato	Excipient
Lactose Crystal Tab	Lactose	Lactosa Tab Cristal	Excipient
Lanogen	Lanogen 1500	Lanogen 1500	Excipient
Lanolin	Lanolin	Lanolina Blanca Anhidra	Excipient
Levomepromazine maleate	Levomepromazine	Levomepromazina Maleato	API
Lidocaine	Lidocaine	Lidocaina	API
Lidocaine chlorhydrate	Lidocaine	Lidocaina Clorhidrato	API
Lincomycin hydrochloride	Lincomycin HCl	Lincomicina Clorhidrato	API
Losartan	Losartan Potassium	Losartan Potasico	API
Magaldrate	Magaldrate	Magaldrate	API
Magnesium Valproic acid	Magnesium Valproate	Valproato de Magnesio	API
Maltodextrin	Maltodextrin	Maltodextrina	Excipient
Maltose	Maltose	Maltosa	Excipient
Mannitol	Mannitol	Manitol	Excipient
Med342	Med342	Med342	Excipient
Menthol, crystal	Menthol	Mentol Cristal	Excipient
Merck Inst Sorb	Merck Inst Sorb	Sorb Inst Merck	Excipient
Metamizole Sodium	Metamizol Sodium	Metamizol Sodico	API
Methocel E15	Methocel	Methocel E15	Excipient
Methocel K100 LV	Methocel	Methocel K100 LV	Excipient
Methocel K100 MPR	Methocel	Methocel K100 MPR	Excipient
Methocellulose (Opadry)	Methocellulose (Opadry)	Celulosa metilica	Excipient

Methylparaben	Methyl paraben	Metilparabeno	Excipient
Metoclopramide	Metoclopramide (Reglan)	Metoclopramida	API
Magnesium carbonate	Mg Carbonate	Carbonato de Mg Liviano	Excipient
Magnesium stearate	Mg stearate	Estearato de magnesio	Excipient
Mineral Water Sugar	Mineral Water Sugar	Azúcar del agua mineral	Excipient
monostearate Sorbitan 60	monostearate Sorbitan 60	Monoestearato Sorbitan 60	Excipient
Sodium benzoate	Na benzoate	Benzoato de sodio	Excipient
Sodium citrate	Na citrate	Citrato de Sodio	Excipient
Sodium lauryl sulfate	Na lauryl SO4	Sulfato láureo del sodio	Excipient
Sodium methylparaben	Na MeParaben	Sodio methylparaben	Excipient
Sodium starch glycollate (Primojel)	Na starch glycollate (Primojel)	Glicol del almidón del sodio	Excipient
Naproxen	Naproxen	Naproxen	API
Nebivolol	Nebivolol	Nebivolol	API
Neostigmine Methyl Sulphate	Neostigmine	Neostigmina Metil Sulfato	API
Nicotinamide	Nicotinamide	Nicotinamida Polvo	API
Nitrofurantoin	Nitrofurantoin	Nitrofurantoin	API
Opadry Y1 18128A	Opadry	Opadry Y1 18128A	Excipient
Opagloss	Opagloss	Opagloss	Excipient
Opaspray	Opaspray	Opaspray	Excipient
Oxcarbazepine	Oxcarbazepine	Oxcarbazepina	API
Polyethylene	PE	Polietileno	Excipient
Polyethylene glycol 4000	PE 4000	Polietilenglicol 4000	Excipient
Polyethylene glycol 6000	PE 6000	Polietilenglicol 6000	Excipient
Pectin	Pectin	Pectina Citrica	Excipient
Penicillamine	Penicillamine	Penicilamina	Excipient
Pentose	Pentose	Pentosan	Excipient
Pentoxifylline	Pentoxifylline	Pentoxifilina	API
poly(ethylene oxide)	PEO	Oxido del polietileno	Excipient
Phenazone	Phenazone	Fenazona	API
Phenylephrine	Phenylephrine	Fenilefrina	API
Piribedil	Piribedil	Piribedil	API
Piritioxine HCl	Piritioxine HCl	Piritioxina Clorhidrato	API
Pitofenone hydrochloride	Pitofenone	Pitofenona HCL	API
Plastibase	Plastibase	Plastibase	Excipient
Polyoxyl 40 stearate	Polioxil 40 stearate	Polioxil 40 Estearato	Excipient
Polymyxin B sulfate	Polymyxin B Sulfate	Polimixina B Sulfato	API
Polysorbate 60	Polysorbate 60	Polisorbato 60	Excipient
Potassium chloride	Potassium chloride	Cloruro de Potasio	Excipient
Potassium Carbonate	Potassium Carbonate	Carbonato de potasio	Excipient
Potassium sorbate	Potassium Sorbate	Sorbato de Potasio	Excipient
Povidone	Povidone	Povidona	Excipient
Polypropylene	PP	Polipropileno	Excipient

Propylparaben	Propylparaben	Propilparabeno	Excipient
ProSweet	ProSweet	ProSweet	Excipient
Pseudoephedrine	Pseudoephedrine	Pseudoefedrina	API
Pseudoephedrine HCl	Pseudoephedrine	Pseudoefedrina	API
Polyvinylpyrrolidone	PVP	PVP	Excipient
PVP K30	PVP	PVP	Excipient
PVP K90	PVP	PVP	Excipient
Pyridoxine (Vitamin B6)	Pyridoxine (Vitamin B6)	Piridoxina (Vitamina B6)	Excipient
Pyridoxine hydrochloride	PyridoxineHCl	Piridoxina Clorhidrato	Excipient
Pyrithioxine HCl	Pyrithioxine HCl	Piritioxina Clorhidrato	API
Quinoline yellow	Quinoline yellow	Colorante Amarillo Quinolina	Excipient
Red 4R	Red Shade	rojo punzo 4R	Excipient
Retinoic acid	Retinoic acid	Acido Retinoico	Excipient
Riboflavin	Riboflavin Base	Riboflavina Base	Excipient
Riboflavin phosphate	Riboflavin phosphate	Riboflavina Fosfato	Excipient
Rice starch	Rice starch	Almidon de Arroz	Excipient
Saccharin sodium	Saccharine Sodium	Sacarina Sodica	Excipient
Salicylamide	Salicylamide	Salicilamida	Excipient
Selegiline	Selegiline	Selegilina	API
Sertraline HCl	Sertraline	Sertralina HCL	API
Shellac	Shellac	Laca	Excipient
Silimarine 80	Silimarine 80	Silimarina 80	Excipient
Silver sulfadiazine	Silver sulfadiazine	Sulfadiazina de Plata	API
Sodium acetate	Sodium acetate	Acetato de Sodio	Excipient
Sodium benzoate	Sodium benzoate	Benzoato de Sodio	Excipient
Sodium bicarbonate	Sodium bicarbonate U.S.P.	Bicarbonato de sodio U.S.P.	Excipient
Sodium bisulfate	Sodium bisulfite 66%	Bisulfito de Sodio 66%	Excipient
Sodium Butabarbital	Sodium Butabarbital	Butabarbital Sodico	API
Sodium citrate	Sodium citrate	Citrato de Sodio	Excipient
Sodium Hex	Sodium Hex	Hex de sodio	Excipient
Sodium Salicylate	Sodium Salicylate	Sodio Salicilato	Excipient
Sorb Inst Merck	Sorb Inst Merck	Sorb Inst Merck	Excipient
Sorbic acid	Sorbic acid	Acido Sorbico	Excipient
Sorbitol	Sorbitol	Sorbitol	Excipient
Sorbitan monostearate 60	Sorbitan monostearate 60	Monoestearato Sorbitan 60	Excipient
Starch	Starch	Almidon	Excipient
Starch (Perfectamyl)	Starch	Almidon	Excipient
Starch 1500	Starch	Almidon	Excipient
Stearic acid	Stearic acid	Acido Estearico	Excipient
Stearyl alcohol	Stearyl alcohol	Alcohol Estearilico	Excipient
Sucralose	Sucralose	Sucralosa	Excipient
Sugar	Sucrose	Azucar	Excipient

Sugar	Sugar	Azucar Blanca Refinada	Excipient
Sulpiride	Sulpiride	Sulpirida	API
Talc	Talc	Talco	Excipient
Tenoxicam	Tenoxicam	Tenoxicam	API
Theophylline Anhydrous	Theophylline Anhydrous	Teofilina Anhidra	API
Thiamine HCl	Thiamine HCL	Tiamina HCL	Excipient
Thiamine nitrate	Thiamine nitrate	Tiamina Mononitrato	Excipient
Thiomersal	Timerosal	Timerosal	API
Titanium dioxide	TiO2	Dixido de Titanio	Excipient
Tolnaftate	Tolnaftate	Tolnaftato	API
Tragacanth	Tragacanth	Goma del tragacanto	Excipient
Trazodone	Trazodone	Trazodone	API
Trifluoperazine HCl	Trifluoperazine HCL	Trifluoperazina HCL	API
Trimebutine maleate	Trimebutine	Trimebutina Maleato	API
Trimethoprim	Trimethoprim	Trimetoprima	API
Vaseline	Vaseline	Vaselina Blanca	Excipient
Veegum	Veegum HV	Veegum HV	Excipient
Vitamin A acetate	Vitamin A	Vit A Acetato 500.000 UI/GR	Excipient
Vitamin A acetate + Vitamin D3	Vitamin A acetate + Vitamin D3	Vit. A Acetato + D3 500/50	Excipient
vitamin A acid; reduced acid	vitamin A acid; RA	Vitamina A acido	Excipient
Vitamin B1	Vitamin B1	Vitamina B1	Excipient
Vitamin D3	Vitamin D3	Vit. D3 500 UI	Excipient
Vitamin E	Vitamin E	Vitamina E	Excipient
Warfarin Sodium	Warfarin	Warfarina Sodica	API
Xalifin-15	Xalifin 15	Xalifin 15	Excipient
Xanthan gum	Xanthan	Goma Xantano	Excipient
Xanthan	Xanthan	Goma Xantano	Excipient
Xylitol	Xylitol	Xilitol	Excipient
Yellow dye Tartrazine	Yellow dye Tartrazine	Colorante Amarillo Tartrazina	Excipient
Zeodent	Zeodent	Zeodent	Excipient
Zonisamide	Zonisamide	Zonisamide	API

Notes:

1. This library is intended to be extended or replaced by each customer.
2. Materials may change reported identity because of moisture content.
3. These materials were analyzed "as received."
4. Material names are intended to be brief, generic and unique. For example "Mineral Water Sugar" is a form of sucrose hydrate closely related to food-

service sucrose. It is spectroscopically distinct from milled sucrose hydrate.

Changes since V1.7:

- The spectral library has been split into excipients and actives only libraries. These are designated as _excipients or _APIs in the applications, data sets and project files.
- There are 186 excipients and 92 actives in the libraries.
- The above are also available in Spanish.
- A background is not required when switching between excipient and API libraries.

Changes since V1.5:

- File format is now compatible with Collect Rx.
- Support files are now available.
- A significant number of materials have been added to the library.
- More lots of existing materials.
- More robust classification.
- Limited validation with out-of-library materials
- A PharmaID application is available where product names are in Spanish (PharmaID V1-8 M1624 Sp).

Changes since V1:

- Preprocessing parameters are now disclosed.
- The number of materials identified has increased to 126.
- Polypropylene and polyethylene are identified. However, identification is not guaranteed if polypropylene and polyethylene powders or beads are bagged in polypropylene or polyethylene.
- Moisture from long-term storage may cause starches to cross-identify. The spectra in this library represent materials direct from the manufacturer.