



Good Quality Comes
From Qualified Materials



Much Safer SpecKare® PO -PIROCTONE OLAMINE



The Versatile Choice-The Best Alternative to ZPT

- Anti-Microbial
- Anti-Dandruff
- Anti-Odor
- Anti-Acne

Spec Chem
April 22, 2021



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Introduction of Piroctone Olamine

Piroctone Olamine (PO) has been already subject to Scientific Committee of Cosmetology (SCC) for evaluation at 1980 and the result of the respective evaluation and the opinion of the SCC is laid down at 1987.

More than 30-year user experience proved its safety and efficacy (3% used) and had been approved for use in cosmetic products at a maximal concentration of 1 % (rinse-off products) or 0.5 % (other products).

Nowadays people pay more and more attention to the safety of the daily use personal care(PC) products, SpecKare® PO complies with this new trend, it provide formulators more flexibility (Clear Type) to make more safety and efficacy PC products due to Spec Chem's production capacity.





Regulations Compliance

Inventory Status of chemicals, regulated on:

- ❑ IECSC--Inventory of Existing Chemical Substances in China
- ❑ EINECS—European Inventory of Existing Commercial Chemical Substances
- ❑ DSL- Canada Domestic Substances List
- ❑ PICCS—Philippine Inventory of Chemicals and Chemical Substances
- ❑ NZIoC—New Zealand Inventory of Chemicals
- ❑ AICS- Australian Inventory of Chemical Substances
- ❑ ECL—Korean Existing Chemicals List
- ❑ TCSI—Taiwan Chemical Substance Inventory
- ❑ IECIC—Inventory of Existing Cosmetic Ingredients in China

Inventory Status of cosmetics, regulated on:

- ❑ CTFA-International Cosmetic Ingredient Dictionary and Handbook
- ❑ IECIC-Inventory of Existing Cosmetic Ingredients in China
- ❑ Inventory of International Existing Cosmetic Ingredients
- ❑ Cosing-European Commission database for information on cosmetic substances and ingredients



Information of SpecKare® PO

Items	Specification
Appearance	White crystalline powder
Odor	Characteristic
Solubility	Water (0.10g+10mL): non-soluble Methanol (1.00g+10mL): soluble
Purity(HPLC)	≥99.0%
pH(1% in water, 20℃)	8.5-10.0
Melting point	130-135℃
Loss on drying	≤0.3%
Ash (SO4)	≤0.2%
Particle size distribution	100mesh
E 1% (1 cm) at 317 nm expressed on dried substance	204-236
Ethanolamine	20.0-21.0%
Nitrosamine content (PPb)	≤50
Heavy metals (Pb,As,Cd,Co,Cr,Hg,Ni,Sb)	≤10ppm
Hexane (GC) Ethyl acetate(GC)	Not Detected ≤3000ppm

Product No:	170012
Trade Name:	SpecKare® PO
INCI Name:	Piroctone Olamine
CAS NO:	68890-66-4
EINECS NO:	272-574-2
Chemical Name:	1-Hydroxy-4-methyl-6-(2,4,4-trimethylpentyl)pyridin-2(1H)-one, compound with 2-aminoethanol (1:1)
Application:	Anti-dandruff, Anti-pruritic, Anti-microbial and etc.
Dosage:	≤0.5% (Leave-on), ≤1.0% (others, including rinse-off)
Storage:	Keep container tightly closed in a dry and well-ventilated place. The container is free of Nitrite
Package:	1kg/battle & 5kg/battle & 25kg/carbon
Shelf life:	3 year

The Features of SpecKare® PO:

- ✓ Formaldehyde-free, Paraben-free, Broad-spectrum Anti-Microbial
- ✓ Effectively eliminate unpleasant odor, both for Human & Pet
- ✓ Excellently anti-dandruff active that soothes inflamed scalps and reduces flaking
- ✓ Increase the mean hair shaft thickness, suitable for volume-up formula
- ✓ Decrease the sebum output at the skin surface, suitable for anti-acne application
- ✓ Additional thickening properties
- ✓ Clinically approved effective, Safe to use, Non-irritating
- ✓ More formulation flexibility & solubility, also suitable for clear type
- ✓ Superior than ZPT, the best alternative to ZPT





Efficacy Test of SpecKare® PO

4.1 Safety

Following Results from SCCNPF 《OPINION OF THE SCIENTIFIC COMMITTEE Regarding PO ON COSMETIC PRODUCTS AND NON-FOOD PRODUCTS INTENDED FOR CONSUMERS》 Feb.27th 2002

Irritation (skin)

OECD 404: Three New Zealand White rabbits were treated topically with concentrations of 2.0 % (left flank) or 3.0 % (right flank). Exposure time was 4 hours. The test compound was kept in contact with the skin by semi-occlusive dressing. Cutaneous reactions were observed and scored 1 hour, 24, 48 and 72 hours after removal of the dressing.

Result: No cutaneous reactions were observed in the study. The test substance was rated to be non-irritant to the skin of rabbits at concentrations up to 3.0 %.

Irritation (mucous membranes)

OECD 405: The eyes of three New Zealand White rabbits were treated with 0.1 ml concentrations of 2.0 % (left eye) or 3.0 % (right eye). The eyes were not rinsed after application of the test substance. Ocular reactions were observed and scored 1 hour, 24, 48 and 72 hours after administration.

Result: With the exception of a single case of a slight and transient corneal opacity (3.0 %, day 2), ocular reactions were limited to the conjunctiva (redness, chemosis and discharge). At 2.0 % very slight to moderate conjunctival reactions were observed in all animals and persisted up to day nine of the study. At 3.0 %, very slight to moderate conjunctival reactions (redness; chemosis, discharge) and a single case of mild, transient corneal opacity (day 2 only) was observed in all animals and persisted up to day three. On the basis of the irritation scores, the test substance was rated to be a slight irritant in rabbits.

Human Data

In a double-blind study in humans (report in French language) the tolerance of two cream formulations, i.e. 47JP12 and 47JP2, containing 1.0 % and 0.5 % octopirox (piroctone olamine, PO), respectively. With the exception of the different content of PO, the formulation ingredients were identical. The creams were applied once a day, morning or evening, to the face of 65 volunteers, 5 times a week, for a total of four weeks.

Result: No difference was noted in the tolerance of these formulations. Both creams showed a good acceptance and tolerance. These data support the tolerance of 1.0 % PO in face creams.

SPECHEM hasn't conducted any animal test on SpecKare® PO.

4.1.1 Skin Irritation Test of SpecKare® PO (0.5%)

Skin Irritation by 3D Skin Model (Episkin)—Reconstructed Human Epidermis

3. Test results

3.1 The tissue viability(%) for test substance and controls (positive and negative) list as table 1.

3.2 The tissue viability(%) of test substance is 88.30%, positive control is 12.64%.

The results are show as table 1.

Table1. Result for in vitro skin irritation by skin model

Group	Positive control	solvent control	SpecKare™PO (Piroctone 01amine)
Mean OD±SD	0.09±0.01	0.75±0.01	0.66±0.01
Viability (%)	12.64±1.33	100	88.30±1.14

Remark: Results and conclusions apply only to the test article sample tested provided by Client. Therefore, this Report contains the results obtained in the test of the provided samples only and do not express any opinion upon the lot from which the samples were drawn or any similar samples.

4. Conclusion

According to OECD TG 439: chemicals skin in vitro skin irritation: reconstructed human epidermis test method (2012), under the conditions of this test, the tissue viability of the sample "SpecKare™PO (Piroctone 01amine)" is 88.30% (viability > 50%) and it was considered as no skin irritation.



Conclusion: According to OECD TG 439: under the conditions of this test, the tissue viability of the sample-SpecKare® PO is 88.3% (Viability > 50%) and it was considered as **no skin irritation**.

4.1.2 Eye Irritation of SpecKare® PO (0.5%)

By Bovine Cornea Opacity and Permeability (BCOP) Test

3. Test result

The results of opacity, permeability (OD values) and calculated IVS are showed as table 1.

Table 1. The results of in vitro score

Corrected Opacity (mean±SD)	Corrected OD (mean±SD)	IVS (mean±SD)
-0.9113±0.0710	0.0857±0.0174	0.3747±0.3023

≤3.0%

4. Conclusion

According to the OECD 437(2013) standard for "Bovine Corneal Opacity and Permeability Test Method for Identifying i) Chemicals Inducing Serious Eye Damage and ii) Chemicals Not Requiring Classification for Eye Irritation or Serious Eye Damage", under the conditions of this study, the IVS of the test article is 0.3747, which classified as No Category. When The sample "SpecKare® PO (Propofone Ophthalmic)" at a concentration of 0.0125% and a DMOS concentration of 0.5% is non eye irritants.

Attention: The results and conclusion of this test is only appropriate for the sample supplied by the client. Therefore, the results of this report can't be extended to other similar products or other products involving the testing sample. The laboratory is not responsible for the authenticity of the sample information.



Follow the Cruelty-free principle!

Conclusion: according to OECD 439, under the conditions of this study, the (in vitro score) IVS of test sample-SpecKare® PO is 0.3747, which classified as NO Category. When the sample-SpecKare® PO at a concentration of 0.0125% and a DMSO concentration of 0.5% is non eye irritant.

4.1.3 Safety-No Mutagenicity

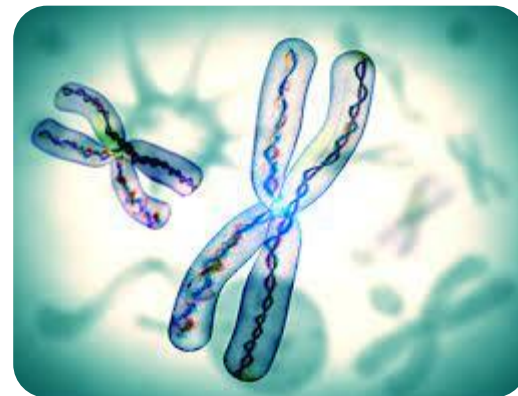
By Ames Test (Salmonella typhimurium/mammals microsomal enzyme test)

Result

For each triplicate plates, the mean of the reverting colonies per plate was calculated. Details see table 1. If bacteria colonies in any of the test article dosage counted two times more than that in the vehicle plate (negative control) and presented a dose-response relationship, the result should be treated as positive.

Table 1 Mean of the reverting colonies from Ames test of Piroctone Olamine ($\bar{x} \pm s$, $n=3$)

Dose ($\mu\text{g}/\text{plate}$)	TA97		TA98		TA100		TA102	
	+S ₉	-S ₉	+S ₉	-S ₉	+S ₉	-S ₉	+S ₉	-S ₉
Spont.	145±15	136±14	32±3	30±2	146±16	135±18	258±20	252±24
Dist. 0.1ml/plate	139±17	130±16	31±3	29±4	151±16	141±15	260±24	248±24
Sample 78.1	121±16	119±14	32±3	31±3	150±15	143±15	258±21	253±22
156.2	127±13	109±15	31±3	32±5	152±15	148±16	259±20	250±25
312.5	110±15	107±13	29±2	26±2	113±17	100±16	250±33	241±20
625.0	101±19	72±3	11±5	5±2	78±9	82±14	138±43	129±15
Dexon 50.0		1474±116		1325±117				1142±181
2-AF 10.0	1163±178		1395±167		1265±150			
NaN ₃ 1.5						1463±189		
1,8-DHAQ 50.0							715±90	



SPECHEM hasn't conducted any animal test on SpecKare® PO.

Be Cruelty-free !

Conclusion: No positive results were found with all the test strains in the presence and absence of metabolic activation system, when using SpecKare® PO.



Efficacy Test of SpecKare® PO

4.1.4 SpecKare® PO Quality Control-Free Amine



二乙醇胺含量

根据申请者的要求，参考SN/T 2107-2008《进出口化妆品中一乙醇胺、二乙醇胺、三乙醇胺的测定方法》测试样品中的二乙醇胺。

测试项目	单位	测试结果	检出限
二乙醇胺 Diethanolamine	mg/kg	未检出	500

备注：未检出表示低于检出限

样品接收时间：2020年03月10日

测试周期：2020年03月10日至2020年03月17日

Test Result*

Compound Name	Test Result	CAS No.	Test Instrument	Method Detection Limit
N-nitrosohexamethyleneimine	ND	932-83-2	GC-MS	5 ppm

*Test Item is subcontracted on INTERTEK accreditation laboratory

Date Sample Received: Sep 30, 2019

Testing Period: Sep 30, 2019 To Oct 16, 2019

Tests Conducted N-nitrosodiethanolamine

According to Client's Requirement, With reference to ISO 15819:2014《Cosmetics – Analytical methods – Nitrosamines: Detection and determination of N-nitrosodiethanolamine(NDELA) in cosmetics by HPLC-MS-MS》，the content of NDELA was tested by LC-MS-MS.

Test Items	Unit	Test Results			Method Detection Limit	Standard Requirement (Safety and Technical Standards for Cosmetic)	Single Determination
		(1)	(2)	(3)			
N-nitrosodiethanolamine	μ g/kg	ND	ND	ND	15	Prohibited	Pass

Remark: ND=Not detected

Tested components:

1.20171220

2.20180425

3.20180716

Date Sample Received: Dec 06, 2018

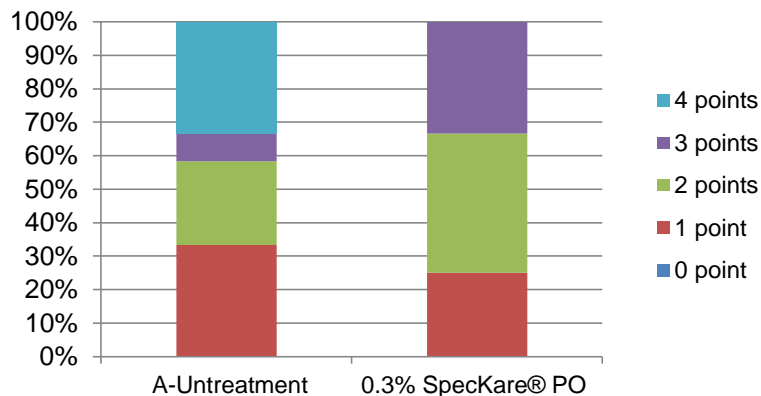
Testing Period: Dec 06, 2018 To Dec 14, 2018

SpecKare® PO doesn't contain diethanolamine,
diethanolnitrosamine and hexamethylene nitrosamine.

4.2 SpecKare® PO-Deodorant (Pet Care)

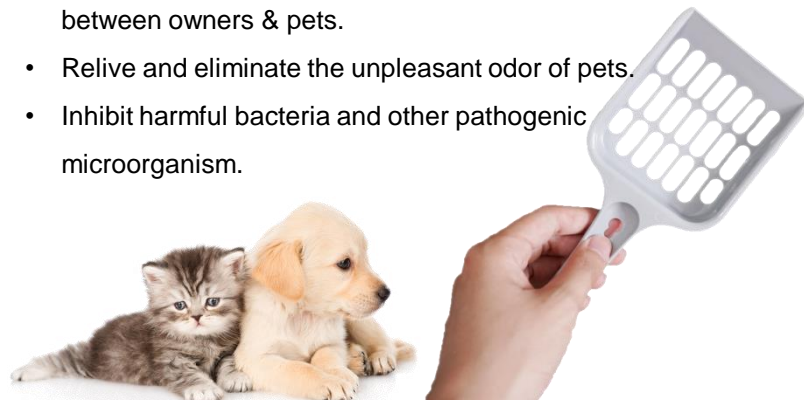
Improve the unpleasant odor of cat litter

Odor-eliminating Test of 0.3% SpecKare® PO Solution



注: 10 volunteers, 0 point: No obvious odor, 5 point: the strongest odor

- Improve the unpleasant odor around pet surroundings, create a more intimate and comfortable environment between owners & pets.
- Relieve and eliminate the unpleasant odor of pets.
- Inhibit harmful bacteria and other pathogenic microorganism.





Efficacy Test of SpeckKare® PO

4.3 Anti-dandruff-Mechanism

The scalp depends itself against micro-organisms and fungus infections. Piroctone olamine has a specific action against Pityrosporum Ovale, the agent responsible for the production of dandruff.

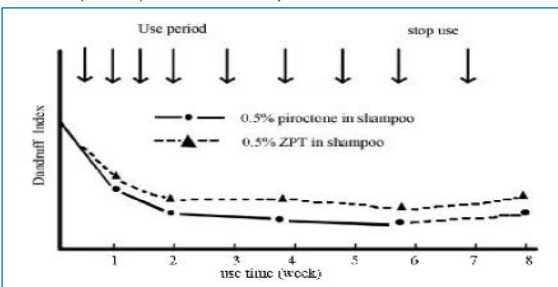
The anti-dandruff product containing piroctone olamine destroys the fungus infection that is responsible for the dandruff and works against the formation of new dandruff, makes the scalp stays clean, itch free and prevents the formation of new dandruff, you become free of all the inconvenience relating to dandruff.



4.3 Anti-dandruff

Antidandruff Effect Comparative Study of PO VS ZPT

Antidandruff Effect Comparative Study of 0.5 (w/w%) PO VS 0.5 (w/w%) ZPT in Shampoo



Summary: using shampoo containing 0.5% ZPT 0.5% PO separately 8 times for 6 weeks, the results show that PO can reduce dandruff more effectively than ZPT, the former reduces by 81.7% while the later reduce by 68.6%.

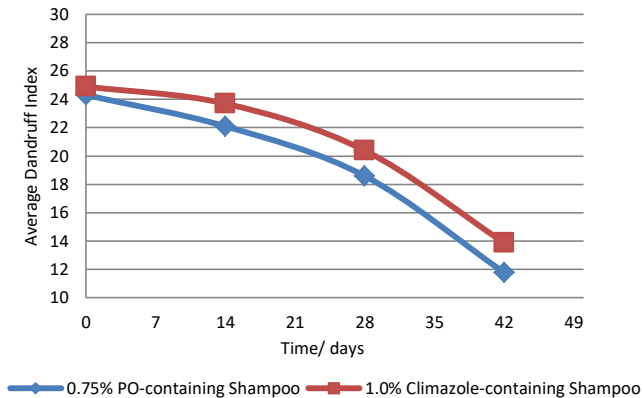
Antidandruff Effect Comparative Study of PO VS ZPT after using for 2 weeks

ITEM	P.O	Z.P.T	Percentage of cases in total subjects	
	%	%	Z.P.T>P.O.	P.O.>Z.P.T
Hair care essence	0.3	0.3	9	29
	0.5	1.0	8	33
Shampoo	0.75	1.0	7	47
	1.0	1.0	8	49

Summary: shampoo containing 0.5%, 0.75% and 1% piroctone are markedly superior to shampoo containing 1% Z.P.T in antidandruff effect. Note: ">" in table means that the antidandruff effect performs better

4.3 Anti-dandruff

Antidandruff Effect Comparative Study of PO VS Climbazole



Type	Time (d)										
	-1		14			28			42		
	B	C	B	C	△	B	C	△	B	C	△
Average Dandruff	24.9	24.3	23.7	22.1		20.4	18.6		13.9	11.8	
Dandruff Reduction			1.2	2.2	1	4.5	5.7	1.2	11	12.5	1.5
Dandruff Reduction Percentage (%)			4.8	9.1		18.1	23.5		44.2	51.4	

Summary: The results show that PO has superior short-term & long-term antidandruff effect than Climbazole, even the use level of PO (0.75%) is less than Climbazole (1.0%) in same shampoo.

4.4 Antipruritic

Comparison of anti- itch effect between piroctone and Z.P.T in hair essence and shampoo

Type	P.O.	Z.P.T	Percentage of cases in total subjects	
	%	%	Z.P.T>P.O.	P.O.>Z.P.T
Hair condition	0.15	0.3	10	30
	0.3	0.3	20	31
	0.5	1.0	10	25
Shampoo	0.75	1.0	16	33
	1.0	160	15	34

Note: ">" in table means that the antipruritic effect performs better





Efficacy Test of SpeckKare® PO

4.5 Antiseborrhoeic

Anti-seborrhoeic effect of PO—A: Shampoo with 0.2% PO, B: Base Shampoo (50% aqueous solution of Isopropanol),
twice/day for 4 weeks

Testing Subjects Gender	Total epidermal lipids ($\mu\text{g}/\text{cm}^2$)				Decrease in sebum			
	A		B		A	B	Δ	P
	Before treatment	After treatment	Before treatment	After treatment				
1 ♂	50	34	43	34	↓↓↓	↓↓↓		
2 ♂	46	40	43	33	↓↓	↓↓↓		
3 ♀	46	46	43	47	→	↑		
4 ♀	30	30	30	32	→	↑		
5 ♀	43	47	43	40	↑	↓		
6 ♂	43	30	37	32	↓↓↓	↓↓		
7 ♂	31	29	32	28	↓	↓		
8 ♀	39	34	42	36	↓↓	↓↓		
9 ♀	39	32	40	37	↓↓	↓		
10 ♂	40	46	38	42	↑↑	↑		
Average: 40.7		36.8	39.1	36.1	-3.9 ≤-9.6%	-3.0 ≤-7.7%	-0.9	Ns



Efficacy Test of SpecKare® PO

4.6 Antimicrobial (SPEC CHEM's Microbial Challenge Testing Laboratory)

The MIC of piroctone olamine to 11 microorganisms

Microorganisms			MIC (mg/L)
Bacteria	Aerobic	Staphylococcus aureus	6.25
		Staphylococcus epidermidis	6.25
		Escherichia Coli	12.5
	Anaerobic	Propionibacterim acnes	6.25
Fungi	Cutaneous fungi	Trichophyton rubrum	6.25
		T. mentagrophytes	12.5
		Microsporum canis	12.5
		Epidermophyton floccosum	6.25
	Candida	Candida albicans	25
		Candida tropicalis	25
	Malassezia furfur		12.5



SpecKare® PO :

- ✓ The MIC of PO against 11 microorganisms stabilizes between 6.25 and 25mg/L. (*Theoretical minimum dosage 0.0025%*)
- ✓ Wide-spectrum of antibacteria and antifungi properties



Efficacy Test of Speckare® PO

4.7 Thickening

Synergistically increasing Formula's Viscosity—additional value of PO

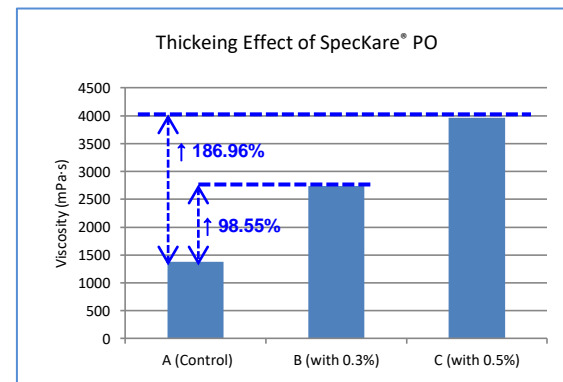
PO has an obvious action of increasing viscosity of Cleansing formulation (as follow table), when the PO dosage in formula reaches 0.3-0.5%, the viscosity of the testing shampoo can be increased significantly.

(with Speckare® PO) :

- ✓ production process (Formula)
- ✓ Raise the product stability
- ✓ Reduce product cost & irritation (No Need for extra NaCl)

	Ingredient	INCI Name/Supplier	A	B	C
			w/w%		
A	Water		To 100	To 100	To 100
	Ammonium Laureth Sulfate		15	15	15
	Sodium lauryl Sulfate		5	5	5
	SpecSufc® CAB	Spec Chem/ Cocamidopropyl Betaine	5	5	5
B	Sodium Chloride		1	1	1
C	Speckare® PO	Spec Chem/ Piroctone Olamine	-	0.3	0.5

pH:7.0-7.5





Application: PO is a broad spectrum of microbicide/microbiostat, may be used in formulating antidandruff shampoo, hair keep and hair care, soap, etc..

Recommend Use Level

Antidandruff rinse-off:	0.1-1.0%
Antidandruff leave-on :	0.05-0.5%
Anti-acne rinse-off:	0.1-1.0%
Anti-acne leave-on:	0.05-0.5%
Pet care rinse-off:	0.1-1.0%
Pet care leave-on:	0.05-0.5%
Deodorant Spray:	0.2-0.5%
Other Industries:	Depends

The above information is provided by the Spec-Chem Industry Co., Ltd, the main purpose is to facilitate the use of cosmetics product development professional and technical personnel. The reliability of the information the user should be based on their knowledge and ability to make judgments, and can be modified accordingly within a reasonable supplement to this all the consequences, Spec-Chem Industry Co., Ltd. does not assume any responsibility

Comparative Study of PO VS ZPT VS Climbazole

	SpecKare® PO	ZPT	Climbazole
INCI Name	Piroctone Olamine	Pyrrithione Zinc	Climbazole
Chemical/IUPAC Name	1-Hydroxy-4-methyl-6-(2,4,4-trimethylpentyl)pyridin-2(1H)-one, compound with 2-aminoethanol (1:1)	Pyridine-2-thiol-1-oxide, zinc complex (2:1)	(R,S)-1-(4-chlorophenoxy)-1-imidazol-1-yl-3,3-dimethylbutan-2-one
Structure			
EU Functions	PRESERVATIVE	ANTIDANDRUFF ANTISEBORRHOEIC HAIR CONDITIONING PRESERVATIVE	ANTIDANDRUFF ANTIMICROBIAL PRESERVATIVE
EU Regulations	(a) Preservatives a) Rinse-off products 1.0% b) Other products 0.5% (b) SCCS Non-Preservatives Up to 3.0%	(a) Not be used oral hygiene products (b) As a preservative: a) Rinse-off products (excluding oral hygiene products) 0.5% b) Rinse off hair products 1.0% (c) SCCS Rinse-off anti-dandruff hair care Up to 2% (d) Leave-on hair products 0.1%	(a) Hair lotions 0.2% (b) Face creams 0.2% (c) Foot care products 0.2% (d) Rinse-off shampoo 0.5% (e) Rinse-off anti-dandruff shampoo 2.0%



Application Guide of SpecKare® PO

Compatibility:

PO is compatible with common cosmetic ingredients, also compatible with cationic surfactants and cationic active components despite the anionic character of the active ingredient molecule. The aldehyde and keto groups in some specific frag may cause color problems, chelating and antioxidant agents are helpful to prevent discoloration.

Stability:

- a). pH: Stable (in solution) at pH 3-9
- b). Heat: Excellent temperature tolerance, stable even heat above 80℃ for a while
Formulation (Shampoo) with PO (@pH=5.5-7.0) PO passed 1-year stability test (@ above 40℃)
- c). Light: Decompose under direct ultraviolet radiation. keep in dark place
- d). Metals: PO Solution degrades in the presence of cupric and ferric ions.

Solubility:

Freely soluble in ethanol-containing (1-10%) & surfactant-containing solution; Slightly soluble in water (0.05%) and in Oil (0.05%-0.1%) , and solubility in water various with solution pH, better solubility can be observed in neutral and weakly alkaline than acidic pH

- Totally soluble in Ethyl Alcohol system;
- Totally soluble in polyhydric alcohols system, like Dipropanediol, butylene glycol, propanediol and etc.
- Totally soluble in surfactant solution, add SpecKare® PO directly into surfactants while stirring until uniform;
- Slightly soluble in water(0.05%), in watery formulation, solubilizers is needed to be added to help solubilizing PO
- In Ethyl alcohol/Water system, use level of ethyl alcohol must ≥26%.

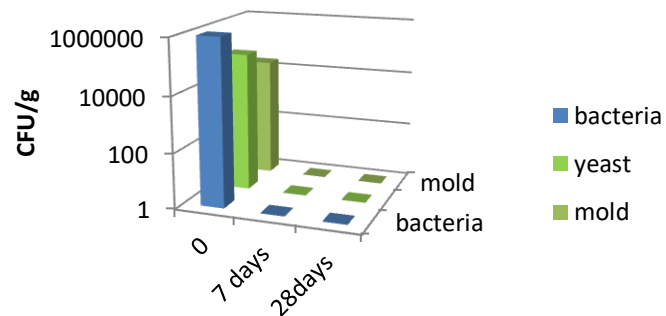
Dosage:

Resident skin care products: 0.05%-0.5%; Rinse-off hair care products: 0.3-1.0%

Formulation Example: Essence with 0.1% SpecKare® PO (piroctone olamine)

	Trade Name	Supplier/ INCI Name	w/w%	Function
A	SpecThem® XTG200	Spec Chem/ Xanthan Gum	0.2	Thickener
	Glycerin		5	Humectant
	Butylene Glycol		2	Humectant
	Glycereth-26		2	Emulsifier
	SpecKare® HAL	Spec Chem/ Sodium Hyaluronate	5	Humectant
	Water		To 100	
	SpecKare® ALLA	Spec Chem/ Allantoin	0.1	Anti-inflammatory
	SpecKare® NK2	Spec Chem/ Dipotassium Glycyrrhizate	0.1	Anti-inflammatory
	Disodium EDTA		0.05	Chelating Agent

Essence with 0.1% SpecKare® PO



Formulation Example 1: Antidandruff and soft shampoo Lot#: 08060101B

Ingredients	%
Aqua	To 100
EDTA-2Na	0.10
AESA (70%)	8
K ₁₂ A(70%)	8
TC-8025	5
TC-14-S	0.15
Cetearyl alcohol	0.5
Pearling agent	1.0
CMEA	1
TC-23	0.5
TC-SHD	3
CAB-35	2
TC-1352	2
Kathon	0.05
P.O.	0.5
Citric acid	pH(6.0-6.2)
Essence	Q.S

Operation Process:

1. Disperse TC-14-S in water;
2. Add TC-8025 and EDTA-2Na;
3. Heat AESA, K12A to 75-80 °C, and add them to above system
4. Pearling agent, CMEA, cetostearyl alcohol heated to 80 °C while stirring for 15-20 minutes, and add all of them to above system;
5. Cool to 50 °C, add TC-1352 silicone emulsion, TC-SHD, CAB-35;
6. Pre-disperse PO in deionized water , add to the system;
7. Add citric acid while stirring to adjusted pH;



Formulation Example 2: Hair Conditioner

Ingredients		(%)
A-1: Oil phase	octadecyl alcohol	6
	Docosyltrimethylammonium chloride	1
A-2	TC-1214 (100cst)	1.5
	TC-1233	1.5
B: Water phase	Glycine	3
	HEC	0.5
	TC-POLYQUAT 200L	0.3
	Aqua	To 100
C	P.O.	0.3
	Preservative	Q.S
	Essence	Q.S

Operation process:

1. Heat A-1: Oil phase to 75 °C
2. Heat B: Water phase to 70-75 °C
3. Add A-1 into B while stirring
4. Cool to 55-60 °C, add phase A-2 and homogenize for three minutes.
5. Continue to cool to 40-45 °C, add phase C-PO, preservative and essence while stirring 10-15 minutes .



Existing Commercial Products





Vichy Dercos

Anti-Dandruff Shampoo For Sensitive Scalp

Ingredients overview

Aqua / Water , Sodium Methyl Cocoyl Taurate , Laureth-5 Carboxylic Acid , Cocamidopropyl Betaine , Sodium Chloride , Bisabolol , Farnesol , Hexylene Glycol , Lactic Acid , Peg-150 Distearate , Peg-55 Propylene Glycol Oleate , **Piroctone Olamine** , Polyquaternium-10 , Propylene Glycol , Salicylic Acid , Sodium Benzoate , Sodium Hydroxide , Sodium Lauroyl Glutamate , Parfum / Fragrance



La Roche-Posay Effaclar Duo[+] Global

Acne Treatment

Anti-recurrence global acne treatment: Reduces acne and helps to prevent relapse. Reduces the number of acne pimples and allows skin to heal. Prevents breakout recurrence. Purifies clogged pores. 24H hydrating lotion

Ingredients overview

Active Ingredients: Salicylic Acid

Inactive Ingredients: Aqua , Glycerin , Dimethicone, Isocetyl Stearate , Niacinamide , Isopropyl Lauroyl Sarcosinate , Silica , Ammonium Polyacryloyldimethyl Taurate , Methyl Methacrylate Crosspolymer , Sodium Hydroxide , Poloxamer 338 , Polysorbate 80 , Mannose , Xanthan Gum , Zinc Pca , Isohexadecane , 2-Oleamido-1,3-Octadecanediol, Capryloyl Salicylic Acid , Caprylyl Glycol , **Piroctone Olamine** , Myristyl Myristate , Acrylamide/Sodium Acryloyldimethyltaurate Copolymer , Sorbitan Oleate , Disodium EDTA , Potassium Cetyl Phosphate , Vitreoscilla Ferment



Uriage

Xémose –Lipid Replenishing Anti-Irritation Cream

Nourishing, protective cream instantly soothes itching sensations that cause scratching due to dryness and brings longlasting comfort.

Ingredients overview

Aqua (Water, Eau) , Paraffinum Liquidum (Mineral Oil), Butyrospermum Parkii (Shea) Butter , Dicaprylyl Ether , Glycerin , Polysorbate 60 , Butylene Glycol , Cetyl Alcohol , Squalane , Sodium Polyacrylate , Glyceryl Stearate , PEG-100 Stearate , Brassica Campestris (Rapeseed) Sterols , Dimethicone , Chlorphenesin , Tocopheryl Acetate , Cetrimonium Bromide , **O-Cymen-5-Ol** , **Piroctone Olamine** , Xanthan Gum , Raspberry Seed Oil/Palm Oil Aminopropanediol Esters, Asiaticoside , Phytosphingosine , Borage Seed Oil Aminopropanediol Amides

Nivea Sensitive Cooling Post Shave Balm

*Immediately cools men's skin after shaving and is specially formulated for sensitive skin. It regenerates and protects against skin inflammation. Immediately cools, tones and stimulates. Protects against skin inflammation. Helps regenerate the skin. Dermatologically approved. *no Ethylalcohol*



Ingredients overview

Aqua , Glycerin , Isopropyl Palmitate , Chamomilla Recutita Flower Extract , Bisabolol , Tocopheryl Acetate , Tocopherol , Fucus Vesiculosus Extract ,Menthoxyprompanediol, Glycine Soja Oil , Tapioca Starch, Triceteareth-4 Phosphate , Sodium Carbomer ,Caprylic/Capric Triglyceride , Phenoxyethanol ,Piroctone Olamine , Bht , Linalool , Limonene ,Geraniol , Parfum



As I Am

Cleansing Pudding

A rich sulfate-free creamy moisturizing beauty bath for your hair! Contains a special blend of natural ingredients, including saw palmetto and phytosterols, that helps to eliminate DHT build-up from the scalp, and promote healthy hair growth from the follicular level.

Ingredients overview

Aqua/Water/Eau , Cetearyl Alcohol , Sodium Cocoamphopropionate , Hydroxypropyl Starch Phosphate , Behentrimonium Chloride , Citrus Reticulata (Tangerine) Fruit Extract, Aloe Barbadensis Leaf Extract , Sodium Benzoate , Potassium Sorbate , Erythorbic Acid , Citric Acid , Glycerin , Phytosterols, Serenoa Serrulata Fruit Extract, Ricinus Communis (Castor) Seed Oil , Curcuma Longa (Turmeric) Root Powder, **Piroctone Olamine** , Cetrimonium Chloride , Phenoxyethanol , Caprylyl Glycol , Fragrance/Parfum (Limonene) , Potassium Sorbate



Foltène

Anti-Dandruff Shampoo

Ingredients overview

Aqua (Water) , Sodium Coceth Sulfate , Disodium Cocoamphodiacetate , Cocamidopropyl Betaine , Sodium Cocoyl Sarcosinate , Sodium Chloride ,

Piroctone Olamine , Phenoxyethanol , Salicylic Acid, Propylene Glycol , PEG-12 Dimethicone , Thymus Vulgaris (Thyme) Flower/Leaf Extract, Parfum (Fragrance) , Disodium EDTA , Citric Acid , Imidazolidinyl Urea , Benzyl Alcohol , Hexyl Cinnamal , Limonene.

Thank you for your attention!



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