

SUMMARY OF PRODUCT CHARACTERISTICS

1. Name of the medicinal product

Epiduo Forte 0.3%/2.5%

2. Qualitative and quantitative composition

One (1) gram of gel contains:

Adapalene 3 mg (0.3 %w/w)

Benzoyl Peroxide 25 mg (2.5 %w/w)

Excipient with known effect: Propylene Glycol 40 mg/g (4.0%), Polysorbate 80 \leq 4 mg/g (a component of the excipient Simulgel 600 PHA).

For the full list of excipients, see section 6.1.

3. Pharmaceutical form

Gel.

White to very pale yellow opaque gel.

4. Clinical particulars

4.1 Therapeutic indications

For cutaneous treatment of moderate to severe acne vulgaris in which there are comedones and numerous papules and pustules.

4.2 Posology and method of administration

Posology

Epiduo Forte 0.3%/2.5% gel should be applied once a day in the evening to the entire acne affected areas of the face and the trunk on a clean and dry skin.

The duration of treatment should be determined by the doctor based on the overall clinical condition and on the therapeutic response to the treatment. Early signs of clinical improvement usually appear after 1 to 4 weeks of treatment. If no improvement is observed after 4-8 weeks of treatment, the benefit of continued treatment should be reconsidered.

A lower strength of Epiduo is available (Epiduo 0.1%/2.5% gel) and this concentration should be considered in patients with moderate acne vulgaris (see section 5.1).

When the entire face is involved with numerous papulopustules, an increased clinical benefit was observed in the subjects treated with Epiduo Forte 0.3%/2.5% gel compared with the reference therapy (Epiduo 0.1%/2.5% gel). Doctors may choose between the two concentrations based on the presenting patient's clinical condition and severity

Special populations

Elderly

The safety and efficacy of Epiduo Forte 0.3%/2.5% gel in geriatric patients aged 65 years and above have not been established.

Renal and hepatic impairment

Epiduo Forte 0.3%/2.5% gel has not been studied in patients with renal and hepatic impairment.

Paediatric population

The safety and efficacy of Epiduo Forte 0.3%/2.5% gel have not been studied in children below 12 years of age.

Method of administration

Cutaneous use only.

Apply a thin layer of Epiduo Forte 0.3%/2.5% gel to affected areas of the face and/or trunk once daily after washing. Use a pea-sized amount for each area of the face (e.g. forehead, chin, each cheek), avoiding the eyes and lips (see section 4.4).

Patients should be instructed to wash their hands after applying the medicinal product.

Cosmetics may be applied after the medicinal product has dried.

If irritation occurs, the patient should be directed to apply non-comedogenic moisturisers as needed, to use the medication less frequently (e.g. every other day), to suspend use temporarily, or to discontinue use altogether

4.3 Contraindications

- Pregnancy (see section 4.6)
- Women planning a pregnancy (see section 4.6)
- Hypersensitivity to the active substances or to any of the excipients listed in section 6.1.

4.4 Special warnings and precautions for use

Epiduo Forte 0.3%/2.5% gel should not be applied to damaged skin, either broken (cuts or abrasions), sunburn or eczematous skin.

The medicinal product should not come into contact with the eyes, lips, mouth, nostrils or mucous membranes. If product enters the eye, wash immediately with warm water.

If a reaction suggesting sensitivity to any component of the formula occurs, the use of Epiduo Forte 0.3%/2.5% gel should be discontinued.

Excessive exposure to sunlight or UV radiation should be avoided.

Epiduo Forte 0.3%/2.5% gel should not come into contact with any coloured material including hair and dyed fabrics as this may result in bleaching and discoloration.

This medicine contains 40 mg propylene glycol in each gram which is equivalent to 4 %w/w.

This medicine contains polysorbate 80 (a component of the excipient Simulgel 600 PHA), which can cause allergic reactions.

The efficacy and safety of Epiduo Forte 0.3%/2.5% gel in patients with severe nodular or deep nodulocystic acne have not been studied. As patients with severe nodular / nodulocystic acne are at increased risk of permanent scarring secondary to acne lesions, the use of Epiduo Forte 0.3%/2.5% gel in these patients is not recommended due to the risk of insufficient therapeutic response.

4.5 Interaction with other medicinal products and other forms of interaction

No interaction studies have been conducted with Epiduo Forte 0.3%/2.5% gel.

From previous experience with adapalene and benzoyl peroxide, there are no known interactions with other medicinal products which might be used cutaneously and concurrently with Epiduo Forte 0.3%/2.5%. However, other retinoids or benzoyl peroxide or drugs with a similar mode of action should not be used concurrently. Caution should be exercised if cosmetics with desquamative, irritant or drying effects are used, as they may produce additive irritant effects with the medicinal product

Absorption of adapalene through human skin is low (see section 5.2), and therefore interaction with systemic medicinal products is unlikely.

The percutaneous penetration of benzoyl peroxide in the skin is low and the drug substance is completely metabolised into benzoic acid which is rapidly eliminated. Therefore, the potential interaction of benzoic acid with systemic medicinal products is unlikely to occur.

4.6 Fertility, pregnancy and lactation

Orally administered retinoids have been associated with congenital abnormalities. When used in accordance with the prescribing information, topically administered retinoids are generally assumed to result into low systemic exposure due to minimal dermal absorption. However, there could be individual factors (e.g. damaged skin barrier, excessive use) that contribute to an increased systemic exposure.

Pregnancy

Epiduo Forte 0.3%/2.5% gel is contraindicated (see section 4.3) in pregnancy, or in women planning a pregnancy.

There are no or limited amount of data from the use of adapalene topically in pregnant women.

Animal studies by the oral route have shown reproductive toxicity at high systemic exposure (see section 5.3).

Clinical experience with locally applied adapalene and benzoyl peroxide in pregnancy is limited.

If the product is used during pregnancy, or if the patient becomes pregnant while taking this drug, treatment should be discontinued.

Breast-feeding

No study on animal or human milk transfer was conducted after cutaneous application of Epiduo Forte 0.3%/2.5% gel. Available pharmacokinetic data in rats have shown excretion of adapalene in milk after oral or intravenous administration of adapalene.

A risk to the suckling child cannot be excluded.

A decision must be made whether to discontinue breast-feeding or to discontinue/abstain from Epiduo Forte 0.3%/2.5% gel therapy weighting the benefit of breast-feeding for the child and the benefit of therapy for the woman.

To avoid contact exposure of the infant, application of Epiduo Forte 0.3%/2.5% gel to the chest should be avoided when used during breast-feeding.

Fertility

No human fertility studies were conducted with Epiduo Forte 0.3%/2.5% gel.

However, no effects of adapalene or benzoyl peroxide on fertility were found in rats in reproductive studies (see section 5.3).

4.7 Effects on ability to drive and use machines

Epiduo Forte 0.3%/2.5% gel has no or negligible effects on the ability to drive and use machines.

4.8 Undesirable effects

Summary of safety profile

Approximately 10% of patients can be expected to experience adverse skin reactions. Treatment-related adverse reactions typically associated with use of Epiduo Forte 0.3%/2.5% gel include mild to moderate application site reactions, such as skin irritation mainly characterized by scaling, dryness, erythema, and burning/stinging. Recommendation is to use moisturiser, temporarily reduce the application frequency to every other day, or temporarily discontinue its use until once daily schedule can be resumed.

These reactions usually occur early in the treatment, and tend to gradually lessen over time.

Tabulated summary of adverse reactions

The adverse reactions are classified by System Organ Class and frequency, using the following convention: very common ($\geq 1/10$), common ($\geq 1/100$ to $<1/10$), uncommon ($\geq 1/1,000$ to $1 < 100$), rare ($\geq 1/10,000$ to $<1/1,000$), very rare ($<1/10,000$), not known (cannot be estimated from the available data) and were reported with Epiduo Forte 0.3%/2.5% gel in vehicle-controlled Phase 3 clinical study (see Table 1).

Table 1: Adverse reactions

System Organ Class	Frequency	Adverse Reactions
Eye disorders	Uncommon	Erythema of eyelid
	Not known*	Eyelid oedema
Immune system	Not known*	Anaphylactic reaction
Nervous system disorders	Uncommon	Paresthesia (tingling at application site)
Respiratory, thoracic and mediastinal disorders	Not known*	Throat tightness, dyspnea
Skin and subcutaneous tissue disorders	Common	Atopic dermatitis, eczema, skin burning sensation, skin irritation, erythema, skin exfoliation (scaling)
	Uncommon	Dry skin, pruritus, rash
	Not known*	Allergic contact dermatitis, swelling face, pain of skin (stinging pain) and blisters (vesicles), skin discolouration, (hyperpigmentation or hypopigmentation), urticaria, application site burn **

*Post-marketing surveillance data reported since the global launch of Epiduo 0.1%/2.5% gel, from a population of unknown size

**Most of the cases of "application site burn" were superficial burns but cases with second degree burn or severe burn reactions have been reported.

Skin-related adverse events were more frequent with Epiduo Forte 0.3%/2.5% gel than Epiduo gel (Adapalene 0.1% / Benzoyl peroxide 2.5%) as compared to vehicle. In the pivotal study (see section 5.1), 9.2% of subjects in the combined population treated with Epiduo Forte 0.3%/2.5% gel had skin-related adverse events and 3.7% in the population treated with Epiduo gel compared to Vehicle Gel group (2.9%).

If skin irritation appears after application of Epiduo Forte, the intensity is generally mild or moderate, with local tolerability signs and symptoms (erythema, dryness, scaling, burning and pain of skin (stinging pain) peaking during the first week and then subsiding spontaneously.

In addition to some of the above, other adverse drug reactions were reported with Epiduo gel (Adapalene 0.1% / Benzoyl peroxide 2.5%), the previously approved fixed combination of adapalene and benzoyl peroxide:

- Clinical trials:

Other adverse drug reactions reported in clinical trials with Epiduo gel are irritative contact dermatitis (common) and sunburn (uncommon).

Reporting of suspected adverse reactions

Reporting suspected adverse reactions after authorisation of the medicinal product is important. It allows continued monitoring of the benefit/risk balance of the medicinal product. Any suspected adverse events should be reported to the Ministry of Health according to the National Regulation by using an online form_ <https://sideeffects.health.gov.il/>

4.9 Overdose

Epiduo Forte 0.3%/2.5% gel is for once-daily cutaneous use only. Excessive application of Epiduo Forte 0.3%/2.5% gel may result in severe irritation. In this event, discontinue use and wait until the skin has recovered. In case of accidental ingestion, appropriate symptomatic measures should be taken.

5. Pharmacological properties

5.1 Pharmacodynamic properties

Pharmacotherapeutic group: anti-acne preparations for topical use, ATC code: D10AD53

Mechanism of action and pharmacodynamic effects

Epiduo Forte 0.3%/2.5% gel combines two active substances, which act through different, but complementary, mechanisms of action.

– **Adapalene:** Adapalene is a chemically stable, naphthoic acid derivative with retinoid-like activity. Biochemical and pharmacological profile studies have demonstrated that adapalene acts in the pathology of *Acne vulgaris*: it is a potent modulator of cellular differentiation and keratinisation and it has anti-inflammatory properties. Mechanistically, adapalene binds to specific retinoic acid nuclear receptors. Current evidence suggests that topical adapalene normalizes the differentiation of follicular epithelial cells resulting in decreased microcomedone formation. Adapalene inhibits the chemotactic (directional) and chemokinetic (random) responses of human polymorphonuclear leucocytes in *in vitro* assay models; it also inhibits the metabolism of arachidonic acid to inflammatory mediators. *In vitro* studies have shown inhibition of the AP-1 factors and the inhibition of the expression of toll like receptors 2. This profile suggests that the cell mediated inflammatory component of acne is reduced by adapalene.

– **Benzoyl peroxide:** Benzoyl peroxide has been shown to have antimicrobial activity; particularly against *Cutibacterium acnes*, which is abnormally present in the acne-affected pilosebaceous unit. The mechanism of action of Benzoyl peroxide has been explained by its highly lipophilic activity, enabling its penetration through the epidermis into bacterial and keratinocyte cell membranes of the pilosebaceous unit. Benzoyl peroxide is recognized as a very effective broad-spectrum antibacterial agent in the treatment of acne vulgaris. It has been demonstrated to exert bactericidal effect by generating free radicals that oxidize proteins and other essential cellular components in the bacterium wall. The minimum inhibitory concentration of benzoyl peroxide is bactericidal and has demonstrated effectiveness on antibiotic-sensitive and antibiotic-resistant *C. acnes* strains. Additionally benzoyl peroxide has demonstrated exfoliative and keratolytic activities.

Clinical efficacy of Epiduo in patients aged 12 years and older

The safety and efficacy of Epiduo Forte 0.3%/2.5% gel applied once daily for the treatment of acne vulgaris were assessed in a 12-week, multicenter, randomized, double-blind, controlled clinical study, comparing Epiduo Forte 0.3%/2.5% gel to the gel vehicle in 503 acne patients. In this study, 217 patients were treated with Epiduo Forte 0.3%/2.5% gel, 217 patients with adapalene 0.1% / benzoyl peroxide 2.5% gel and 69 patients with the Vehicle gel.

The efficacy criteria were:

- Success rate, defined as the percent of subjects who were rated 'Clear' or 'Almost Clear' at Week 12 with at least a two-grade improvement based on the Investigator's Global Assessment (IGA). An IGA score of 'Clear' corresponded to clear skin with no inflammatory or non-inflammatory lesions. An IGA score of 'Almost Clear' corresponded to a few scattered comedones and a few small papules.
- Mean absolute change from baseline at Week 12 in both inflammatory and non-inflammatory lesion counts.

At Baseline, 50% of enrolled patients had acne severity assessed as "moderate" (IGA=3) and 50% had scores of "severe" (IGA=4). In the overall study population, up to two nodules were allowed. For lesion counts, subjects had an average of 98 total lesions (range: 51-226), of which the mean number of inflammatory lesions was 38 (range: 20-99) and the mean number of non-inflammatory lesions was 60 (range: 30-149). The age of the patients ranged from 12 to 57 years (mean age: 19.6 years), with 273 (54.3%) patients 12 to 17 years of age. A similar number of males (47.7%) and females (52.3%) were enrolled.

In this pivotal study, 55.2% of patients in the severe stratum had truncal acne. The patients treated the face and other acne affected areas on the trunk as needed once daily in the evening.

Statistical analyses were performed to compare and interpret study results in a stepwise manner:

- Epiduo Forte 0.3%/2.5% gel versus Vehicle gel in the overall population of patients with moderate and severe acne (IGA=3 and IGA=4).
- Epiduo Forte 0.3%/2.5% gel versus Vehicle gel in the subgroup of patients with severe acne (IGA=4).

The efficacy results are shown in Table 2 for the combined moderate and severe acne populations.

Table 2: Clinical efficacy in the overall population: patients with moderate and severe acne vulgaris at Week 12 (combined IGA = 3 and 4, MI, ITT population)

Efficacy Parameters	Epiduo Forte 0.3%/2.5% Gel (N=217)	Adapalene 0.1%/benzoyl peroxide 2.5% Gel (N=217) ^a	Vehicle Gel (N=69)
Success rate (minimum 2-grade improvement and IGA "clear" or "almost clear")	33.7% ^b	27.3%	11.0%
Change in Inflammatory Lesions, Mean absolute (percent) reduction	27.8 ^b (68.7%)	26.5 (69.3%)	13.2 (39.2 %)
Change in Non-inflammatory Lesions, Mean absolute (percent) reduction	40.5 ^b (68.3 %)	40.0 (68.0 %)	19.7 (37.4 %)

MI= Multiple Imputation; ITT= Intent-to-treat

- a) This study was not designed or powered to compare formally the efficacy of Epiduo Forte 0.3%/2.5% to the lower strength Adapalene 0.1% / Benzoyl peroxide 2.5% , nor to compare the lower strength Adapalene 0.1% / Benzoyl peroxide 2.5% to the Vehicle gel
- b) p<0.001 vs Vehicle

Results of primary efficacy analyses in the severe acne population are shown in Table 3.

Table 3: Clinical efficacy in patients with severe acne vulgaris (IGA = 4, MI, ITT population)

Efficacy Parameters	Epiduo Forte 0.3%/2.5% Gel (N=106)	Adapalene 0.1%/ benzoyl peroxide 2.5% Gel (N=112)	Vehicle Gel (N=34)
Success Rate (minimum 2-grade improvement and IGA "clear" or "almost clear")	31.9% ^a	20.5%	11.8%
Change in Inflammatory Lesions, Mean absolute (percent) reduction	37.3 ^b (74.4%)	30.2 (68%)	14.3 (33.0%)
Change in Non-inflammatory Lesions, Mean absolute (percent) reduction	46.3 ^b (72.1%)	43.9 (68.4%)	17.8 (30.8%)

MI= Multiple Imputation; ITT= Intent-to-treat

- a) p=0.029 vs Vehicle
- b) p<0.001 vs Vehicle

Adapalene 0.1% / benzoyl peroxide 2.5% gel was included in this trial as a reference therapy. In subjects graded as "moderate" (IGA Grade 3), Epiduo Forte 0.3%/2.5% gel showed no efficacy advantage compared with the reference therapy. In the analysis in subjects graded as "severe" (IGA Grade 4), Epiduo Forte 0.3%/2.5% gel achieved a greater efficacy over vehicle with a treatment difference of 20.1% (31.9% vs 11.8%; 95% CI: [6.0%, 34.2%]), p=0.029), whereas the reference therapy did not (treatment difference vs vehicle of 8.8%).

The effect of Epiduo Forte 0.3%/2.5% gel on acne scarring was investigated in the OSCAR study. This was a multi-center, randomized, investigator-blinded, vehicle-controlled trial using intra-individual comparison (right half-face vs. left half-face) investigating male and female subjects aged 16 to 35 years (n=67) with moderate to severe facial acne vulgaris, with an average mean number of acne lesions of 40 acne lesions (18 inflammatory lesions, 22 non-inflammatory lesions) on each side. The vast majority of subjects had a global moderate severity of acne (93%). Both sides were well-balanced regarding the acne lesions, the severity of acne scars were 12 scars on each side with a majority of 2-4 mm scars. Majority of subjects had a globally mild (63%) severity of scars and about 30% had moderate severity.

Male or female subjects aged 16 to 35 years inclusive and with skin phototype of I to IV on Fitzpatrick's scale were included in this study.

The enrolled population were mainly females (65.7%), and most subjects were categorized as mostly white by race (86.6%) and rest Asians (13.4%), ethnicity was not captured. The most frequent skin phototypes were II (47.8%) and III (34.3%) and rest IV (13.4%) and I (4.5%).

All eligible subjects were randomized to receive Epiduo Forte 0.3%/2.5% on one half of the face and vehicle gel on the other, once daily at night, for 24 weeks. The primary efficacy endpoint was atrophic acne scar count per half-face at Week 24.

The primary endpoint analysis showed that drug therapy reduced the total number of acne scars (see Table 4).

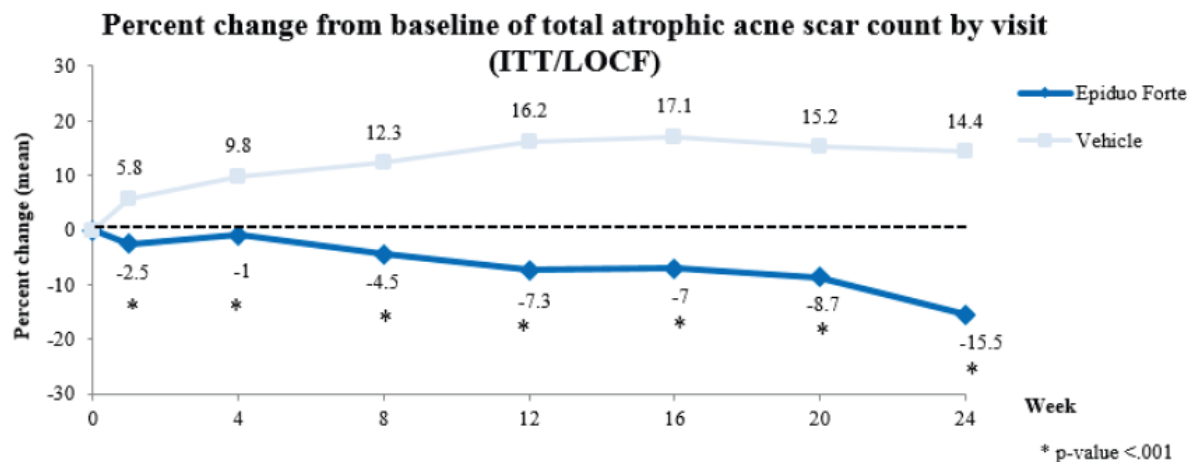
Table 4: Total acne scars (ITT/LOCF)

Total acne scars (ITT/LOCF)	Epiduo Forte 0.3%/2.5% gel	Vehicle gel	Treatment difference	Statistical result
Mean ±SD	9.5 ± 5.5	13.3 ± 7.4	-3.7 ± 4.4	p<0.0001
Median	8.0	13.0	-3.0	
(Q1, Q3)	(6.0, 12.0)	(8.0, 19.0)	(-7.0, 0.0)	
(Min, Max)	(0, 27)	(0, 36)	(-16, 3)	

Epiduo Forte 0.3%/2.5% gel primarily reduced scars of 2-4 mm size (mean Epiduo Forte 0.3%/2.5% gel 9.0 ± 5.4; mean Vehicle gel 12.1 ± 7.0; mean treatment difference vs. vehicle -3.1 ± 4.1), while the reduction in scars of >4 mm was smaller (mean Epiduo Forte 0.3%/2.5% gel 0.6 ± 0.8; mean Vehicle gel 1.2 ± 1.9; mean treatment difference vs. vehicle -0.6 ± 1.5).

Figure 1 shows the percent change of total atrophic scars by visit for the Epiduo Forte 0.3%/2.5% gel and vehicle face halves, respectively.

Figure 1



* nominal p-value, not adjusted for multiple testing

5.2 Pharmacokinetic properties

Absorption

A pharmacokinetic study was conducted with Epiduo Forte 0.3%/2.5% gel in 26 adult and adolescent subjects (12 to 33 years of age) with severe acne vulgaris. The subjects were treated with once-daily applications on all potentially affected areas during a 4 week period with, on average, 2.3 grams/day (range: 1.6-3.1 grams/day) of Epiduo Forte 0.3%/2.5% gel applied as a thin layer to the face, shoulders, upper chest and upper back. After 4 weeks of treatment, 16 subjects (62%) had quantifiable adapalene plasma concentrations above the limit of quantification (LOQ of 0.1 ng/mL), with a mean C_{max} of 0.16 ± 0.08 ng/mL and a mean AUC_{0-24h} of 2.49 ± 1.21 ng.h/mL. The most exposed subject had adapalene C_{max} and AUC_{0-24h} values of 0.35 ng/mL and 6.41 ng.h/mL, respectively.

Pharmacokinetics studies conducted with both Epiduo and Epiduo Forte 0.3%/2.5% gels have evidenced that the transdermal absorption of adapalene is not affected benzoyl peroxide.

The percutaneous penetration of benzoyl peroxide is low; when applied on the skin, it is completely converted into benzoic acid which is rapidly eliminated.

5.3 Preclinical safety data

Preclinical data reveal no special hazard for humans based on conventional studies of safety pharmacology,

repeated dose toxicity, genotoxicity, phototoxicity or carcinogenicity.

Reproductive toxicology studies with adapalene have been performed by the oral and dermal routes of administration in the rat and rabbit. A teratogenic effect has been demonstrated at high systemic exposures (oral doses from 25 mg/kg/day). At lower exposures (dermal dose of 6 mg/kg/day), changes in the numbers of ribs or vertebrae were seen.

Animal studies performed with Epiduo or with Epiduo Forte 0.3%/2.5% gel include local tolerance studies and dermal repeat-dose toxicity studies in rat, dog and minipig up to 13 weeks and demonstrated local irritation and a potential for sensitisation, as expected for a combination containing benzoyl peroxide. Systemic exposure to adapalene following repeat dermal application of the fixed combination in animals is very low, consistent with clinical pharmacokinetic data. Benzoyl peroxide is rapidly and completely converted to benzoic acid in the skin and after absorption is eliminated in the urine, with limited systemic exposure.

Reproductive toxicity of adapalene was tested by the oral route in rats for fertility.

There were no adverse effects upon reproductive performance and fertility, F1 litter survival, growth and development to weaning, and subsequent reproductive performance following treatment with adapalene oral at doses up to 20 mg/kg/day.

A reproductive and developmental toxicity study conducted in rats exposed groups to oral doses of benzoyl peroxide of up to 1000 mg/kg/day (5 mL/kg) showed that benzoyl peroxide did not induce teratogenicity or effects on reproductive function at doses up to 500 mg/kg/day.

Environmental Risk Assessment (ERA):

Environmental risk assessment studies have shown that adapalene has the potential to be very persistent, and toxic to the environment (see section 6.6).

Environmental risk assessment studies have shown that adapalene may pose a risk for aquatic compartment.

6. Pharmaceutical particulars

6.1 List of excipients

Glycerin

Propylene glycol

Simulgel 600 PHA

Poloxamer 124

Edetate disodium

Docusate sodium

Purified water

6.2 Incompatibilities

Not applicable.

6.3 Shelf life

The expiry date of the product is indicated on the packaging materials.

After first opening, the gel should be used within 3 months.

6.4 Special precautions for storage

Store below 25°C.

6.5 Nature and contents of container

15g, 30g, and 60g round airless pump made of polypropylene (PP). Wax actuator is made of polypropylene.

15g piston is made of high density polyethylene (HDPE); 30g and 60g piston is made of high density polyethylene (HDPE) and very low density polyethylene (VLDPE).

Not all packs may be marketed.

6.6 Special precautions for disposal and other handling

This medicinal product may pose a risk to the environment (See section 5.3).

Any unused medicinal product or waste material should be disposed of in accordance with local requirements.

7. Manufacturer: Laboratoires Galderma, Z.I. Montdesir 74 540 Alby sur-Cheran, France.

8. Registration holder: A.M.I. Medical Technologies Limited, Hanagar 22, Hod Hasharon 4501317, Israel.

Registration number: 170-29-36683-99

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