Grünenthal GmbH
Zieglerstraße 6
52078 Aachen
Germany

GRÜNENTHAL

Certificate of Analysis

Product: Transtec TW 35 mcg patch a 5
Batch no.: 71185C203
Spec. no.: 2515

Manufacturing date: 09/2015
Expiry date: 09/2018

Tests [Methods]	Limits	Results
Description		
Dosage form	patch	patch
Shape 1	rectangular	rectangular
Shape 2	with rounded corners	with rounded corners
Character 1	aluminised removable protective layer	aluminised removable protective layer
Character 2	skin coloured backing layer	skin coloured backing layer
Character 3	central reservoir with drug loaded	central reservoir with drug loaded
TDS areas		
Reservoir:	50 x 50 mm ± 0.5 mm	complies
Skin coloured web:	72 x 72 mm ± 2 mm	complies
Printing	consistent and legible	complies
Identification [liquid chromatography] The ratio of the retention times of the peaks of buprenorphine in sample and in standard should range between 0.95 - 1.05	positive	positive
Adhesion strength	3.0 – 70.0 N/TDS	17.2 N/TDS
Release strength	10 – 500 cN/TDS	69 cN/TDS
Tightness of pouches	tight	complies

Grünenthal GmbH
Zieglerstraße 6
52078 Aachen
Germany

Certificate of Analysis

Product: Transtec TW 35 mcg patch a 5
Batch no.: 71185C203
Spec. no.: 2515

Manufacturing date: 09/2015
Expiry date: 09/2018

Tests [Methods]	Limits	Results
Purity [Degradation products related to buprenorphine, liquid chromatography]		
Impurity B (Norbuprenorphine)	NMT 0.5 %	0.13 %
Buprenorphine-N-oxide	NMT 0.5 %	< 0.10 %
Any other degradation product	NMT 0.5 %	< 0.05 %
Sum of degradation products	NMT 1.5 %	0.13 %
Residual solvents [gas chromatography]		
Toluene	NMT 0.002 %	< 0.001 %
Isopropanol	NMT 0.002 %	< 0.001 %
Ethylacetate	NMT 0.07 %	0.01 %
n-Heptane	NMT 0.05 %	0.00 %
Acetylacetone	NMT 0.02 %	< 0.00 %
Ethanol	NMT 0.05 %	0.00 %
Assay [Buprenorphine, liquid chromatography]		
Limits:	18.4 – 21.6 mg / TDS (92 - 108 % L.S.)	20.4 mg / TDS (102.0 % L.S.)
Uniformity of content of single-dose preparations [Buprenorphine, liquid chromatography, according to Ph. Eur., 2.9.6, Test C]		
Mean: 90 – 110% Single value: 75 – 125%	complies	complies

Grünenthal GmbH
Zieglerstraße 6
52078 Aachen
Germany

GRUNENTHAL

Certificate of Analysis

Product: Transtec TW 35 mcg patch a 5
Batch no.: 71185C203
Spec. no.: 2515

Manufacturing date: 09/2015
Expiry date: 09/2018

Tests [Methods]	Limits	Results
Dissolution (in-vitro release)		
0.5 h	NMT 7.0 mg/TDS NMT 35 %	5.8 mg/TDS 29 %
2 h	6.0 – 14.0 mg/TDS 30 – 70 %	12.1 mg/TDS 60 %
24 h	NLT 16.0 mg/TDS NLT 80 %	20.0 mg/TDS 100 %
Microbial contamination* [according to Ph.Eur., 2.6.12 and 2.6.13]		
Total aerobic microbial count (TAMC)	NMT 10^2 CFU/TDS	periodically tested once a year
Total combined yeasts/moulds count (TYMC)	NMT 10^1 CFU/TDS	periodically tested once a year
Pseudomonas aeruginosa on 1 TDS	negative	periodically tested once a year
Staphylococcus aureus on 1 TDS	negative	periodically tested once a year

*periodically tested once a year

10.11.2015
GRT Release Office/st

Dr. Ralf Maucher
Qualified Person

Grünenthal GmbH
Zieglerstraße 6
52078 Aachen
Germany

GRUNENTHAL

Manufacturer's Batch Certificate

Data importing country

Material name:	Transtec TW 35 mcg patch a 5
Importing country:	Chile
Marketing authorization number	F-13.396/08

Data manufacturer

Product:	Transtec TW 35 mcg patch a 5 CHL
Package size and type:	5 patches, pouches
Dosage form	patches
Batch no.:	71185C203
Manufacturing date:	09/2015
Expiry date:	09/2018

Material name	Manuf. stage	Batch no.	Name and address manufacturer
Transtec TW 35 mcg patch a 5	Packing	71185C203	LTS Lohmann Therapie-Systeme AG Lohmannstraße 2 56626 Andernach Germany
Transtec 35 mcg patch	Bulk	71185C2	LTS Lohmann Therapie-Systeme AG Lohmannstraße 2 56626 Andernach Germany

Comments/remarks

Deviation(s): no

I hereby certify that the above information is authentic and accurate. This batch of product has been fabricated/manufactured, including packaging and quality control at the above mentioned site(s) in full compliance with the GMP requirements of the local Regulatory Authority and with the specifications in the Marketing Authorisation of the importing country. The batch processing, packaging and analysis records were reviewed and found to be in compliance with GMP.

10.12.2015

Dr. Ralf Maucher
(Qualified Person)

Grünenthal GmbH
Zieglerstraße 6
52078 Aachen
Germany

GRÜNENTHAL

Certificate of Analysis

Product: Transtec TW 35 mcg patch a 5
Batch no.: 70266C203
Spec. no.: 2515

Manufacturing date: 02/2016
Expiry date: 01/2019

Tests [Methods]	Limits	Results
Description		
	Rectangled patch with rounded corners on an aluminised rigid removable protective layer with a skin coloured backing layer. In the centre a drug loaded reservoir is posted.	Rectangled patch with rounded corners on an aluminised rigid removable protective layer with a skin coloured backing layer. In the centre a drug loaded reservoir is posted.
TDS areas		
Reservoir:	50 x 50 mm ± 0.5 mm	complies
Skin coloured web:	72 x 72 mm ± 2 mm	complies
Printing	Consistent and legible	complies
Identification		
Buprenorphine [liquid chromatography]	The ratio of the retention times of the peaks of buprenorphine in sample and in standard should range between 0.95 - 1.05	positive
Adhesion strength	3.0 – 70.0 N/TDS	16.7 N/TDS
Release strength	10 – 500 cN/TDS	65 cN/TDS
Tightness of pouches	tight	complies
Purity Degradation products related to buprenorphine [liquid chromatography]		
Impurity B (Norbuprenorphine)	NMT 0.5 %	< 0.1 %
Buprenorphine-N-oxide	NMT 0.5 %	< 0.1 %
Any other degradation product	NMT 0.5 %	< 0.1 %
Sum of degradation products	NMT 1.5 %	< 0.1 %

Grünenthal GmbH
Zieglerstraße 6
52078 Aachen
Germany

GRUNENTHAL

Certificate of Analysis

Product: Transtec TW 35 mcg patch a 5
Batch no.: 70266C203
Spec. no.: 2515

Manufacturing date: 02/2016
Expiry date: 01/2019

Tests [Methods]	Limits	Results
Residual solvents [gas chromatography]		
Toluene	NMT 0.002 %	< 0.001 %
Isopropanol	NMT 0.002 %	< 0.001 %
Ethylacetate	NMT 0.07 %	0.01 %
n-Heptane	NMT 0.05 %	0.00 %
Acetylacetone	NMT 0.02 %	< 0.00 %
Ethanol	NMT 0.05 %	0.00 %
Assay [liquid chromatography]		
Buprenorphine (n=10)	18.4 – 21.6 mg/TDS 92 – 108 % L.S.	20.6 mg/TDS 103 % L.S.
Uniformity of dosage units [according to Ph.Eur., 2.9.40]		
Buprenorphine [liquid chromatography]		
Acceptance value AV:	NMT 15.0 %	3.3 %
If AV_{10} exceeds 15.0 % another 20 patches are tested and AV_{30} is calculated		
Acceptance value AV_{30} NMT 15.0 % and no individual content outside (0.75)·(M)-(1.25)·(M)	NMT 15.0 % and no individual content outside (0.75)·(M)-(1.25)·(M)	not applicable

Grünenthal GmbH
Zieglerstraße 6
52078 Aachen
Germany

GRUNENTHAL

Certificate of Analysis

Product: Transtec TW 35 mcg patch a 5
Batch no.: 70266C203
Spec. no.: 2515

Manufacturing date: 02/2016
Expiry date: 01/2019

Tests [Methods]	Limits	Results
Dissolution (in-vitro release, n=6)		
0.5 h	NMT 7.0 mg/TDS NMT 35 %	5.8 mg/TDS 29 %
2 h	6.0 – 14.0 mg/TDS 30 – 70 %	12.2 mg/TDS 61 %
24 h	NLT 16.0 mg/TDS NLT 80 %	20.0 mg/TDS 100 %
Microbial contamination* [according to Ph.Eur. 2.6.12 and 2.6.13]		
Total aerobic microbial count (TAMC)	NMT 10^2 CFU/TDS	periodically tested once a year
Total combined yeasts/moulds count (TYMC)	NMT 10^1 CFU/TDS	periodically tested once a year
Pseudomonas aeruginosa	absent	periodically tested once a year
Staphylococcus aureus	absent	periodically tested once a year

*periodically tested once a year

17.05.2016
GRT Release Office/mk

Dr. Ralf Maucher
Qualified Person

Grünenthal GmbH
Zieglerstraße 6
52078 Aachen
Germany

GRÜNENTHAL

Manufacturer's Batch Certificate

Data importing country

Material name:	Transtec TW 35 mcg patch a 5
Importing country:	Chile
Marketing authorization number	F-13.396/08

Data manufacturer

Product:	Transtec TW 35 mcg patch a 5 CHL
Package size and type:	5 patches, pouches
Dosage form	patches
Batch no.:	70266C203
Manufacturing date:	02/2016
Expiry date:	01/2019

Material name	Manuf. stage	Batch no.	Name and address manufacturer
Transtec TW 35 mcg patch a 5	Packing	70266C203	LTS Lohmann Therapie-Systeme AG Lohmannstraße 2 56626 Andernach Germany
Transtec 35 mcg patch	Bulk	70266C	LTS Lohmann Therapie-Systeme AG Lohmannstraße 2 56626 Andernach Germany

Comments/remarks

Deviation(s): no

I hereby certify that the above information is authentic and accurate. This batch of product has been fabricated/manufactured, including packaging and quality control at the above mentioned site(s) in full compliance with the GMP requirements of the local Regulatory Authority and with the specifications in the Marketing Authorisation of the importing country. The batch processing, packaging and analysis records were reviewed and found to be in compliance with GMP.

17.05.2016

Dr. Ralf Maucher
(Qualified Person)