



# **Petroleum Products Specifications Amendment Regulations 2006**

Anand Satyanand, Governor-General

## **Order in Council**

At Wellington this 21st day of November 2006

Present:

The Right Hon Helen Clark presiding in Council

Pursuant to section 35 of the Ministry of Energy (Abolition) Act 1989, His Excellency the Governor-General, acting on the advice and with the consent of the Executive Council, makes the following regulations.

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7

**New Schedule 3 substituted in principal regulations**

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**Regulations****1 Title**

These regulations are the Petroleum Products Specifications Amendment Regulations 2006.

**2 Commencement**

These regulations come into force on 1 January 2007.

**3 Principal regulations amended**

These regulations amend the Petroleum Products Specifications Regulations 2002.

**4 Calculating pool average**

- (1) Regulation 7(1) is amended by omitting “subclauses (2) to (11)” and substituting “this regulation”.
- (2) Regulation 7(4)(d) is amended by omitting “subclauses (6)(a) and (b) and” and substituting “subclause”.
- (3) Regulation 7(4)(e) is amended by omitting “subclauses (6)(c) and” and substituting “subclause”.
- (4) Regulation 7(6) is revoked.
- (5) Regulation 7(11) is revoked.

**5 New Schedule 1 substituted**

Schedule 1 is revoked and the schedule set out in Schedule 1 of these regulations is substituted.

**6 New Schedule 2 substituted**

Schedule 2 is revoked and the schedule set out in Schedule 2 of these regulations is substituted.

**7 New Schedule 3 substituted**

Schedule 3 is revoked and the schedule set out in Schedule 3 of these regulations is substituted.

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## Schedule 1

r 5

### New Schedule 1 substituted in principal regulations

## Schedule 1

rr 4, 6, 7, 8

### Requirements for regular grade petrol

Property	Effective from 1 January 2007	Effective from 1 January 2008	Test method
Research Octane Number (RON)	91.0 minimum	91.0 minimum	ASTM D2699
Motor Octane Number (MON)	82.0 minimum	82.0 minimum	ASTM D2700
Colour	Not to be mistaken for water	Not to be mistaken for water	Visual
Percentage volume evaporated at 70°C (E70)	22 minimum 48 maximum	22 minimum 48 maximum	ASTM D86
Percentage volume evaporated at 100°C (E100)	45 minimum 70 maximum	45 minimum 70 maximum	ASTM D86
Percentage volume evaporated at 150°C (E150)	75 minimum	75 minimum	ASTM D86
End point (°C)	210 maximum	210 maximum	ASTM D86
Residue (percentage volume)	2 maximum	2 maximum	ASTM D86
Flexible Volatility Index [VP (kPa) + (0.7 × E70)]	115.0 maximum	115.0 maximum	ASTM D86 and ASTM D5191
Vapour Pressure <sup>1</sup> (VP) (kPa) Summer: 1 December – 31 March; Autumn: 1 April – 31 May; Winter: 1 June – 31 August; Spring: 1 September – 30 November	Maxima: Auckland and Northland: 65 kPa summer; 80 kPa autumn and spring; 90 kPa winter; Rest of North Island: 70 kPa summer; 80 kPa autumn and spring; 90 kPa winter; South Island: 75 kPa summer; 85 kPa autumn and spring; 95 kPa winter Minimum: 45 kPa all year	Maxima: Auckland and Northland: 65 kPa summer; 80 kPa autumn and spring; 90 kPa winter; Rest of North Island: 70 kPa summer; 80 kPa autumn and spring; 90 kPa winter; South Island: 75 kPa summer; 85 kPa autumn and spring; 95 kPa winter Minimum: 45 kPa all year	ASTM D5191
Copper strip corrosion (3 hours at 50°C)	Class 1 maximum	Class 1 maximum	ASTM D130
Sulphur <sup>2</sup> (mg/kg)	150 maximum	50 maximum	IP 497 or ASTM D5453
Existent gum (solvent washed) (mg/100 ml)	5 maximum	5 maximum	ASTM D381

<sup>1</sup> Petrol that complies with the previous season's quality, and that is stored in a filling station tank to which fewer than 3 deliveries of petrol have been made since 6 weeks before the beginning of the season, is regarded as complying with this specification.

<sup>2</sup> Ultimate requirement for "sulphur-free" petrol of 10 ppm maximum sulphur content.

**Schedule 1—continued**

<b>Property</b>	<b>Effective from 1 January 2007</b>	<b>Effective from 1 January 2008</b>	<b>Test method</b>
Oxidation stability induction period (minutes)	360 minimum	360 minimum	ASTM D525
Lead (mg/l)	5 maximum	5 maximum	IP 224
Benzene (percentage volume)	1 maximum	1 maximum	ASTM D5580
Total aromatic compounds (including benzene) (percentage volume)	42 maximum pool average and 45 maximum cap	42 maximum pool average and 45 maximum cap	ASTM D5580
Oxygenates <sup>3</sup> (percentage volume)	1 maximum for total oxygenates, with the exception of ethanol; 10 maximum for ethanol	1 maximum for total oxygenates, with the exception of ethanol; 10 maximum for ethanol	ASTM D4815
Olefins (percentage volume)	18 maximum	18 maximum	ASTM D1319
Manganese <sup>4</sup> (mg/l)	2.0 maximum	2.0 maximum	ASTM D3831
Phosphorus (mg/l)	1.3 maximum	1.3 maximum	ASTM D3231

<sup>3</sup> The sale of ethanol-blended petrol must be accompanied by consumer information about the possible vehicle maintenance requirements that may result from using ethanol blends.

<sup>4</sup> To be reviewed by 2010 (indicative time frame).

## Schedule 2

r 6

### New Schedule 2 substituted in principal regulations

## Schedule 2

rr 4, 6, 7, 8

### Requirements for premium grade petrol

Property	Effective from 1 January 2007	Effective from 1 January 2008	Test method
Research Octane Number (RON)	95.0 minimum	95.0 minimum	ASTM D2699
Motor Octane Number (MON)	85.0 minimum	85.0 minimum	ASTM D2700
Colour	Not to be mistaken for water	Not to be mistaken for water	Visual
Percentage volume evaporated at 70°C (E70)	22 minimum 48 maximum	22 minimum 48 maximum	ASTM D86
Percentage volume evaporated at 100°C (E100)	45 minimum 70 maximum	45 minimum 70 maximum	ASTM D86
Percentage volume evaporated at 150°C (E150)	75 minimum	75 minimum	ASTM D86
End point (°C)	210 maximum	210 maximum	ASTM D86
Residue (percentage volume)	2 maximum	2 maximum	ASTM D86
Flexible Volatility Index [VP (kPa) + (0.7 × E70)]	115.0 maximum	115.0 maximum	ASTM D86 and ASTM D5191
Vapour Pressure <sup>5</sup> (VP) (kPa)	Maxima: Auckland and Northland: 65 kPa summer; 80 kPa autumn and spring; 90 kPa winter; Rest of North Island: 70 kPa summer; 80 kPa autumn and spring; 90 kPa winter; South Island: 75 kPa summer; 85 kPa autumn and spring; 95 kPa winter Minimum: 45 kPa all year	Maxima: Auckland and Northland: 65 kPa summer; 80 kPa autumn and spring; 90 kPa winter; Rest of North Island: 70 kPa summer; 80 kPa autumn and spring; 90 kPa winter; South Island: 75 kPa summer; 85 kPa autumn and spring; 95 kPa winter Minimum: 45 kPa all year	ASTM D5191
Summer: 1 December – 31 March; Autumn: 1 April – 31 May; Winter 1 June – 31 August; Spring: 1 September – 30 November			
Copper strip corrosion (3 hours at 50°C)	Class 1 maximum	Class 1 maximum	ASTM D130
Sulphur <sup>6</sup> (mg/kg)	150 maximum	50 maximum	IP 497 or ASTM D5453
Existent gum (solvent washed) (mg/100 ml)	5 maximum	5 maximum	ASTM D381

<sup>5</sup> Petrol that complies with the previous season's quality, and that is stored in a filling station tank to which fewer than 3 deliveries of petrol have been made since 6 weeks before the beginning of the season, is regarded as complying with this specification.

<sup>6</sup> Ultimate requirement for "sulphur-free" petrol of 10 ppm maximum sulphur content.

**Schedule 2—continued**

<b>Property</b>	<b>Effective from 1 January 2007</b>	<b>Effective from 1 January 2008</b>	<b>Test method</b>
Oxidation stability induction period (minutes)	360 minimum	360 minimum	ASTM D525
Lead (mg/l)	5 maximum	5 maximum	IP 224
Benzene (percentage volume)	1 maximum	1 maximum	ASTM D5580
Total aromatic compounds (including benzene) (percentage volume)	42 maximum pool average and 45 maximum cap	42 maximum pool average and 45 maximum cap	ASTM D5580
Oxygenates <sup>7</sup> (percentage volume)	1 maximum for total oxygenates, with the exception of ethanol; 10 maximum for ethanol	1 maximum for total oxygenates, with the exception of ethanol; 10 maximum for ethanol	ASTM D4815
Olefins (percentage volume)	18 maximum	18 maximum	ASTM D1319
Manganese <sup>8</sup> (mg/l)	2.0 maximum	2.0 maximum	ASTM D3831
Phosphorus (mg/l)	1.3 maximum	1.3 maximum	ASTM D3231

<sup>7</sup> The sale of ethanol-blended petrol must be accompanied by consumer information about the possible vehicle maintenance requirements that may result from using ethanol blends.

<sup>8</sup> To be reviewed by 2010 (indicative time frame).

## Schedule 3

r 7

## New Schedule 3 substituted in principal regulations

Schedule 3  
Requirements for diesel

rr 4, 6, 7, 8

Property	Effective from 1 January 2007	Effective from 1 January 2009	Test method
Density at 15°C (kg/m <sup>3</sup> )	820 minimum 850 maximum	820 minimum 850 maximum	ASTM D1298
Distillation – 95% volume recovered at (°C) (T95)	360 maximum	360 maximum	ASTM D86
Cetane	51 minimum cetane index or 51 minimum cetane number and 47 minimum cetane index	51 minimum cetane index or 51 minimum cetane number and 47 minimum cetane index	Cetane number: ASTM D613 Cetane index: ASTM D976
Water content (mg/kg)	200 maximum	200 maximum	ASTM D6304
Particulates (mg/l)	24 maximum	24 maximum	ASTM D6217
Colour (ASTM col- our)	3.0 maximum	3.0 maximum	ASTM D1500
Cloud Point (°C) – Summer; Cloud Point and Cold Filter Plug- ging Point (CFPP) (°C) – Winter <sup>9</sup> . Summer: 15 October – 14 April; Winter: 15 April – 14 October	Summer: +4 maxi- mum Cloud Point; Winter: +2 maximum Cloud Point and –6 maximum Cold Filter Plugging Point	Summer: +4 maxi- mum Cloud Point; Winter: +2 maximum Cloud Point and –6 maximum Cold Filter Plugging Point	Cloud Point: ASTM D5773 Cold Filter Plugging Point: IP 309
Sulphur <sup>10</sup> (mg/kg)	50 maximum	10 maximum	IP 497 or ASTM D5453
Polycyclic aromatic hydrocarbons (per- centage mass)	11 maximum	11 maximum	IP 391
Filter Blocking Ten- dency	2.5 maximum; fuel must be of acceptable filterability so that it is fit for common pur- poses	2.5 maximum; fuel must be of acceptable filterability so that it is fit for common pur- poses	IP 387 or ASTM D2068
Lubricity – HFRR wear scar diameter at 60°C (µm)	460 maximum	460 maximum	IP 450
Viscosity (mm <sup>2</sup> per second at 40°C)	2.0 minimum 4.5 maximum	2.0 minimum 4.5 maximum	ASTM D445
Oxidation Stability (g/m <sup>3</sup> )	25 maximum	25 maximum	ASTM D2274

<sup>9</sup> These are maximum criteria; cold flow properties of a fuel must be fit for common purposes in the region and the season in which it is sold. Diesel that complies with the previous season's quality, and that is stored in a filling station tank to which fewer than 3 deliveries of diesel have been made since 6 weeks before the beginning of the season, is regarded as complying with this specification. Sales for marine use may be summer grade at any time of the year.

<sup>10</sup> The limit for sulphur does not apply to sale for marine use.

**Schedule 3**—*continued*

<b>Property</b>	<b>Effective from 1 January 2007</b>	<b>Effective from 1 January 2009</b>	<b>Test method</b>
Carbon residue (on 10% distillation residue) (percentage mass)	0.25 maximum	0.25 maximum	ASTM D4530
Copper strip corrosion (3 hours at 50°C)	Class 1 maximum	Class 1 maximum	ASTM D130
Ash (percentage mass)	0.01 maximum	0.01 maximum	ASTM D482
Flash point (°C)	61 minimum	61 minimum	ASTM D93

Diane Morcom,  
Clerk of the Executive Council.

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### Explanatory note

*This note is not part of the regulations, but is intended to indicate their general effect.*

These regulations come into force on 1 January 2007.

They amend the Petroleum Products Specifications Regulations 2002 (the **principal regulations**). The amendments remove expired provisions from regulation 7 and replace the 3 schedules of the principal regulations.

The new schedules remove the specifications for the periods that started on 1 September 2002 and 1 January 2004 and 2006, which have now expired. Outdated provisions have been removed from the schedules' footnotes. The schedules add specifications for the periods starting on 1 January 2007 and 2008 (for petrol), and 1 January 2007 and 2009 (for diesel).

The specifications for petrol (both regular and premium grade) remain unchanged for the periods starting on 1 January 2007 and 2008, except that—

- the maximum permitted sulphur level is reduced from 150 to 50 mg/kg (ppm) starting on 1 January 2008;
- one of the test methods for sulphur is changed;
- the maximum sulphur content that is ultimately required for “sulphur-free” petrol is now noted as 10 ppm (not the prior range of 10–15 ppm):



- the maximum manganese level is now to be reviewed by the later date of 2010 (noted as an indicative time frame).

The specifications for diesel remain unchanged for the periods starting on 1 January 2007 and 2009, except that—

- the maximum permitted sulphur level is reduced from 50 to 10 mg/kg (ppm) starting on 1 January 2009;
  - one of the test methods for sulphur is changed;
  - a maximum value of 2.5 is imposed on the Filter Blocking Tendency, with that maximum and the related test methods no longer being noted as “indicative for monitoring purposes”.
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Issued under the authority of the Acts and Regulations Publication Act 1989.

Date of notification in *Gazette*: 23 November 2006.

These regulations are administered by the Ministry of Economic Development.

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