

# Samsung ML-1610 refill

Before use, familiarize with the safety data on pages 6 and 7.

Take maximum care when using a screwdriver as a lever. Use eye protection and gloves to guard against injury due to accidental slippage.

Original supplies refillable with these instructions		
Part number	Description	Quoted page yield at 5% A4 coverage
ML-1610D1(E)	Starter cartridge (arrives with new machine)	1,000
ML-1610D2	Original cartridge	2,000

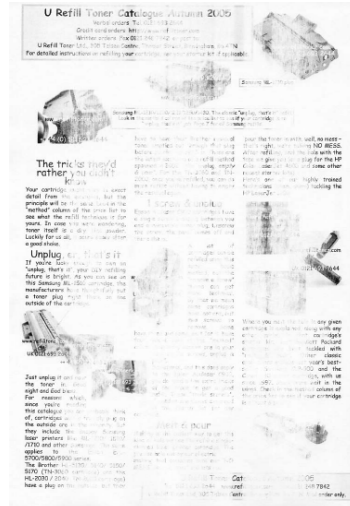
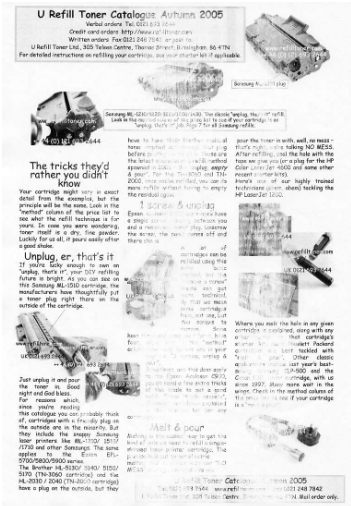
## Starter cartridge and original cartridge same for refilling purposes

The new machine arrives with a so-called "starter cartridge". It's the same as a normal cartridge for all practical purposes but has around half the amount of toner in and so gives half the yield.

You refill a starter cartridge in exactly the same way as a normal cartridge, but after refilling with our toner – hey presto – it becomes a normal (2,000 page) yield cartridge.

## When to refill

The machine leaves you guessing about when the cartridge might be empty. Typical fade-out due to lack of toner develops **progressively** as shown in these three prints.



As you can see, the faded area gets wider and more pronounced with each print, but even on the last very faded page, the print at the edges is still the same blackness as on the first print. If you take out the cartridge and give it a shake at this point, perfect print will return for a few more prints – but then the fade out will return again. This pattern of progressively widening fade out bands which can be temporarily cured by shaking is the hallmark of toner exhaustion.

## Weighing can confirm fade-out

If you've got some scales, an empty state can be confirmed by weight:

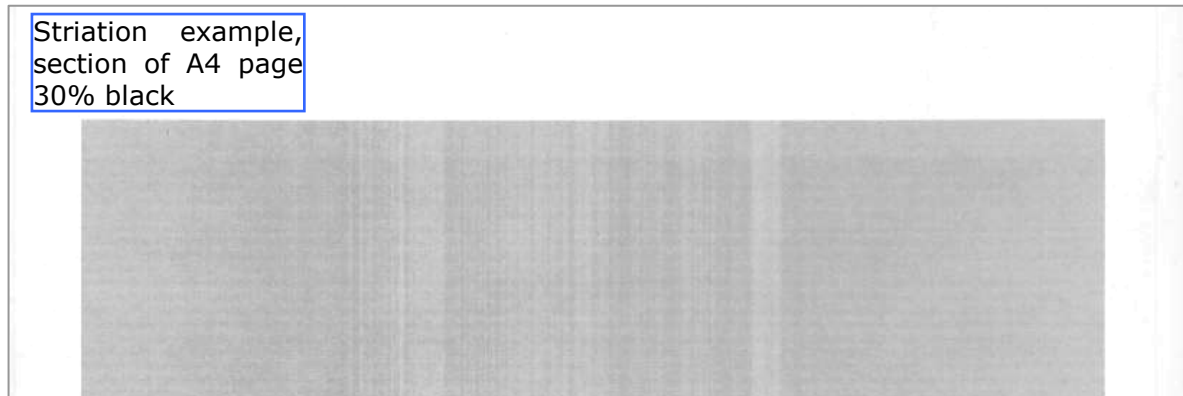
Empty cartridge weight after original use: 720g (add 5g per each additional refill – unless waste was emptied).

So if you're getting funny prints but the weight isn't close to 720g, then toner exhaustion isn't the culprit. It could be what we've christened "striation".

PTO >>>>

## “Striation” problem

Striation, which is caused by deposits on the doctor blade, shows up as mechanical-looking parallel white lines through your print. It's especially noticeable on solid blacks or grey shades, but in text it's easy to confuse with toner exhaustion.



**Top tip for avoiding striation – refill at the very first sign of toner fade out** (onset of striation is associated with trying to use up the dregs of any remaining toner).

Striation will not be cured by shaking the cartridge, although if the cartridge is on the verge of exhaustion and striating at the same time, it can be hard to see the wood for the trees. But if you're sure the cartridge has plenty of toner in and you're seeing something like the above on your greyscales, it's striation.

We were half way through the third refill when we first got striation from our starter cartridge. Original bought cartridges were less cooperative. Both cartridges tested showed striation at the end of the original toner life, but this could have been ameliorated by refilling at the first sign of fade out (whereas we were testing to total exhaustion).

Once treated for striation and refilled, we got two full refill lives until striation developed again.

We successfully refilled and ran out the starter cartridge 5 times, although this did involve treating for striation as necessary. Bear in mind that, sooner or later, all toner cartridges will develop print problems for any one of a number of reasons. At that point, they have to go to that great laser printer in the sky.

See page 4 to see how striation can be cured. We've simplified the process as much as possible, but it's more demanding than the toner refill itself.

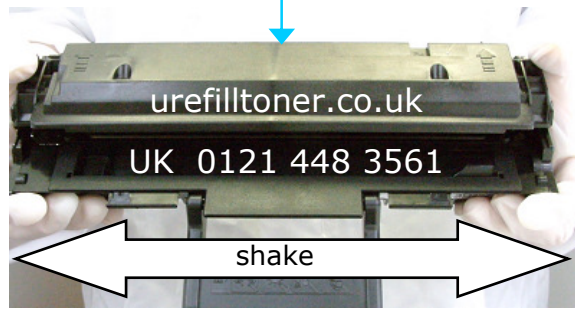
Striation in the ML-1610 cartridge is totally beyond our control, affecting original toner and refill toner alike. We cannot accept responsibility for occurrence of striation nor any consequent losses of toner.

All unused kits and bottles can be returned to us for a full refund.

## How to refill it

**Take maximum care when using a screwdriver as a lever. Use eye protection and gloves to guard against injury due to accidental slippage.**

1. Hold cartridge in position as shown with this edge closest to ceiling.



2. Shake cartridge vigorously from side to side for 30 seconds.
3. Find the 2 screws at end of cartridge shown, undo them.
4. Carefully lever off end plate.



5. Lever out plug. Slide screwdriver down side of plug to initiate movement.



6. Screw spout onto bottle and wrap sticky tape around join of spout to ensure no leakage of toner.
7. Hold cartridge at 45 degree angle with one hand. Use other hand for bottle.
8. Hold finger firmly over end of spout, shake bottle for 10 seconds.
9. Keeping bottle below horizontal, marry spout with hole. Up-end bottle and jam into hole.



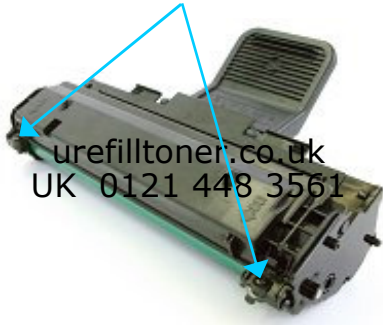
10. Wait 2 minutes.
11. Rotate toner bottle back down to horizontal position, disengaging from cartridge as you do so.
12. Most of toner will have gone in, but repeat steps 8, 9 and 10 to get last of toner in.
13. Push orange plug firmly in with handle of screwdriver.
14. Screw end plate back into position.
15. Shake cartridge gently from side to side to even out toner.
16. End.



## Cure the "striation" problem

You need a vacuum with the "hairy" attachment on. Only use the vacuum near a toner cartridge with the hairy attachment on and only use for cleaning stray toner powder, not for sucking up the bulk of any big piles of toner.

1. Undo 2 screws.



2. Hold cartridge upside down as shown, un hinge and separate waste collector unit.



3. Hold slit upwards to keep waste in.  
4. Shake out waste from waste unit straight into outside bin.  
5. Applying virtually no pressure, clean up inner surface of waste collector surfaces of waste unit by vacuuming with hairy vacuum attachment. Take care not to damage delicate catcher blade.  
6. Vacuum off outside surface of waste collector unit and leave to one side.  
7. Lever your toner plug out.  
8. Empty all toner from cartridge by shaking straight into outside bin.  
9. Vacuum off stray toner from all surfaces of cartridge using hairy attachment.



10. Undo 2 screws on doctor blade back plate.



11. Note position of spring shank in slot. Push spring shank round corner out of way  
12. Using 3mm screwdriver lift one end of plate slightly clear of locator plug.



13. Lift plate clear of locator plug at opposite end.  
14. Lift doctor blade vertically up and out of cartridge.

15. Clean stray toner from back of doctor blade with vacuum hairy attachment.

16. Wipe 2 surfaces thoroughly with absorbent paper.



Apply reasonable pressure to clean off deposits but be carefully not to bend doctor blade out of shape.

17. Check that spring shank is still round corner out of way. Slot doctor blade back into position pressing flat in with fingers all long plate.

18. Replace 2 screws that hold doctor blade in.

19. Engage hinges to re-attach waste unit.

20. Replace 2 screws.

21. Refill the cartridge as normal.

22. Wipe outside of cartridge with absorbent paper such as kitchen towel.

## Waste

The cartridge collects waste toner in a compartment which, in theory, could fill up completely and cause print problems.

In practice, we found that the waste is unlikely to fill up before the end of 5 refills, by which time you're likely to have had the striation problem.

While solving the striation problem, it's easy to empty the waste, so we show you how to do that in step 4, page 4.

The symptom of waste overflow is black "skid marks" down one side of the page (usually, but not always, the left side). If you seem to have that, you could follow steps 1-9 on page 4 to empty the waste.

## Safety Data Samsung ML-1610 type toner powder

**Not to be used by children. Avoid inhalation of product. Avoid eye and skin contact. Do not ingest.**

### 1 Identification of the substance and the company

Product name	Samsung ML-1610 refill toner
Part no.	SA1610BOT
Supplier	U Refill Toner Ltd. Contact details as per page header

### 2 Composition

Ingredient name	CAS No.	% weight
Styrene acrylate copolymer blend	25036-16-2	45-60
Iron oxide	1317-61-9	25-35
Pigment	NA	0.1-0.2
Polypropylene	9003-07-0	1-4
Carbon black	1333-86-4	1-2

### 3 Hazards identification

Toner dust is a combustible powder the formation of an explosive dust-air mixture is possible. Toner dust may cause discomfort for the eyes and respiratory tract.

### 4 First aid measures

General	Get medical attention if any discomfort continues.
Inhalation	Move the exposed person to fresh air at once.
Skin	Remove affected person from source of contamination. Wash skin immediately with soap and water.
Eyes	Make sure to remove any contact lenses from the eyes before rinsing. Promptly wash eyes with plenty of water while lifting the eyelids. Continue to rinse for at least 15 minutes.
Ingestion	Dilute stomach contents with water. If large quantity swallowed seek medical advice.

### 5 Fire fighting measures

Extinguishing media	Water spray, foam, water
Special fire fighting procedures	Avoid breathing fire vapours
Unusual fire & explosion hazards	Non-flammable, but when suspended in air is combustible as with most organic powders. Generates massive smoke during fire. Avoid all ignition sources.

### 6 Accidental release measures

Personal precautions during spill	Avoid breathing dust
Spill clean up methods	Avoid generation and spreading of dust. Shovel into dry containers. Cover and move the containers. Flush the area with water.

### 7 Handling and storage

Usage precautions	Use mechanical ventilation in case of handling which causes formation of dust.
Storage precautions	Keep in cool, dry, ventilated storage and closed containers. Keep in original container. Max. storage temperature 38°C.

### 8 Exposure controls and personal protection

Treat toner as a nuisance dust. Avoid eye and skin contact. Do not ingest. No special technical measures. Industrial hygiene: after skin contact wash with cold water and soap.

### 9 Physical and chemical properties

Appearance and odour	Black free flowing powder, faint odour
Solubility in water	Negligible.

### 10 Stability and reactivity

Thermal decomposition	Above 300°C
Hazardous reaction	none
Hazardous decomposition products	None at intended use
Combustion products	Carbon dioxide

### 11 Toxicological information

Threshold limits	No data
Routes of entry	
Eyes	Possible may cause slight discomfort
Inhalation	Possible may cause slight discomfort
Skin	None known, no adverse effects expected
Ingestion	Possible, considered harmless
Health hazards	None known
Carcinogenicity/mutagenicity	None found
Medical conditions aggravated by exposure	None known

### 12 Ecological information

Environmental hazards	Not regarded as dangerous for the environment. Not biodegradable.
-----------------------	---

### 13 Disposal considerations

Disposal methods	Pack in dust proof containers to prevent dust exposure. Dispose of in accordance with Local Authority Requirements by landfill or incineration. Do not throw in open fires to prevent risk of dust explosion.
------------------	---

### 14 Transport information

General	Not regulated
---------	---------------

### 15 Regulatory information

The product is not classed as a dangerous preparation according to European directives 67/548/EEC and 88/379. Therefore, indications of special risks or safety advice on the packaging are not prescribed.
---

### 16 Other information

Use	Dry powder ink for use in laser printers
Room ventilation	See operators manual or safety data sheet for printer

**Notice.** All safety information is given to help facilitate the safe use of this product and is based on information obtained from the manufacturer. This information is believed to be correct, but does not purport to be all-inclusive and shall only be used as a guide. U Refill Toner Ltd makes no warranty, express or implied, as to the accuracy or completeness of this information. It is the user's responsibility to determine the suitability of this information for the adoption of necessary safety precautions and / or compliance with local laws and regulations.

All information offered is believed to be true and is offered for consideration in good faith. However, U Refill Toner Ltd gives no warranties, neither explicit nor implicit as to the completeness or accuracy of any information offered nor the ultimate safety of refilling toner cartridges in any manner described or suggested nor the ultimate safety or hazardousness of products supplied by U Refill Toner Ltd. The onus is on the purchaser to evaluate all possible risk, including the possible incompleteness or inaccuracy of currently available information, and by proceeding to use the refill product or products, the purchaser thereby assumes all risk of peril or injury howsoever arising.

If you the purchaser decide not to go ahead with refilling for whatever reason, simply return the product or products to U Refill Toner Ltd and we will cheerfully refund your money. Your statutory rights are unaffected.



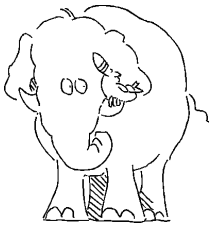
## Please, tell three people what you've done

OK, we admit it. This is our begging act. Have you saved money by using our DIY kit? Did you feel a touch of pride as your cartridge *did* print again? Maybe you found some environmental satisfaction? Or perhaps you feel it should be refilled "because it's there". We sincerely hope we've helped float your boat in some way. And if so, then please help our voice in the wilderness and tell at least three people about what you did with your empty cartridge.

We all know a lot of people: at work, in the family and in clubs and groups. Why not make a point of telling just three of those people about what you did with your empty cartridge? Even if they don't have printers themselves, they probably know people that do.



Why not copy these instructions and FAX them to three work contacts? Why not make some photocopies and give them to people that you know use computers? Why not broadcast an email to your email pals? In our experience, people will probably thank you for getting organised to spread useful information and it enhances your (doubtless already legendary) image as someone who knows their stuff. A battered home world might just benefit from your efforts as well.



## Don't forget

You can easily refill **desktop copier cartridges** by Canon, Sharp and Xerox. Plus enjoy more refilling success with mono and colour laser printers by Hewlett Packard, Brother, Canon, Epson, Lexmark, Konica Minolta, Samsung, Xerox and others.

## Copyright and intellectual property information

U Refill Toner Ltd. is not associated with or endorsed by any of the manufacturers referred to in any of its literature. Names of manufacturers, machines and part numbers are given as an aid to identification only. Names of manufacturers, machines and part numbers may be Trademarks of the respective manufacturer. All Trademarks hereby expressly acknowledged.

©® Ownership of all intellectual property relating to this work of literature has been asserted and secured. All International Intellectual Property Rights reserved. No reproduction, copying, image scanning, storing, translating into languages other than English or recording by any means in any form nor broadcasting or transmission through any medium of any part of these instructions is permitted by UK and international law. Used under licence.

Samsung ML-1610 Series Instructions © November 2005.

Revision 8 November 2005.

Revision 4 July 2006.