



How to refill Samsung CLP-415n, CLP-415nw

Also suitable for: CLX-4195FN and CLX-4195FW

Before use, familiarise yourself with the safety information on pages 5 to 7.

Consider doing the refill on top of sheets of old newspaper in case of accidental spills.

Ignore "Prepare Toner" + flashing red light

Get around "Replace Toner" and carry on printing to fadeout



The printer is rigged to stop printing with a "Replace Toner" message together with a constant (i.e. not flashing) red light. Get around this hold up as follows and continue printing until the image begins to fade out through actual lack of toner.

Printer panel says ◀ **STOP** ▶

Press ◀ left or right ▶ arrow until it says **Continue**, then press **OK**
Now continue printing until toner fade out.

Note: if you turn off the printer or take out a cartridge, you might have to repeat the above procedure to reset to Continue again.

Knowing which cartridge is fading out

You'll see from your prints that something's fading, but depending on what you're printing, it's not always obvious which colour is the culprit. The mainly blue image right shows the kind of counter-intuitive effect you can get

Cyan cartridge starting to fade. What should be royal blue is actually pink



It's crucial to know which of the four cartridges to refill. Download this 4 colour A4 swatch from:

<http://www.urefilltoner.co.uk/downloads/toner-refill-fade-out-swatch.pdf>



Colours affected on swatch	Cartridge fading
Black only	Black
Blue only	Cyan
Blue and orange	Magenta
Yellow and orange	Yellow

Having identified the fading cartridge, just refill it according to the "How to refill it" section starting on page 2.

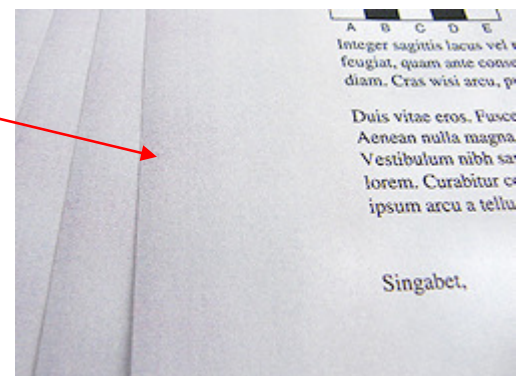
Important: only refill the cartridge that's showing signs of fading

Don't "top up" all the cartridges while you're "at it". The laundry list of things that can go wrong with this approach is as long and dreary as the websites that promote it. Make up your mind right now to just refill each individual cartridge as and when it fades out.

Weird occasional background issue

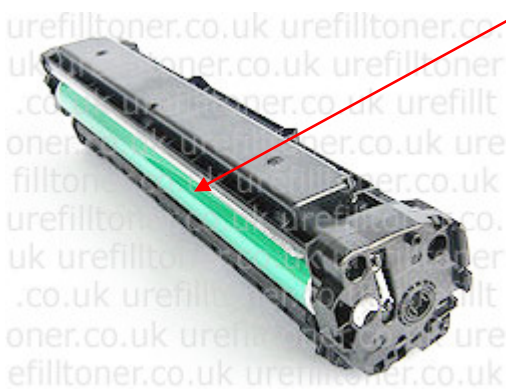
On a couple of occasions, while printing between the "Replace Toner" message and actual fadeout, we saw background steaks down the sides of pages.

This definitely happened with original, not-refilled-yet, cartridges. The effect disappeared once we had refilled.





Protect green OPC drum while handling, keep from direct sunlight



Protect the green OPC drum at all times. Never expose it to direct sunlight and expose to ambient light as little as possible.

All cartridges come out standard capacity

The new machine arrives with a set of cartridges (quoted as yielding 1,000 pages for black and 700 pages for the colours). You can subsequently buy cartridges quoted as yielding 2,500 for black and 1,800 for the colours.

Whatever a cartridge started out life as, after being successfully refilled with this product, it will be a **standard capacity cartridge**.

How to refill it

- 1) Turn on melting tool and leave to heat for at least 5 minutes (for full information on the use and safety of the melting tool and melting blade, see page 5).
- 2) Melt hole in area as shown



- 3) Shake unopened bottle vigorously for 5 seconds.
- 4) Open toner bottle and screw on spout.
- 5) To avoid leakage of micro fine toner, wrap any kind of tape around join between spout and bottle: selotape, brown parcel tape, gaffa tape etc.
- 6) Hold cartridge at about 45 degrees with one hand. Use other hand for bottle.
- 7) Keeping bottle below horizontal, bring spout to hole and up end bottle. Bring cartridge and bottle up to vertical



- 8) Count to 10 while toner flows in.
- 9) Keeping spout near hole, rotate bottle down to below horizontal





- 10) Cover end of spout firmly with finger and briefly shake bottle again. Repeat shake/pour until you can feel there's no toner in bottle when shaken
- 11) Use alcohol swab to clean up any stray toner around hole
- 12) Unpeel Gaffa tape patch from backing and apply to hole as shown. To avoid leaks, aim for a firm contact to all flat surfaces near entrance of hole.

Note: Gaffa tape (also know as "duct tape") patches are included with this kit for completeness. It's the best kind of tape for sealing over the irregular surfaces near the toner refill hole, so you might want to make sure you've got a roll of it for the future.



Empty waste before doing 2nd refill Or wait for streaks, then empty straight away Emptying waste is messier than a refill

As these machines print, they produce waste toner. It's sneakily stored inside an empty chamber inside the toner cartridge. If the waste fills up completely, you'll start to get "waste streaks" like these cyan ones vertically down the page (could also be black, magenta or yellow, of course, according to the colour of the cartridge).

For the CLP-415 family, this is highly likely to happen during the running of the second refill. So the preventative route, if you want to empty the waste, is to do it at the **end of the first refill**.

If you like to wing it, it *is viable to deliberately wait for the first signs of waste streaks and empty the waste at that point*. Don't delay though. Very soon after the appearance of waste streaks, the compacted waste scratches the OPC drum and the cartridge is rendered useless - whether you then empty the waste or not.

We say "if" you want to empty the waste, because it's your call. Emptying the waste is messier than just refilling.

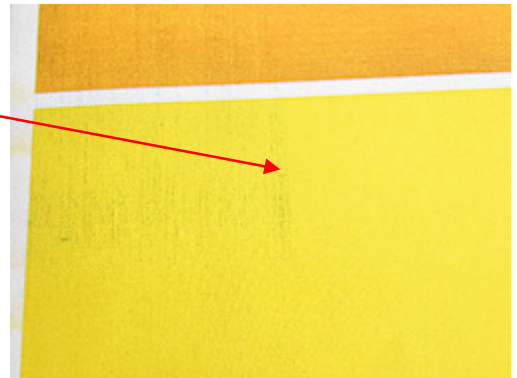
If you're up for it, though, here's how you an empty the waste:

1. Melt waste hole as shown



2. Shake waste toner straight into an outside bin: do not expose the green OPC drum to direct sunlight.
3. Wipe stray toner from cartridge surface with absorbent paper.
4. Outside of cartridge can optionally be cleaned with vacuum cleaner fitted with the "hairy" attachment. However, take great care not to scratch the very delicate pale blue OPC drum surface and only perform surface cleaning: do not penetrate into crevices. **Safety note:** consult your vacuum cleaner manufacturer over the suitability and safety of using your model before vacuuming toner powder.
5. Use alcohol swab or absorbent paper to clean and prepare flat surfaces around hole.

6. Seal hole with any tape that's wide enough. Some duct tape's included in the kit to get you started (you'll need to cut the patch supplied to suit).





Waste toner bottle

Apart from toner cartridges, the only other consumable used by the printer is a waste toner bottle which collects transfer belt waste.

- Waste toner bottle. Part no. CLT-W504

Its life-cycle is unaffected by whether or not you refill cartridges. Check your manual for more information.

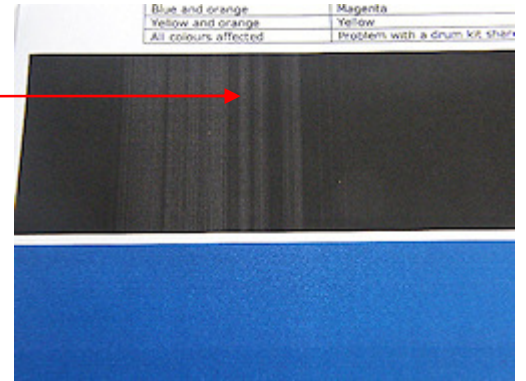
“Striation” problem expected beyond 3rd refill

Striations, which are 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.

Again, printing our swatch found at the following URL will help you spot striations.

<http://www.urefilltoner.co.uk/downloads/toner-refill-fade-out-swatch.pdf>

Example of striations that happened during our 4th refill of a CLP-415 black cartridge



Although we know what causes striations (gradual deposits on the doctor blade inhibiting toner from going where it needs to), it’s beyond the scope of a DIY refill to fix this.

So if your cartridge has developed striations, it’s curtains for that one.

Three refills, and maybe then some

If you’ve delved into our website, you might know that we “put our corporate neck on the chopping block and say that the rule of thumb is **three refills, and maybe then some**”.

As far as problems due to “wear and tear” go, the CLP-415 is an “and then some” cartridge.

Of course, some cartridges inexplicably give up the ghost early, probably due to small manufacturing imperfections. Others perform above and beyond the call of duty.

By aware though, that the more times a cartridge has been refilled, the more likely it is to fail for one kind of wear and tear related issue or another. We could write a moderately sized book about the different ways a toner cartridge can fail and what the associated symptoms are. Instead, here’s another rule of thumb that’ll save you most of the headaches we’ve had since 1992:

If you’ve got any kind of persistent print problem that boils down to toner being present on the page where you don’t want it and emptying the waste doesn’t fix it, then it’s about the end of the road for that cartridge.

The flip side to this is: don’t refill a cartridge that has a “toner where it shouldn’t be” print problem (thinking more toner will fix the problem). On the contrary, at best, you’ll just be able to print the undesired effect for much longer.

Don’t try and print on both sides?

Our CLP-415N has a “manual duplex mode” in the print options dialogue. “Manual duplex” is a fancy way of saying “turn the paper the other way up and print on the other side”.

We found we couldn’t print properly on manual duplex mode. We got persistent paper jams which happened both before refilling and after. We even called Samsung’s engineer under the warranty and he duly came and went, but the issue was never fixed.



Use and safety of the melting tool

The tool needs at least 5 minutes to reach an efficient melting temperature.

To melt a hole, apply a light force similar to pressing on paper with a ballpoint pen. Ease off the pressure as the tool sinks into the plastic.

During the first 6 minutes of the first ever use, smoke will come out of the heated part of the tool as manufacturing lubricants burn off. This is normal.

Use a screwdriver to push out the residual plastic plug while the tool is still hot.

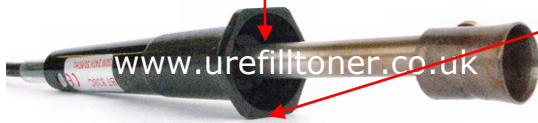
Occasionally, the plastic plug falls inside the cartridge. Try and get it out using tweezers or pliers if you can. A piece of plastic this size inside the toner compartment doesn't usually do any harm, but be aware that it's there and retire the cartridge if it shows signs of physically jamming.

Important safety information

- To be used only by a competent, risk-aware adult.
- Use only in a well-ventilated situation. As with the combustion of any organic substance (such as petrol or tobacco) a cocktail of gases can be produced and some of these are harmful or at least irritant.
- All metal parts of the tool get dangerously hot. Never touch any metal part of the tool, including the steel shaft near the plastic handle.

When not in hand, the tool is designed to be rested at an angle created by the flange of the handle, keeping the hot parts suspended above your surface. But take care that the power cable doesn't force the handle to rise and the hot end of the tool to dip.

- Take care not to melt through the tool's own electric cable.
- Do not use the tool with the end-piece or blank filler tip



removed.

- Turn off and unplug the tool as soon as you've melted your hole. Leave to cool at least 2 metres away from your toner pouring area.
- Do not leave on for more than 30 minutes at a time.
- After use, allow the tool to cool down naturally. Do not immerse in water.
- Take all precautions for the use of a powered hand tool. Use eye and hand protection.

Assumption of risk notice

We ourselves have no hesitation in researching and refilling cartridges using the melting technique in a well-ventilated room. However, the company gives no warranties, neither explicit nor implicit, as to the safety of melting holes in toner cartridges or the use of the melting tool. Any activity or process has an element of risk. The onus is on you, the purchaser, to assess any possible risk, including the inaccuracy or incompleteness of currently available information. If you decide not to go ahead, return the product to us and we'll cheerfully refund your money. This offer is additional to your statutory rights.

©® Ownership of all intellectual property relating to the melting tool has been asserted and secured.



Safety Data Samsung CLP-415 type toner

Take maximum precaution when using a screwdriver as a lever: consider safety and protection of eyes and hands from sudden slippage or unexpected freeing of the tool.

Only to be used by a competent risk-aware adult. Not to be used by children. Avoid inhalation of product. Avoid eye and skin contact. Do not ingest. Avoid sources of ignition while pouring and at all times.

1 Identification of the substance and the company

Product name	Samsung CLP-415 type refill toner
Part no.	SA415BOTB, SA415BOTC, SA415BOTM, SA415BOTY
Supplier	U Refill Toner Ltd. Contact details as per page header

2 Hazards identification

Classification	Not believed to be classified as hazardous according to OSHA CFR 1910.1200 or EU Directive 1999/45/EC, as amended.
Acute health effects	
Skin contact	Unlikely to cause skin irritation
Eye contact	May cause irritation
Inhalation	Irritation to respiratory tract if exposed to large amounts of toner dust
Ingestion	Unlikely when used as intended. Acute oral toxicity is believed to be low
Potential health effects	
Routes of exposure	Skin contact, eye contact and inhalation. Ingestion unlikely.
Chronic health effects	Prolonged inhalation of excessive amounts of any dust may cause lung damage
Carcinogenicity	Carbon black is classified by IARC as group 2B (possible human carcinogen). Carbon black in this preparation, due to its bound form, is not believed to present this risk.

3 First aid measures

Inhalation	Move person to fresh air. If breathing is difficult, obtain medical assistance
Eye contact	Flush with plenty of low pressure water for at least 15 minutes. Do not rub eyes. Remove contact lenses to ensure thorough flushing.
Skin	Wash with water, obtain medical attention if ill effects occur
Ingestion	Rinse out mouth with water. Drink one or two glasses of water. If large quantity swallowed seek medical advice

4 Fire fighting measures

Hazardous combustion products	Carbon monoxide and carbon dioxide
Extinguishing media	Water, dry chemical, carbon dioxide or foam
Special fire fighting procedures	Avoid inhalation of smoke. A self contained breathing apparatus and suitable protective clothing should be worn.
Unusual fire & explosion hazards	Toner is a combustible powder; formation of an explosive dust-air mixture is possible. Avoid all ignition sources if toner has been dispersed in air.

5 Accidental release measures

Spill/leak procedure	Sweep up or vacuum spilled toner and transfer into sealable waste container. Sweep slowly to minimize generation of dust. If vacuum is used, the motor must be rated as dust tight and safely applicable to the vacuuming of toner dust. Residue can be removed with soap and cold water. Garments may be washed or dry-cleaned after removal of loose toner.
Environmental precautions	Do not flush into surface water or sanitary sewer systems. Dispose of waste material in accordance with all applicable laws.

6 Handling and storage

Handling	Keep containers closed when not in use. Handle and open containers with care. Use with adequate ventilation. Avoid inhalation of dust and contact with skin and eyes. Keep away from sources of heat, sparks and open flames.
Storage	Store at room temperature in the original container. Keep container tightly closed and dry. Do not store with strong oxidizers.

7 Exposure controls and personal protection

UK exposure guidelines	WEL: 10mg/m ³ (inhalable dust), 3mg/m ³ (respirable dust)
Personal protective equipment	
Eye / face	Wear dust resistant safety goggles if there is danger of eye contact
Hands / skin	Wear protective gloves
Respiratory protection	Wear approved respirator for dust when exposure exceeds permissible limits
Additional measures	Use in a well ventilated area. Use engineering controls to reduce air contaminants to permissible limits. Wash hands after use.

8 Toxicological information

Oral toxicity	Tests on toners have indicated there is no evidence of acute oral toxicity. Not classified for acute oral toxicity according to EU Directive 67/458/EEC and 1999/45/EC
Inhalation toxicity	No data
Eye irritation	Not classified as irritant according to OSHA HCS and EU 67/548/EEC as amended
Sensitization	Not classified as sensitizer according to OSHA HCS and EU 67/548/EEC as amended
Chronic toxicity	No data
Carcinogenicity	Carbon black is classified as a group 2B by IARC, but carbon black is present only in bound form in this preparation.
Mutagenicity	Negative (AMES test)
Reproductive toxicity	Not classified as toxic according to EU 67/548/EEC as amended

9 Ecological information

Not tested for ecological effects

10 Disposal considerations

Collect into tightly sealed containers. Dispose of waste in accordance with all local laws. Do not throw in open fires in order to prevent risk of dust explosion.
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11 Transport information

General	Not regulated
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12 Other information

Labelling EU 67/458/EEC	
R & S phrases	Not required
Hazard symbol	Not required



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.



Refills by you ... thanks to you

Thanks for refilling the toner cartridges in your printer. We invented "do-it-yourself" toner refills in 1992, "melt & pour" in 1996 and put "unplug & pour" into internet-speak in 2002. We've never tried to patent or otherwise restrict the use of these ideas.

If you liked our product, please recommend us to friends and colleagues. We've survived for over 20 years – fighting giant corporations that dwarf us – thanks to your custom and recommendation. No one here takes that, or you, for granted.

U Refill Toner. Now needed more than ever. Now refined more than ever.

- ✓ more than halve the cost
- ✓ halve CO₂
- ✓ don't be a doormat for big manufacturers



*Original and largest selling
do-it-yourself toner refill*

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