



® F: mode d'emploi D: Gebrauchsanleitung NL: gebruiksaanwijzing I: istruzioni per l'uso

Gigabitfilm®

Data sheet
www.gigabitfilm.de

ISO 40/17° Film & Chemistry

Gigabitfilms are **for photographers**, who carry out their own black&white film development.
Gigabitfilms are **for photographers and artists**, who wants the best.
Gigabitfilms are **for all**, who want to forget quality problems.
No more stress with technique or any quality diminishing influences.
There are no more resolution losses, no distortion of the gray-scale and no grain noise.

What you see as a photographer is what you get on the film!

More information is available on www.gigabitfilm.de presenting further reports, picture examples, instructions and updates (about 120 pages mostly in german language).



- Address:** Gigabitfilm GmbH, Heinrich Boell Strasse 17, D-52372 Kreuzau, Germany, Fax: ++49 2422 500460, Fon: ++49 2422 500461
- Filmproduction:** ISO-certificied production by Agfa-Gevaert N.V. in Mortsels, Belgium.
- Film base:** Polyester (PET = Polyethylenterephthalat), only to be cut with scissors (bring scissors in the darkroom!) The film base is absolutely clear and can work as a light pipe. Incidence of light can happen through the slit of the cassette, especially at the perforation holes.
- Important:** **Always load and reload film in subdued light, never in direct sunlight.** Always store the exposed film in the black plastic tube.
- Backing:** With efficient high antistatic protection against dust.
- Sensitization:** Panchromatic.
- Filter factors:** **yellow** Y (K2) + ½ f/stop,
orange O (G) + 1 f/stop,
green G (X1) + 1 f/stop,
red (R25) + 4 f/stops.
- Skin tones:** Very natural appearance.
- Reciprocity:** At 1 sec.+½ f/stops, at 10 sec. +1 f/stop, at 100 sec. +1½ f/stops.
- Flash:** Flashlight exposure please develop **+20%** longer.
- Resolution:** Contrast 1:1000 720 line pairs/mm (Contrast 1:1.6 ≥ 240 lp/mm).
- Graininess:** Very low in normal densities, low at high densities.
- Durability:** Film: min. 2 years, Chemistry: 1 year, Working Solution: 5 hours.
- Processing:** Use 24ml Gigabitfilm-Chemistry ISO 40 only as one-shot-developer for one film in 135/36. Use only tanks for invert/agitation or rotation-drums, do not use older tanks with correx-bands/tapes. A strong inverting at the beginning of developing is imperative.
- Prewetting:** Not recommended - do not presoak film.
- Development:** Processing tank and spiral must be **dry** and **clean**, free from any silver-scum. This hardly perceptible scum causes inhomogenous areas in all classical films and Gigabitfilms. After preparing the working solution please wait for 2 minutes before you start the developing process.
As a first advise for **all standard motives:**
G=0,55 1+11 26°C 5½ min. For studio and weak contrasts use G=0.65 1+11 at 26°C 7 min. For extreme contrast on sunny days use G=0,5, dilute 1+9 at 20°C 6 minutes.
For other dilutions 1+7 up to 1+25 and any temperatures from 18°C up to 32°C and the gamma, you want, please see *Gigabitfilm-Computer*.
- Quality control:** The prepared solution is yellowish (Take care on green color).

Preparing: For your working solution you can use *any value* between 1+7 up to 1+25 (best is 1+11) and *any temperature* from 18°C up to 32°C (best is 26°C). Fill the 24ml Gigabitfilm-Chemistry into the empty measuring cup/mensur, then fill on with the prepared volume of water. This method of mixing is better than with stirring alone. After preparing the working solution please wait for 2 minutes, but not longer than 10 minutes, before you start the developing process. Meanwhile you can load the spiral.

Spiral Loading: Processing tools must be dry, wipe away all water drops. This is similar to the first developer of the E-6 reversal process for all slide films. Some older, very little plastic spiral (Jobo1000, not more in trade) can stall, do not force it. All metal spiral works well. Some *absolutely new* plastic spirals cause inhomogenous development, good results are noticed with new spirals from A&P. Persons, who have problems to touch a photographic paper, please use gloves for loading.

Filling: Fill tank quickly, the complete time - *taken from start to fill, to close the tank with the cup and to the first invert* - must be **shorter than 12 seconds**. The first invert is the most important.

Agitation/Shacking for Tank: Strong invert at the beginning of developing is imperative. The **first 30 sec.** invert every 3 sec. your tank additional strongly up and down, after the **first 30 sec.** the additional strongly movement to the inverting is not more necessary, normal inverting is sufficient. After the **first minute:** then invert once every 15 sec throughout the development.

Agitation for Rotation-drums: at least 50 periods/min.

Stop: Only intermediate washing is not recommended. With common 3% acetic acid bath (99% concentrate = 30ml/on 1liter stop-bath, 60-70% = 50ml/l, 25% = 120ml/l), at least 30 sec. with 3 sec. agitation period. Longer than 1 min. stop-bath is not necessary.

Fixing: normal fixing baths, approx. **20 seconds** (Yes, twenty seconds). Using Gigabitfilms the usual rule applies: fixing time is three times of the clearing time. Do not fix longer than two minutes in a common fixer. Do not use a hardening fixer. Hardening fixers are generally not the best idea for ready-hardened emulsions.

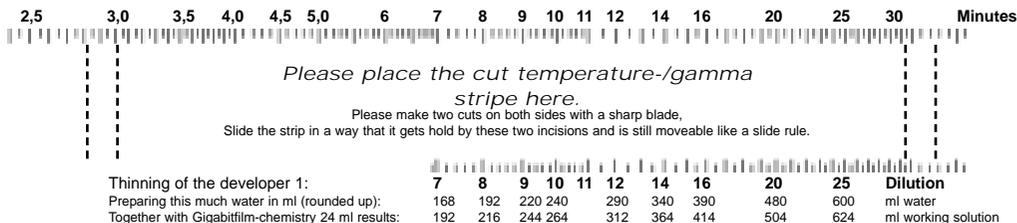
Washing: For normal durability: 30 sec - 2 Min., archive proof: at least 5 min.

Drying: We recommend a final washing in water with wetting agent, for instance by spraying the film with water with wetting agent after it has been put up to dry. As an alternative, normal kitchen paper towels (fresh) can be used, folded over several times, finally folded in an U-shape. Put the film in between the U-shaped towel, keeping the paper taut so the film will be touched by the tension of the paper only, and slowly move the paper along the film downwards - film will be **dry in 2 to 4 minutes** by roomtemperature.

Films can have a higher spin after drying. This can be compensated by inserting the developed film contrary to the spinning direction, 24-hours inside the development spiral.

Gigabitfilm®-Computer

For your guidance of development times
Please cut out the temperature-/gamma stripe and place it between the two logarithmic scales. Now you can read from the ready slide rule the accompanying development time according to the amount of desired dilution and solution temperature. Any intermediate gamma-values are possible.



Gigabitfilm®
Temperature/°C

ISO 40/17° γ=0,65 | γ=0,55 | γ=0,5 Gamma ||S|| (3/2004)

Enlarging systems like Heiland Splitgrade make darkroom work more comfortably (Heiland electronic, Schulstr. 8, 35579 Wetzlar, Germany; www.heilandelectronic.de).
The Moersch Photochemie GbR (Am Heideberg 48, 50354 Hürth, www.moersch-photochemie.de) has revised the formal and artistic aspects of positive processing.

Enlarging Devices

Density: Attention, Gigabitfilm negatives will appear to be **much thinner / softer** than **usual negatives** (- 1 gradation) **on the light desk**, but in your enlarger **the correct grade will appear**.

The reason is the asymmetric Callier-Effect (high quotient for low b/w-densities, normal quotient for high densities), the film-speed can use full thanks to this effect. For **exact** density measurement **only** ||S||-measuring geometry (Microdensitometer) is suitable.

Intensifying: The density of too soft negatives can be increased with selenium toner as usual.

Scans: easy.

RA4-Enlargement: colour-paper will show no colour-shift.

Enlarging: Enlarging systems like **Heiland Splitgrade** make darkroom work more comfortably (Heiland electronic, Schulstr. 8, 35579 Wetzlar, Germany; www.heilandelectronic.de). Please notice: Diffuser light will produce **larger grain** than condenser light with opal illumination!

Remove at least the lower negative covering glass of the enlarger, cause otherwise all of the available enlarger lenses show considerable MTF losses. Recommendable is, at suitable, precise enlarging masks without glass. Do not go beyond f/stop 5,6. Anti-Newton glasses can produce larger grain.

Devices for Photography

Taking lens: Because of diffraction, you should try not to stop your lens down beyond f/5.6 getting the maximum of resolution. If you need depth of focus, you must stop down further. Many camera lenses are still designed to give better contrast, this could reduce considerably resolution.

Flatness: most 35 mm cameras unwind the film in a straight path. With the filmcartridge on the left, the film is wound in an anti-clockwise manner on the right (seen from above and behind). This type of camera did give a good result, when using film having the tough PET base. Cameras having a vacuum-back of course should be preferred, yet conventional cameras can give extraordinary results. If a film is rolled up in other directions, under some circumstances tension of the film strap and thus asymmetrical curvatures on the film can appear on shots taken at infinity setting causing a lower resolution on some picture parts.

Autofocus: will function perfect, facing the heightened demands put on sharpness, but only as long as they still have the original manufacturer's adjustment.

Flash + cameras with TTL-measurement: Cameras with more *infrared sensitive* TTL measures a brighter emulsion layer, this film reflects more light into the measuring cell as conventional films. This has to be taken into account. This can cause a measuring difference up to 2½ f/stops.

Focussing screen: The reason of differences of the adjustment accuracy both on the focussing screen as well as on the split screen can be a f/stop difference of your lens (change of focal length (distance) at increasing f/stops). Please check your equipment when results are unsatisfactory. Do the same if too short infinity settings of lenses are found.

Theoretical resolution values

for perfect optics at the wavelength of 590 nanometers

Complete angle of view	f/stop	0°	20°	40°	60°	90°
		Tangential (Radial)				
	2.8	492 (492)	470 (486)	408 (462)	320 (426)	174 (348)
	4	348 (348)	332 (342)	290 (326)	226 (302)	122 (246)
	5.6	246 (246)	235 (243)	204 (231)	160 (213)	87 (174)
	8	174 (174)	166 (171)	145 (163)	113 (151)	61 (123)
	11	123 (123)	117 (121)	102 (115)	80 (106)	43 (87)
	16	87 (87)	83 (86)	72 (82)	56 (75)	31 (62)
	22	61 (61)	59 (61)	51 (58)	40 (53)	22 (44)
	32	43 (43)	41 (43)	36 (41)	28 (38)	15 (31)

These resolution values apply to the high contrast of 1:1000 and represent line couples per mm. Low contrast values of 1:1.6 - please multiply by x 0.22.

Gigabitfilm GmbH, D-52372 Kreuzau, Germany

www.gigabitfilm.de

Developing advices:

1. A **strong inverting** at the beginning of developing is imperative.

2. Use clean processing tanks without any rests of wetting agents. Clean only with water, do not use any washing-up-liquid/cleaner. Processing tools **must be dry**, wipe away all water drops. This is similar to the first developer of the E6 reversal process.

3. Processing tanks/spirals which have been used exclusively for b/w for many years **may show silver scum**. Developers which contain much sodium sulfite (e.g. D76/ID 11) show the most tendency. This hardly perceptible silver scum causes inhomogeneous areas in all classical films and Gigabitfilms, especially at these areas where is direct contact between the reel and the emulsion. To check this rub with a cotton-wool tip inside of the reel. When it becomes black continue with cleaning or use a C41 bleach fixer.

4. Be carefully using **absolutely new spirals made of plastic** from some producers. Some aids used in spiral- production cause inhomogeneous development, especially in sky parts. These aids/coatings of spiral- production can be removed by an alkaline solution (6 hours in not-used paperdeveloper) over night. Softeners in the plastic material show the same effect. Softeners diffuse much stronger at higher temperatures (10x - 200x), don't rinse or clean photographic plastics with hot water. All metal spiral works well and good results are noticed with new plastic spirals from A & P.

Risks: occasionally, premature automatic filmrewind was triggered in cameras having this feature after only 24-30 exposures. This most likely is caused by the tough PET filmbase. The advantages of the PET base however outweigh any such mishaps.

Dark rounded spots in enlargements: The high efficient antistatic coating of the filmback-side shows (manufacture conditioned) some microscopic tiny irregularities, this is normal. If these little spots in the antistatic coating will be visible just in huge enlargements in underexposed shadowparts, you can **remove** this coating from the backing with **acetone** (nail-varnish remover) and a piece of cotton **without any problem**.

A word to the digital challenge

The aim to get in black&white-photography a perfect information carrier, a negative of a timeless maximum quality, is now realised: the Gigabitfilm-Quality. This is purely a more technical aspect, to the now enhanced esthetic aspects for the classical b&w-lab please look at:

The Wolfgang Moersch Photochemie GbR (Am Heideberg 48, 50354 Hürth Germany, web: www.moersch-photochemie.de (mostly translated)) has revised the formal and artistic aspects of positive processing and created completely new ways of expression. This is clearly visible on these wonderful web sites.

By the way: If, because of formal reasons, you should need a coarse-grained enlargement a new photo is no more required for this. You can reach this again (independent of the scale), with a special positive developer of Moersch on the paper with a variety of grain sizes from discreet up to strong. A variation is on definite bright picture tones even resolution sinking, the ideal "retouching" for difficult skin problems at portrait shots. Only the other way around will not work: You can never get a Gigabitfilm-Quality enlargement from a coarse-grained film negative.

Risks on health and side effects: Because the combination of the different substances in the Gigabitfilm chemistry can be different as their respective uncritical single effects at not predictable circumstances, Gigabitfilm GmbH recommends for the first proof-testing on the market, to keep the chemistry out of the reach of children, avoid unnecessary skin contact, to wash the eyes in case of contact thoroughly with water as well as the use of suitable protective gloves.

Limitation of liability: If this film is found defective in manufacture, packaging or labeling it will be replaced. Except for such replacement, this product bears no warranty or liability whatsoever, even though damage, defect or loss is caused by negligence or other fault.