



Surtsey, Iceland.
Courtesy of Loftmyndir ehf, Reykjavik, Iceland; www.loftmyndir.is.

Aerial Photography Product Overview

With their spectral sensitivity extending to the infrared range, Aviphot Pan black-and-white recording films register more details. Aviphot Color and Chrome recording films are fine examples of technological sophistication.

Their outstanding quality is characterised by high image definition and reproduction of the smallest details.

Black-and-white

> Camera Films	Use	Processing	Features/Benefits
Aviphot Pan 80 PE1 Aviphot Pan 80 PE0 High resolution, intermediate speed, extremely fine grain panchromatic negative film.	Low to high altitude flights.	Continuous tone processor or rewind development. Developer: G 74 c or G 74 c + AD 74. Fixer: Pfix + Aditan.	<ul style="list-style-type: none"> - Protection layer to prevent scratching. - Excellent penetration through haze: sharp images. - Clear differentiation of species in agricultural and ecological studies. - Control of image contrast: the film can be processed as a low contrast film for large scale photography or as a high contrast film for other applications. Average gradient between 0.9 and 1.9.
Aviphot Pan 200 PE1 Aviphot Pan 200 PE0 Aviphot Pan 200 PE0-AR Medium speed, fine grain panchromatic negative film.	Low to medium altitude flights.	Continuous tone processor or rewind development. Developer: G 74 c or G 74 c + AD 74. Fixer: Pfix + Aditan	<ul style="list-style-type: none"> - Excellent penetration through haze: higher image contrast and therefore more information. - No special recording filters required. Yellow filters can be used to get a higher image contrast. - Average gradient can vary between 0.8 and 1.6. - Higher speed means shorter exposure times, smaller apertures (= higher sharpness over the entire image) and more flying hours per day.
Aviphot Pan 400S PE1 Aviphot Pan 400S PE0 High speed, low fog, fine grain panchromatic negative film.	Short photo-flights under different conditions. Low sun angle flights.	Continuous tone processor or rewind development. Developer: G 74 c or G 74 c + AD 74. Fixer: Pfix + Aditan.	<ul style="list-style-type: none"> - Excellent penetration through haze: also suitable for flying in poor weather conditions. - No special recording filters required. - Low fog, even at long processing times or processing at higher temperature. - High sensitivity: suitable for poor light conditions. - High resolution due to fine grain and highly efficient anti-halation layer. - Average gradient variation between 0.6 and 1.1 in function of the developing time. - Wide exposure latitude prevents under- or overexposure.

> Copying Films	Use	Processing	Features/Benefits
Avitone P 1 p Avitone P 3 p Negative acting, orthochromatic continuous tone film for making diapositives from black-and-white originals.	Duplicating continuous tone negatives either in contact (with or without electronic contrast modulation) or by projection for enlargements. Duplicates for cartographic and military applications.	Continuous tone (G 74 c) processing. Rapid access processing.	<ul style="list-style-type: none"> - Suitable for copying medium to fine grain recording films. - Extremely fine grain emulsion: enhanced contrast through reproduction. - Average gradient of 1.3 to 1.6 can be reached by adjusting the developing time. - Dimensionally stable duplicates under controlled processing conditions.
Avitone P 1 p-HR Avitone P 3 p-HR Negative acting, blue sensitive very high resolution film for making diapositives from black-and-white originals.	Duplication of continuous tone negatives, either in contact or by projection. Duplicates for cartographic and military applications. Easy reproduction of identical copies. Ideal for copying high altitude reconnaissance originals. Easy scanning on digital scanners.	Continuous tone (G 74 c) processing. Rapid access processing.	<ul style="list-style-type: none"> - Extremely fine grain film suitable for copying high altitude films with extremely high resolution. - Average gradient of 0.8 to 1.0 in G 74 c developer. - Neutral grey, low fog copies. - Dimensionally stable duplicates under monitored processing conditions. - Can be used in processors with short fixing and drying times. - High scratch-resistance and secure film conveying in fast duplicators.
Avitone PD 1 p-OS Avitone PD 3 p-OS Orthochromatic continuous tone diapositive film.	Duplicates and enlargements (negative/negative) of continuous tone negatives. Various continuous tone applications. For making identical copies for the Open Skies project.	Continuous tone (G 74 c) processing. Rapid access processing.	<ul style="list-style-type: none"> - Suitable for copying medium to fine grain recording films. - High resolution due to fine grain structure and anti-halation layer. - Large contrast range for copying negatives with varying image contrast or different density range. - Average gradient may vary between 1.0 and 1.3, enabling gradation control and optimum image quality in continuous tone processing. - Absolutely neutral silver image. - Low fog, average gradation of 1.0 and high maximum density make these films suitable for identical copies.

> Papers	Use	Processing	Features/Benefits
Rapitone M1 and M2 Photographic black-and-white paper with variable contrast through the use of coloured filters. Semi-matt and glossy surface.	Enlargements. Contact prints. Mosaics.	Continuous tone (G 74 c) processing. Rapid access processing. In activator.	<ul style="list-style-type: none"> - Gradual variation of the gradation from extra low to very high contrast by using standard black-and-white enlargers with multi-contrast filters or enlargers equipped with a colour head or filter head for multi-contrast paper. - Copied image is black on a white background. - Contrast increase and/or decrease within one image through partial exposures with different filter combinations.

Colour

> Recording Films	Use	Processing	Features/Benefits
Aviphot Color X100 PE1 Panchromatic negative colour film without colour mask.	Low, medium and high altitude flights, between 1,500 and 25,000 ft.	ASP 70 Process, compatible with C-41 and AN-6 processing.	<ul style="list-style-type: none"> - Very high definition and very low granularity: ideal for cartographic image acquisition and interpretation. - Wide contrast range through push processing by increasing either the developing time or the developer temperature. - Low contrast at standard processing, excellent shadow detail. - Suitable for electronic image scanning: reproduction of clean and saturated colours without additional colour correction for compensation of mask colour. - No colour mask: faster reproduction, easy focus, direct use in stereoplotter.
Aviphot Color X400 PE1 Panchromatic negative colour film without colour mask.	Low, medium and high altitude flights, between 1,500 ft. and 15,000 ft.	ASP 70 Process, compatible with C-41 and AN-6 processing.	<ul style="list-style-type: none"> - High speed and low granularity, ideal for photography in low light conditions or from unstable platforms. - Low contrast at standard processing, particularly suitable for low sun angle photography. - No colour mask: faster reproduction, easy focus, direct use in stereo-plotter and high signal/noise in electronic imagery. - Suitable for electronic image scanning: reproduction of clean and saturated colours without additional colour correction (no colour mask).
Aviphot Color N800 PE1 Panchromatic negative colour film.	Low to medium altitude flights (2,500 to 15,000 ft) or very poor lighting conditions.	ASP 70 Process, compatible with C-41.	<ul style="list-style-type: none"> - Minimum granularity, high definition and very high speed. - Excellent image quality and very good resolution. - Perfectly balanced colour saturation for low and medium altitude flying. - Pure, faithful colours: colour contamination is avoided by the triple masking technique. - Wide exposure latitude limits the need for repeat flights.
Aviphot Chrome 200 PE1 Panchromatic colour reversal film.	Low to medium altitude flights (2,500 to 15,000 ft).	ASP 44 Process, compatible with E-6 chemistry.	<ul style="list-style-type: none"> - Sharp, low grain positive image. - Can be pushed in speed, without change in contrast. - Natural colours, very good colour saturation. - Excellent shadow detail.

> Copying Films	Use	Processing	Features/Benefits
Avitone CP 70 Negative colour copying film for making diapositives.	For making highest quality diapositives from aerial negatives, for use in ortho-plotters. Scanning of diapositives without loss of resolution or information.	ASP 70 Process, compatible with C-41 chemistry. Agfacolor Process AP 94, compatible with RA-4 chemistry.	<ul style="list-style-type: none"> - Medium colour saturation, high brilliance. - Extra fine grain and ultimate sharpness. - Low contrast for rendering shadow details. - Good dimensional stability due to the 0.175 mm polyester base.
Avitone CP 94 Negative colour copying film for making diapositives.	Photogrammetry: for making diapositives from aerial negatives, for use in orthoplotters. Transparency displays.	ASP 94 Process, compatible with RA-4 chemistry.	<ul style="list-style-type: none"> - High colour saturation and brilliance. - Optimised contrast range. - Excellent sharpness. - Fast and accurate, for use on dodging printers. - Good colour stability due to the use of true-colour dyes and UV-absorbers. - Good dimensional stability due to the 0.175 mm polyester base.

> Papers	Use	Processing	Features/Benefits
Rapitone C1 and C2 Photographic continuous tone colour paper.	Enlargements. Contact copies in automatic contact frames. Mosaics.	ASP 94 Process, compatible with RA-4 chemistry.	<ul style="list-style-type: none"> - High colour saturation and brilliance. - Fast and accurate, for use on dodging printers. - Glossy and semi-matt surface.

ASP 70 process in roller transport processors

Process solution	Time	Temperature (°C)	Replenishment rate (guideline)
Developer 70 CD-R / Starter 70 CD-S	3 min 15 s	37.8 ± 0.25	1075 ml/m ²
Bleach 70 BL-R /acetic acid 60%	4 min 20 s	38 ± 3	810 ml/m ²
Wash	1 min 5 s	38 ± 3	-
Fixer FX univ or FX Unifix	4 min 20 s	38 ± 3	810 ml/m ²
Wash	3 min 15 s	38 ± 3	-
Final bath 70 FI	1 min 5 s	24 - 41	810 ml/m ²
Drying	-	max. 45	-

To increase the contrast in a colour negative, the standard developing time and temperature can be changed. When pushing the development, the developing time can be increased to maximum 5 minutes 20 seconds. The temperature of the developer can also be increased to maximum 41 °C. Both pushing methods can be used either separately or simultaneously.

ASP 44 process in roller transport processors

Process solution	Time	Temperature (°C)	Replenishment rate (guideline)
1st Developer 44 FD-R / Starter FD-S	5 - 7 min	38 ± 0.3	2150 ml/m ²
Wash	1 - 4 min	33 - 38	-
Reversal bath 44 RE	1 - 4 min	24 - 39	1100 ml/m ²
Colour developer 44 CD-R / Starter 44 CD-S	5 - 8 min	38 ± 0.6	2150 ml/m ²
Pre-bleach 44 P BL	1 - 4 min	24 - 39	1100 ml/m ²
Bleach 44 BL-R / Starter 44 BL-S	6 - 8 min	33 - 39	215 ml/m ²
Fixer FX univ or FX unifix	4 - 6 min	33 - 39	1100 ml/m ²
Wash	2 - 4 min	33 - 39	-
Wash	2 - 4 min	33 - 39	-
Final bath 44 FI	30 s - 4 min	Room temperature	1100 ml/m ²
Drying	-	Max. 45	-

ASP 94 process in roller transport processors

Process solution	Time Paper/Film	Temperature (°C)	Replenishment	
			Paper	Film
Colour Developer 94 CD-R / Starter 94 CD-S	45 s / 110 s*	35 ± 0.3	215 ml/m ²	500 ml/m ²
Colour Developer 94 CD-LR / Starter 94 CD-S	45 s / 110 s	45 s / 110 s	160 ml/m ²	500 ml/m ²
Bleach-Fix 94 BX-MR	45 s / 110 s	30 - 36	215 ml/m ²	500 ml/m ²
Wash	90 s / 220 s	30 - 40	2-5 ml/m ²	4-11 ml/m ²
Drying	-	max. 80 (paper) max. 45 (film)	-	-

* A developing time of 150 seconds guarantees neutral shadows, deep blacks where needed and a clean white colour.

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