**DATA SHEET**

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# Data Sheet for SPUR Ultratech A and SPUR UltraPan 20

**The SPUR Ultratech A, newly developed by us, is a developer designed for the image-quality development of the new, high-resolution SPUR UltraPan 20 film.**

With this new developer, any sensitivity from **ISO 10/11° to ISO 40/17°** can be achieved when using **SPUR UltraPan 20 film.**

The specified sensitivities correspond to the zone system at **ISO 10/11°** and **ISO 12/12°**. All higher sensitivities are practical sensitivities with slightly reduced shadow detail, whereby the higher the selected sensitivity, the less pronounced the shadow detail becomes. Conversely, the higher the selected sensitivity, the better the highlight differentiation.

We recommend using UltraPan film at sensitivities of up to ISO 25/15° for normal and higher subject contrasts. For lower subject contrasts, the ISO 40/17° setting yields incredibly detailed results due to the slightly higher contrast.

**SPUR Ultratech A** is a two-component developer consisting of Part A and Part B. **Preparation of working solution:** The dilution of Part A depends on the sensitivity setting and is described in the development chart. Regardless of this dilution, 8 ml of Part B is always added to the working solution for developing a film. An example: 260 ml of working solution at a dilution of 1 + 12: 260 divided by 13 = 20 ml of developer concentrate, **which means 20 ml of Part A + 8 ml of Part B to 260 ml of working solution.** If a working solution is prepared for developing 2 films, 16 ml of Part B is added accordingly.

## Technical data for SPUR UltraPan 20 film:

**Film type:** Silver halide film with A. H. U. halo suppression layer and antistatic backing layer.
**Spectral sensitivity:** Panchromatic
**Grain size:** RMS at density 1.0 and a measuring aperture of 48 µ = 11.
**Resolution:** At a contrast ratio of 1000 : 1, the resolution is 700 LP/mm.
**Reciprocity:** The manufacturer has not provided any information on this.

## Exposure: Please note the following:

1.) Due to the properties of the base material, stray light can enter the cartridge through the tongue along the perforation and potentially ruin the first few exposures (so-called light piping). To prevent this, the film should be stored in a black film canister before and after exposure and should not be left lying around uncovered. The camera should not be loaded in excessively bright light!

2.) High-resolution films have a thinner emulsion layer compared to standard black-and-white films, so the flatness of the film is particularly important. Therefore, when taking pictures, care should be taken to ensure that sufficient depth of field is achieved by stopping down at least 1 to 2 stops to compensate for any shift of the emulsion layer out of the optimal plane of focus!

3.) The camera must allow for manual adjustment of the film speed.

## Film Processing:

**Important:** All temperature specifications refer to the loading temperature of the developing working solution. Maintaining this temperature (e.g., in a warm water bath) during development is not necessary; on the contrary, it would distort the results. **You need only ensure that development takes place in a room at normal room temperature of approximately 20° to 21° C.** If development takes place in the summer at higher room temperatures, the development time must be reduced accordingly. Note that the development time must be reduced all the more the higher the room temperature is on the one hand, and the higher the loading temperature is on the other. Pre-rinsing is not necessary and could alter the contrast. All development parameters can be found in the table below.

**Working solutions should be prepared using distilled water. Even slightly harder water can adversely affect quality, sensitivity, and contrast.**

# Developing Chart of SPUR UltraPan 20 film

| Film Speed ISO | Dilution of Part A | Developing temperature at filling moment | Developing Time (min) | Inversion tact First twice, then: | Contrast |
|---|---|---|---|---|---|
| 10/11° | 1 + 30 | 20° C | 9,5 | Once each min | Normal (N) |
| 12/12° | 1 + 27 | 22° C | 11 | Once every 2 min | Normal (N) |
| 20/14° | 1 + 24 | 25° C | 10 | Once every 2 min | Slightly increased (N + 0,5) |
| 25/15° | 1 + 20 | 27° C | 9 | Once every 2 min | Slightly increased (N + 0,5) |
| 40/17° | 1 + 12 | 30° C | 15 | Once every 3 min | Slightly increased (N + 0,7) |

## Additional Processing Instructions:

### 1.) Quality

At lower sensitivities, grain is slightly finer, while resolution and exposure latitude are slightly higher. Sharpness and detail contrast are slightly better at higher sensitivities.

### 2.) Intermediate Rinsing

Do not rinse between steps after development. Either an acidic stop bath may be used, or the film may be fixed immediately after development with an acidic fixing bath.

### 3.) Fixing and Rinsing

The fixing time is only 60 seconds. The rinsing time may be shortened to 5 minutes for complete archival safety.

## 4.) Wetting agent bath and drying

The wetting agent bath should not be as concentrated as is customary with conventional films. It is also recommended to perform the wetting agent bath outside the developing tank and then rinse the spiral again or rinse it thoroughly. Otherwise, during the next development, the dried wetting agent residues could foam up and cause air bubbles, which can lead to development errors.

After the wetting agent bath, we recommend gently wiping with paper towels (use the soft side). The paper towels used should be white (without any printed patterns). This method absorbs excess water very effectively and accelerates drying. This method can even be used immediately after rinsing, eliminating the need for the wetting agent bath.

## 5.) Shelf Life, Capacity and Storage of the Concentrate and Working Solutions

**a)** The Ultratech A Part A concentrate has a shelf life of approximately 2 to 2.5 years when unopened. Please note that the concentrate should not be stored in the refrigerator (risk of precipitation). Concentrates should therefore generally not be stored below approximately 13 °C. The Ultratech A Part B concentrate, on the other hand, has a virtually unlimited shelf life, as it contains no oxidizable developer substances.

With 2 x 100 ml of SPUR Ultratech A, 5 to 12 rolls of SPUR UltraPan 20 film can be developed, depending on the sensitivity setting.

**b)** Prepared working solutions do not keep well and should be used shortly after preparation. Consequently, only the amount of AL necessary for the current development should be prepared.

With 250 ml of working solution, one 35mm film can be developed. After that, the working solution can no longer be used. We recommend developing only one or at most two films per development cycle.