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## Data Sheet SPUR TRX 2000

**SPUR TRX 2000 is a new developer that combines the features of a high-speed developer and a push developer.** In contrast to conventional push developers, **SPUR TRX 2000** is characterized not only by unusually detailed shadows, even at maximum film speed, but also by **tonal values which are otherwise only possible when developing to nominal film speed.**

The difference with SPUR Speed Major is that **tonality and the density curve** have been optimized as much as possible. For this purpose, **SPUR TRX 2000** was tuned to slightly less contrast, so that in some films, the highest achievable film speed is slightly lower compared to SPUR Speed Major. **Tonality and density curve, however, are significantly improved.**

**SPUR TRX 2000** was especially tuned to the Kodak Tri X emulsion (Kodak TX 400) and achieves phenomenal results especially (but not only) with this film.

The working solutions used to determine the film speed and contrast values were prepared with distilled water. When using harder water, the development times must be significantly extended depending on the degree of hardness.

**The times in the table usually refer to a development temperature of 20°C (293K) and to achieve a normal contrast (N). Only at the push sensitivities the contrast is slightly higher.**

**Other filling temperatures than 20°C are listed in the table under the heading "Developing Time".**

**The agitation rhythm is: The first 30 seconds permanently, then as described in the table.**

**Caution:** All temperatures higher than 20°C represent the **filling temperature** of the working solution. Keeping this temperature constant (eg in a warm water bath) during development is **not** necessary, but on the contrary would distort the results. It is only necessary to ensure that the development takes place in a room with a normal room temperature of approx. 20°C to 21°C (293K to 294K). If the development takes place in the summer at higher room temperatures, the development time must be reduced accordingly. It should be noted that the higher the room temperature on one hand and the higher the filling temperature on the other hand, the more the developing time has to be reduced.

In the range of the nominal film speed, the film speed was determined according to the zone system or the ISO standard. The higher film speeds or push speeds correspond to the following definition: Skin tones (zone VI in the zone system) must have an equivalent density as N development at nominal sensitivity, ie a density of approx.  $D = 0.9$ .

So far, we have only tested the push sensitivities of some films, and only with the films listed with several different film speeds in the table. **If only one film speed is listed, it will conform to the ISO standard or zone system, even if it is higher or lower than the nominal film speed.** For example, the Rollei RPX 400 has a speed of ISO 800/30° by ISO-standard, while the JCH Street Pan 400 only reaches ISO 80/20°.

Film speed and contrast were determined by measurement by means of a densitometer directly on the developed film, which corresponds approximately to the measurement under a diffuser enlarger.

When using condenser enlargers, not only the contrast levels but also the resulting film speeds are much higher, depending on the emulsion up to one stop. Therefore, it is recommended to reduce the development time by about 15% when using condenser enlargers.

Other film speeds for the pushable films will be tested in the future. The data sheet will therefore be updated accordingly.

# Developing Table

*ADOX HR-50 loses 2 f-stops when exposed with a bright red filter. When exposed with a dark red filter, 2.5 f-stops are lost (exactly: 8 DIN or eight 1/3 stops).*

| Manufacturer/Film   | Film Speed ISO | Dilution | Developing Time (min) | Inversion tact      |
|---|----------------|----------|-----------------------|---------------------|
| ADOX HR-50  | 50/18°         | 1 + 49   | 11 22° C              | Once each min       |
| Speed Boost   | 64/19°         | 1 + 49   | 13 24° C              | Once each min       |
| ADOX Silvermax  | 200/24°        | 1 + 30   | 15                    | Twice every two min |
| Agfaphoto APX 100 New   | 160/23°        | 1 + 35   | 10                    | Once each min       |
| Agfaphoto APX 400 New   | 400/27°        | 1 + 24   | 13,5                  | Twice each min      |
| Bergger Panchro 400   | 250/25°        | 1 + 19   | 14                    | Twice each min      |
| Fomapan 100   | 100/21°        | 1 + 40   | 12                    | Once each min       |
| Fomapan 200   | 125/22°        | 1 + 35   | 12                    | Once each min       |
| Fomapan 400   | 200/24°        | 1 + 30   | 15                    | Twice every two min |
| # Foma Retropan 320   | 125/22°        | 1 + 20   | 13                    | Twice every 30 sec  |
| FOTOIMPEX CHM 100   | 160/23°        | 1 + 35   | 10                    | Once each min       |
| FOTOIMPEX CHM 400   | 400/27°        | 1 + 24   | 13,5                  | Twice each min      |
| Fuji ACROS 100  | 100/21°        | 1 + 35   | 11                    | Twice every two min |
| Ilford Pan F+   | 25/15°         | 1 + 49   | 10                    | Once every two min  |
| Ilford FP4+   | 200/24°        | 1 + 35   | 9                     | Once each min       |
| Ilford HP5+   | 400/27°        | 1 + 30   | 12                    | Once each min       |
|   | 1000/31°       | 1 + 14   | 15                    | Twice every two min |
| Ilford Delta 100  | 100/21°        | 1 + 40   | 10                    | Twice every two min |
| Ilford Delta 400  | 400/27°        | 1 + 30   | 13                    | Once each min       |
| # # Ilford Delta 3200   | 800/30°        | 1 + 20   | 13                    | Twice each min      |
| Ilford SFX 200  | 100/21°        | 1 + 30   | 10,5                  | Once each min       |
| JCH Street Pan 400  | 80/20°         | 1 + 30   | 10                    | Once each min       |
| Kentmere 100  | 160/23°        | 1 + 35   | 10                    | Once each min       |
| Kentmere 400  | 400/27°        | 1 + 24   | 13,5                  | Twice each min      |
| Kodak Tmax 100  | 100/21°        | 1 + 30   | 12                    | Twice every two min |
| Kodak Tmax 400  | 400/27°        | 1 + 30   | 11,5                  | Once each min       |
|   | 800/30°        | 1 + 24   | 15                    | Twice every two min |
|   | 1250/32°       | 1 + 14   | 17 24° C              | Twice every two min |
| Kodak Tmax P3200  | 1000/31°       | 1 + 30   | 15                    | Once each min       |
|   | 1600/33°       | 1 + 24   | 14                    | Once each min       |
| Kodak Tri X   | 400/27°        | 1 + 24   | 12                    | Once each min       |
|   | 800/30°        | 1 + 19   | 12,5                  | Once each min       |
|   | 1250/32°       | 1 + 17   | 13                    | Once each min       |
|   | 1600/33°       | 1 + 14   | 14                    | Once each min       |
| Kodak Double X  | 400/27°        | 1 + 30   | 14                    | Twice every two min |
|   | 800/30°        | 1 + 24   | 15                    | Once each min       |
|   | 1000/31°       | 1 + 20   | 15 24° C              | Twice every two min |
| Orwo UN 54  | 160/23°        | 1 + 35   | 13                    | Twice every two min |
| # # # Orwo N 74   | 400/27°        | 1 + 30   | 11                    | Twice every 30 sec  |
| Rollei Infrared   | 80/20°         | 1 + 30   | 12,5                  | Twice every two min |
| Rollei Ortho 25<br><i>Alte Emulsion</i><br>(unbedingt vorwässern) | 50/18°         | 1 + 49   | 13                    | Twice every two min |
| Rollei Ortho 25 <i>plus</i>                                       | 160/23°        | 1 + 49   | 15                    | Twice every two min |
| Rollei RPX 25   | 25/15°         | 1 + 40   | 10                    | Once each min       |
| Rollei RPX 100  | 200/24°        | 1 + 35   | 12                    | Once every two min  |
| Rollei RPX 400  | 800/30°        | 1 + 17   | 14                    | Twice each min      |
| Rollei Retro 80 S   | 25/15°         | 1 + 40   | 10                    | Once each min       |
| Rollei Superpan 200   | 80/20°         | 1 + 30   | 12,5                  | Twice every two min |

# extremely soft contrast (N - 3)      # # very soft contrast (N - 2)      # # # soft contrast (N - 1)

These three soft contrast films, cannot reach normal contrast (N)!

**Explanation:** SPUR TRX 2000 is tuned for optimal tonal values and works a bit softer. Therefore, in many films, even at higher film speeds, a perfect density curve with good light differentiation can be achieved. This is achieved in the various films by varying the dilution, the developing time and the inversion rhythm. **The soft tuning of the developer, which is necessary for this purpose, does not allow normal contrast in the case of the aforementioned 3 soft films.**