

### Appendix 3 to the Basic Criteria RAL-UZ 148

#### **Calculation of Chromium and Sulfide in the Partial Stream taking into account the Degradation Rate of the Sewage Treatment Plant**

$C_{RohT}$ : Concentration of chromium or sulfide, respectively, in the partial stream before discharge into the sewage treatment plant  
 $C_{Roh}$ : concentration of chromium or sulfide of mixed wastewater at the inlet of the sewage treatment plant  
 $C_{Rein}$ : concentration of chromium or sulfide at the discharge of the sewage treatment plant  
 $\eta$ : degradation rate of the sewage treatment plant in %

The degradation rate of the sewage treatment plant can be calculated using the following formula:

$$\eta = ((C_{Roh} - C_{Rein}) / C_{Roh}) * 100\%$$

The concentration of chromium and sulfide in the respective partial stream can be calculated using the following formula:

$C_{ReinT}$ : concentration of chromium or sulfide in the partial stream at the discharge of the sewage treatment plant

$$C_{ReinT} = C_{RohT} - ((\eta / 100 \%) * C_{RohT})$$

#### **Example Calculations**

Chromium				
$C_{RohT}$	$C_{Roh}$	$C_{Rein}$	$\eta$ (in %)	$C_{ReinT}$
[mg/l]	[mg/l]	[mg/l]		[mg/l]
15.38	7.23	0.71	90.18	<b>1.51</b>

Result: The limit (1 mg/l) is **not** met.

Sulfide				
$C_{RohT}$	$C_{Roh}$	$C_{Rein}$	$\eta$ (in %)	$C_{ReinT}$
[mg/l]	[mg/l]	[mg/l]		[mg/l]
5.88	3.13	0.37	88.18	<b>0.70</b>

Result: The limit (2 mg/l) is met.