

Information Data Sheet

Detector Tube **SF₆ Decomposition Products**

Part No. (US): **804433**

Part No. **D5085838**

1. Application

Detection of decomposition products - which act as reducing agent - in the sulfur hexafluoride (SF₆) insulation gas blanket used in high voltage switchgear. These decomposition products are produced by sparks or arcing. They consist, among others, of sulfur tetrafluoride (SF₄), disulfur difluoride (S₂F₂), disulfur decafluoride (S₂F₁₀) and in presence of oxygen or oxygen compounds (e.g. water vapor), of thionyl fluoride (SOF₂) and sulfur dioxide (SO₂).

2. Detector Tube Sampling Pump

KWIKDRAW (Formerly MSA AUER) sampling system for detecting SF₆ decomposition products. Operation according to included instructions for use.

The pressure reducer of the sampling device is adjusted to a fix pressure of 50 mbar and supplies a constant air flow approx. 3 l/min against atmospheric ambient pressure. This is equivalent to a constant flow of approx. 0.12 l/min of sulfur hexafluoride through the detector tube.

3. Measuring Range

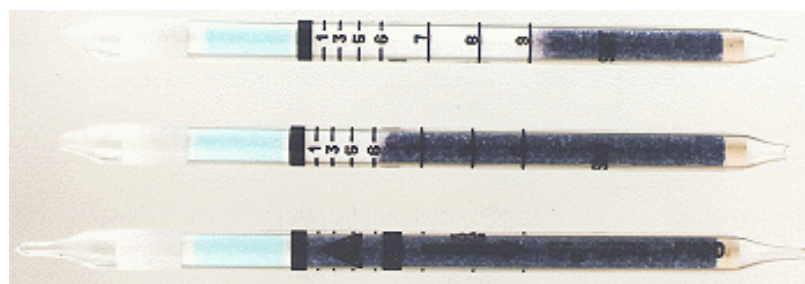
0.1 ppm ...15 ppm expressed as sulfur dioxide (SO₂), for a gas-sample of approx. 0.6 l.

scale values (SKT)	1	2	3	4	5	6	7	8	9
concentration of SF ₆ -decomposition (ppm)	0,5	1	2	3	4	6	9	12	15

4. Chemical Reaction and Color Change

Reaction of SF₆ decomposition products, containing bivalent or tetravalent sulfur, with iodine. Iodine is reduced to iodide. Sulfur hexafluoride does not react.

Color change: Violet → White



5. Ambient Conditions During Sampling

Detector tubes can be used without compensation of the reading between 5°C and 35°C (41°F and 95°F) and up to 90% rh (36g/m³ at 35°C [95°F])

6. Interferences and Cross Sensitivities

The sum of all reducing decomposition products will be expressed as sulfur dioxide (SO₂).

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