

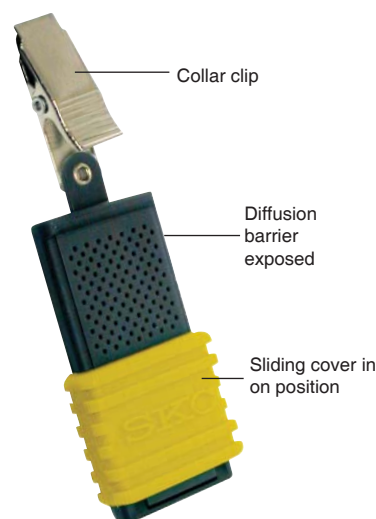
UMEX²⁰⁰

Passive Sampler

Sulfur Dioxide and Nitrogen Dioxide Sampling

- **Accurate, reliable personal sampling**
- **Ready to use**
- **Lightweight sampler clips easily in the breathing zone**
- **Economical**
 - No pump or training required
 - Low-cost sampler
 - Sample medium and blank/correction in one unit
- **Safe — no glass or chemical liquids in the sampler**
- **Accurately measures personal workplace exposure to sulfur dioxide and/or nitrogen dioxide**
- **3-week sample storage at ambient temperature**

The SKC UME^X 200 Passive Sampler effectively collects sulfur dioxide (SO₂) using a sampling rate of 15.1 ml/min and/or nitrogen dioxide (NO₂) at 12.83 ml/min. The sample medium (tape treated with triethanolamine [TEA]) and a “blank/correction” section of tape are contained in one sampler saving time and money. The lightweight UME^X 200 clips in the breathing zone for easy personal sampling. The single-use samplers are provided in individual aluminized pouches that can be used to transport the sampler to a laboratory. The label on the outside of each pouch contains the shelf-life date for easy inventory management.



UMEX²⁰⁰ Sampler with sliding cover in “on” position

Using the UME^X 200 Passive Sampler

Sampling with the UME^X 200 Passive Sampler for sulfur dioxide and/or nitrogen dioxide is easy and requires no pump or training. Simply remove the sampler from the pouch, record sampling information, and slide the cover to the “on” or sampling position. Clip the sampler on a worker for personal sampling up to eight hours. When sampling is complete, slide the cover to the “off” position, place the sampler back in the pouch immediately, and seal. Send the sampler to an accredited laboratory for analysis by ion chromatography (IC) with conductivity detection. The UME^X 200 sampler is designed for single use only. Do not reuse UME^X samplers.



UMEX²⁰⁰ Passive Sampler

Sulfur Dioxide and Nitrogen Dioxide Sampling

Occupational Sources of Sulfur Dioxide

Sulfur dioxide is a by-product from several industrial processes including:

- Sulfide or copper ore smelting
- Sulfur-containing coal or fuel oil combustion
- Paper manufacturing
- Petroleum refining
- Fertilizer manufacturing

Sulfur dioxide is used as a(n):

- Intermediate in sulfuric acid manufacture
- Bleaching agent
- Disinfectant
- Fumigant
- Solvent
- Refrigerant
- Food preservative
- Reagent in the manufacture of magnesium, sodium sulfite, and other chemicals

Occupational Sources of Nitrogen Dioxide

Nitrogen dioxide is a by-product from several industrial processes including:

- High-temperature combustion process
 - > Automobiles
 - > Power plants
- Home heaters
- Gas stoves
- Welding
- Tobacco smoke

Nitrogen dioxide is used as a(n):

- Intermediate in nitric and sulfuric acid production
- Oxidizing agent or catalyst
- Polymerization inhibitor for acrylates
- In the nitration of organic compounds and explosives
- In the manufacturing of oxidized cellulose compounds (hemostatic cotton)
- Oxidizing agent in rocket propulsion

Other UME^X Passive Samplers Available

The same convenient and economical UME^X design is also available for sampling formaldehyde/other aldehydes (**UMEX¹⁰⁰**) and amines (**UMEX⁴⁰⁰**). Contact SKC for more information or visit www.skcinc.com.

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Performance Profile

Sampling rate

Sulfur Dioxide: 15.1 ml/min with a relative standard deviation of 16.7%

Nitrogen Dioxide: 12.83 ml/min with a relative standard deviation of 13.4%

Validated concentration range for SO₂ and/or NO₂:

NO₂: 0.4 to 8 ppm

Analysis method for

SO₂ and/or NO₂: Solvent extraction and IC analysis

Lower detection limits

for SO₂ and/or NO₂:

- 15 minutes: 2 ppm
- 8 hours: 0.1 ppm

Shelf-life:

18 months from date of manufacture at ambient temperature

Storage:

Before use: Ambient temperature
After use: Analyze within 3 weeks.
Can be stored at ambient temperature or at ≤ 39.2 F (4 C)

Accuracy

(SO₂ and/or NO₂): ± 30%

Temperature effects:

No effect on sampling rate between 20 and 25 C

Humidity effects:

No effect from 20 to 80% relative humidity

Wind effects:

No effect from 0.05 to 1.0 m/s

Interferences:

None identified

Dimensions:

3.4 x 1.1 x 0.35 in
(8.6 x 2.8 x 0.89 cm)

Weight:

0.38 oz (10.9 gm)

Slide cover:

Yellow

Ordering Information

Description	Cat. No.
UMEX²⁰⁰ Passive Sampler for Sulfur Dioxide and/or Nitrogen Dioxide[†] , individually packaged in aluminized pouch, pk/10	500-200

* Limited shelf-life. Do not store with food.

† Designed for single use only. Do not reuse UME^X samplers.

