

## WHAT IS AIR QUALITY INDEX (AQI)?

The AQI is an index for reporting daily air quality. It indicates how clean or polluted air is, and what associated health effects might be a concern for people. The AQI focuses on health effects people may experience within a few hours or days after breathing polluted air.

### CURRENT SURVEILLANCE:

Osan AB Bioenvironmental Engineering (BE)

#### Flight:

BE monitors AQI levels obtained at an air monitoring station operated by local authorities in Songbukdong. This monitoring station is operational as of December 2018, and is located less than 0.8 miles away from Osan AB.

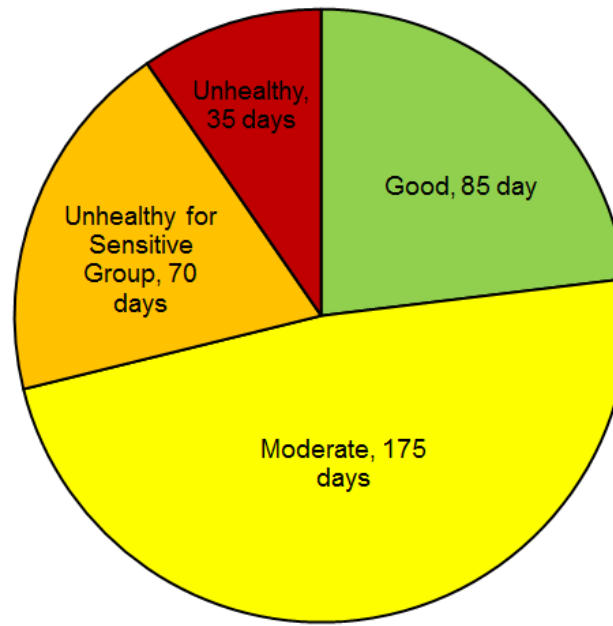
### FUTURE SURVEILLANCE:

Environmental Threat Analysis Knowledge System (ETAKS):

ETAKS is a BE monitoring system that allows remote monitoring of ambient parameters across the installation. In April 2019 ten standalone monitoring nodes are set to be installed across Osan AB. Each monitor will record and provide real time results for PM2.5. BE will be able to monitor each station from the BE office. All data will be stored and used for future analytics, e.g. health risk assessments, longitudinal health records etc.

## 2018 AQI AT OSAN:

PM2.5 January- December 2018: Results were recorded and annotated by BE.



#### Days in AQI Category:

Good	85
Moderate	175
Unhealthy For Sensitive Group	70
Unhealthy	35

#### REFERENCES:

1. EPA <https://www.epa.gov/pm-pollution>
2. 51 FW/CC Mask Policy Memo <https://osan.eis.pacaf.af.mil/51FW/51MDG/AMDS/SitePages/Bioenvironmental%20Engineering%20Flight.aspx>

## AIR QUALITY INDEX INFORMATIONAL GUIDE



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## DO I NEED TO BE CONCERNED?

While it's always smart to pay attention to air quality where you live, some people may be at greater risk from particle pollution. They include:

- People with cardiovascular disease (diseases of the heart and blood vessels)
- People with lung disease, including asthma and chronic obstructive pulmonary disease (COPD)
- Children and teenagers
- Older adults
- Research indicates that obesity or diabetes may increase risk.
- New or expectant mothers may also want to take precautions to protect the health of their babies.

## HOW CAN YOU CHECK THE AQI?

Websites:

- **Osan City**  
<http://aqicn.org/city/korea/gyeonggi/osan-si/>
- **Pyeongtaek City**  
<http://aqicn.org/city/korea/gyeonggi/pyeongtaek-si/>

Naver is the current application used by BE personnel to get the most accurate readings for Osan AB. Instructions for the Naver application can be found on the BE SharePoint page:

<https://osan.eis.pacaf.af.mil/51FW/51MDG/AMDS/SitePages/Bioenvironmental%20Engineering%20Flight.aspx>

Mobile Apps:  
Air Visual



Naver



Breezometer



## HOW CAN YOU CHECK PM 2.5?

- **SPRINTARS:** <https://sprintars.riam.kyushu-u.ac.jp/forecast.html>

## WHAT IS PARTICLE POLLUTION?

Primary particulate matter (PM) sources are derived from both human and natural activities. Fine particles (2.5 micrometers in diameter and smaller, a.k.a. PM2.5) come from power plants, industrial processes, vehicle tailpipes, woodstoves, and wildfires. Coarse particles (between 2.5 and 10 micrometers, a.k.a. PM10) come from crushing and grinding operations, road dust, and some agricultural operations.

Secondary PM sources directly emit air contaminants into the atmosphere. Hence, these pollutants are considered precursors to PM formation. These secondary pollutants include sulfur oxides, nitrogen oxides, volatile organic chemicals, and ammonia. Control measures that reduce PM precursor emissions tend to have a beneficial impact on ambient PM levels.

## WHY IS PARTICLE POLLUTION A PROBLEM?

Particle pollution is linked to a number of health problems, including coughing, wheezing, reduced lung function, asthma attacks. Those with underlying medical conditions may have heart attacks and strokes. It also is linked to early death.

## HOW CAN I PROTECT MYSELF?

Use AQI forecasts to plan outdoor activities. On days when the AQI forecast is unhealthy, take simple steps to reduce your exposure:

**Choose a less-strenuous activity**

**Shorten your outdoor activities**




**Reschedule activities**

**Spend less time near busy roads**

Wear a protective mask— **51FW AUTHORIZED MASKS:** National Institute of Occupational Safety and Health (NIOSH)-approved masks with N-95 or

higher filtration ratings are authorized in uniform when AQI is reported as “Orange” (AQI value of 101-150, Unhealthy for Sensitive Populations) or higher for PM. The Korean Ministry of Food and Drug Safety equivalent masks with KF-94 ratings, or higher, are suitable substitutes. Masks must be solid white or black in color, and they must cover both mouth and nose at all times during wear, but may not cover ears or eyes. See 51 FW Policy Memo for more details:

<https://osan.eis.pacaf.af.mil/51FW/51MDG/AMDS/SitePages/Bioenvironmental%20Engineering%20Flight.aspx>

  		
Air Quality Guide for Particle Pollution		
Good	0-50	None
Moderate	51-100	Unusually sensitive people should consider reducing prolonged or heavy exertion.
Unhealthy for Sensitive Groups	101-150	People with heart or lung disease, older adults, and children should reduce prolonged or heavy exertion.
Unhealthy	151-200	People with heart or lung disease, older adults, and children should avoid prolonged or heavy exertion. Everyone else should reduce prolonged or heavy exertion.
Very Unhealthy	201-300	People with heart or lung disease, older adults, and children should avoid all physical activity outdoors. Everyone else should avoid prolonged or heavy exertion.