M8 Paper

GENERAL DESCRIPTION:

M8 chemical detection papers were originally developed for the military to detect liquid nerve and blister agents. M8 paper is a chemically-treated, dye-impregnated paper used to detect liquid substances for the presence of V- and G-type nerve agents and H- and L-type blister agents.

TECHNICAL DESCRIPTION:

M8 paper is a chemically-treated, dye-impregnated paper used to detect liquid substances for the presence of V- and G-type nerve agents and H- and L-type blister agents. These papers contain three soluble dyes integrated into cellulose fiber strips. Each dye only reacts with one of the agents, producing a particular color within about 30 seconds. The paper is only sensitive to liquids, not vapors. Exposure to a blister agent turns the paper red, G-type nerve agents turn the paper yellow, and V-type nerve agents turn the paper dark green. Agents do not react directly with the dyes in M8 paper, but rather, dyes react to the unique acidity of each of the agents to produce the color change in a manner similar to litmus paper.

CONTACT INFORMATION

Tradeways
www.GasMasks.com

COST

- $1/system
- $1/analysis

Tier Selection

Final tier assignment is based on overall product score.

- 🟢 Top Tier
- 🟢 Second Tier
- ⚪ Third Tier
- 🔴 Fourth Tier
- 🔴 Bottom Tier

RANKINGS

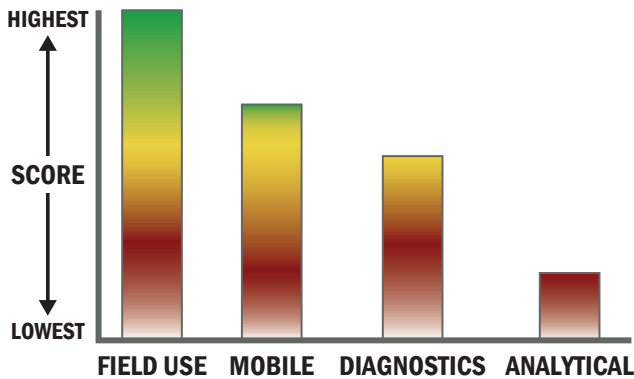|	Biological	Chemical	Radiological
FIELD USE System	N/A	Second Tier	N/A
MOBILE Laboratory	N/A	Fourth Tier	N/A
DIAGNOSTIC Laboratory	N/A	Bottom Tier	N/A
ANALYTICAL Laboratory	N/A	Bottom Tier	N/A

Survey Source

Open Source Information/ Subject Matter Expert

Scoring Analysis

System scores are compared across the four scenarios and ranked from highest to lowest.

Impact Chart

The Impact Chart is a spider graph representing specific categories and designed to give the reader a visual depiction of how a particular system is expected to operate across the four different scenarios. The score for each of the seven categories is presented as the percentage of the total possible score. Higher category scores extend the spokes of a graphic toward the outer edge of the chart. The area graphed for each of the four scenarios relates to how well the system performed in that scenario. Graphics for each of the four scenarios are super-imposed for ease of comparison.


FIELD USE   MOBILE USE   DIAGNOSTIC USE   ANALYTICAL USE
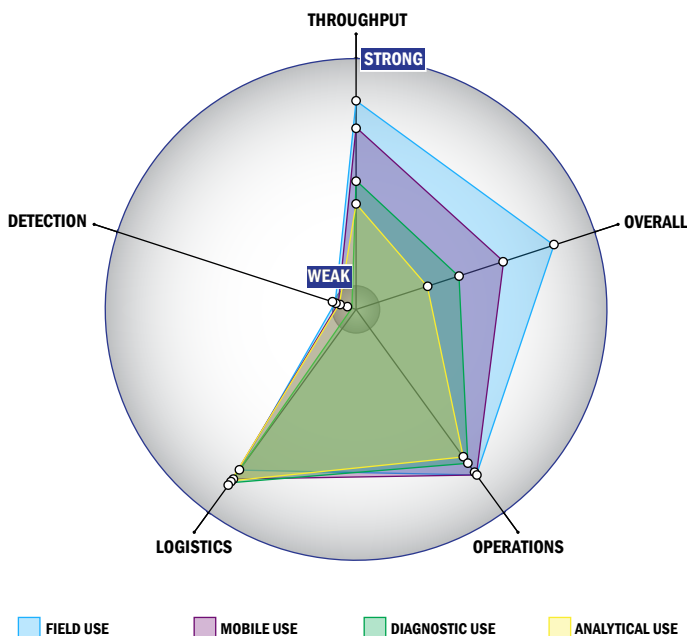
Evaluation Criteria

Throughput:
• Detection is instantaneous
• 1 sample, single test/ sample per run
• Less than 32 samples every 2 hour
• The system or approach is not amenable to full or semi-automation
• Device or system is designed for a single use
• 0-1 solutions, buffer, eluents, and/or reagents
• 0 components
• No set-up of the system is required
• Automatic detection

Logistics:
• Very brief (minutes-hours) training and minimal technical skills
• Approximately the size of a soda can
• Less than 1 kg
• This system is not capable of transmitting data
• There is no electrical requirement

MOST MATURE ← LEAST MATURE
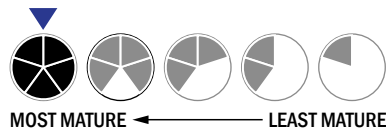
Operations:
• Can be used from < -21°C to > 42°C (All temperatures)
• This system does not require consumable components
• Performance is not influenced by relative humidity
• Greater than 3 years shelf life
• Results can be viewed in real-time
• The system is not capable of autonomy
• The system does not employ any software

Detection:
• Not possible for the system to achieve 510K clearance
• Not possible for the system to achieve FDA approval
• Less than 50 µl
• Poor specificity. System has a consistently high level of false alarms (>10%)
• 1 ppm–100 ppm for liquid sample
• Not possible to identify aerosolized chemical agent
• Currently identified liquid chemical agent