Flaw Detector Cleaner

Cleaner for Non-destructive Testing

Technical Data

Quick drying solvent cleaner/degreaser and excess penetrant remover for the non-destructive testing of metal surfaces by liquid penetrant inspection. Many cracks in engineering materials can be deep in spite of having a very small opening width on the surface and can cause very serious defects. By normal visual inspection such cracks may be very difficult to detect, but penetrant flaw detection is an extension of the visual inspection method highlighting otherwise invisible defects. The control is carried out using 3 products: Flaw Detector Cleaner, Flaw Detector Penetrant and Flaw Detector Developer.

Flaw Detector Cleaner is a fast drying, powerful degreasing solvent blend free of 1,1,1-trichloroethane or other chlorinated solvents for the removal of dirt, grime and contaminants. Designed for the pre-treatment of the surface, prior to liquid penetrant inspection and to remove all visible, colored traces of the penetrant.

PART NUMBER:
6190005600
6190006510
6190007510

FEATURES

- Quickly dissolves grease, oil, lubricants, tar and adhesives.
- Effective wash-away of contaminants and colored penetrant.
- Fast evaporation to minimize downtime.
- Leaves no residue.
- Stable, non-staining and non-corrosive.
- Safe on most plastics, coatings and rubbers (test prior to use).
- RCC-M Tome III Chap. MC4200 • ASME Code Section V •

APPLICATIONS

Non-destructive inspection of materials, parts, assemblies, equipment, surfaces or structures:

- Cracks, lack of fusion and open cavities in welded parts.
- Cracks and cavities caused by metal fatigue and cutting operations.
- Check of porosity or leaks in pipes, tanks, boilers, heat exchangers.
- Discontinuities, laps, folds and cracks in castings, forgings and ceramics.

DIRECTIONS

Do not use at ambient temperatures below 10°C.

- In liquid penetrant inspections, the test object or material is coated with a visible dye solution. The excess dye is removed from the surface and a developer is then applied. The developer acts like a blotter and draws penetrant out of the

imperfections of the surface. With visible dyes, the vivid colour contrast between the penetrant and the developer makes the 'bleed-out' easy to see.

- Cleaning of the surface - The surface to be checked must be clean, degreased and dry. All soiling like rust, oil, grease, paint etc, which can mask the imperfections, must be removed. Finish the cleaning by spraying Flaw Detector Cleaner generously. If possible wipe with an absorbent cloth and allow drying thoroughly.

- Penetrant application - Shake the can of Flaw Detector Penetrant prior to use. Spray the penetrant in a light, even film on the surface, wetting all areas to be controlled. Allow to drain for 10 to 20 minutes.

- Excess penetrant removal - Remove excess of penetrant by wiping the surface using a lint-free cloth. Apply water (Flaw Detector Penetrant is water washable) until all visible, coloured traces are removed. Care must be taken that only disturbing penetrant on the surface is removed. Dry properly.

- Development - Shake the can of Flaw Detector Developer thoroughly prior to use. Spray a light, homogeneous coat of developer from a distance of about 20 cm. Avoid any excess developer to avoid masking the finest flaws. Allow to develop for at least 7 minutes so that imperfections are visible.

- Visual inspection of defects - As time passes, the defects will appear as red spots or lines on a white background. The speed of appearance, the shape and dimensions can give information about the nature of the defects. If necessary, post-clean the controlled surface and protect against corrosion with one of Ambersil's corrosion protection products, such as Corrosion Inhibitor.

TECHNICAL DATA

Appearance	:	colorless liquid, typical odour
Specific gravity (@ 20°C)	:	0.716
Boiling range	:	55 - 120°C
Vapor density (vs air = 1)	:	3
Freezing point	:	< -30°C
Evaporation rate (vs ether = 1)	:	2.8
Flash point (closed cup)	:	< 0°C
Dynamic viscosity (@ 20°C)	:	0.5 mPa.s
Surface tension (@ 20°C, est.)	:	21 mN/m
Plastics compatibility	:	to be checked (*)
Non-volatiles	:	none
Packaging	:	400ml Aerosol

(*)Sensitive plastics (e.g. polystyrenes and polycarbonates, need to be checked, particularly when thermal or mechanical stress is involved.

STORAGE

The product may be stored at normal ambient temperatures and has a shelf life of not less than 72 months with correct storage. Aerosols should always be stored below 50^{O}C, away from direct heat and naked flame.

HEALTH AND SAFETY

Health and Safety sheet available separately.

TECHNICAL SERVICE

CRC Industries UK Ltd provides a technical support service and maintains a constant programme of research and development. We are able to assist customers by specific product development to meet particular requirements.

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Flaw Detector Penetrant
Penetrant for Non-destructive Testing

Technical Data

A red coloured liquid penetrant for the non-destructive testing of surfaces and structures. Many cracks in engineering materials can be deep in spite of having a very small opening on the surface, resulting in very serious or critical defects. Such cracks may be very difficult to detect by normal visual inspection and penetrant flaw detection provides an extension of the visual inspection method. The inspection is carried out using 3 products: Flaw Detector Cleaner, Flaw Detector Penetrant and Flaw Detector Developer. Flaw Detector Penetrant is a water washable liquid penetrant easily visible under natural white light.

FEATURES

- Inspection can be carried out with ready-to-use aerosols.
- Results are produced quickly and easily.
- An economical technology with no need for expensive and advanced equipment.
- A sensitive and reliable test method.
- Widely applicable, regardless the nature of the materials and shape of the objects.
- RCC-M Tome III Chap. MC4200 • ASME Code Section V •

APPLICATIONS

Non-destructive inspection of materials, parts, assemblies, equipment, surfaces and structures:

- Detects cracks, lack of fusion, and open cavities in welded parts.
- Finds cracks and cavities caused by metal fatigue and cutting operations.
- Checks for porosity or leaks in pipes, tanks, boilers, heat exchangers.
- Identifies discontinuities, folds and cracks in castings, forgings and ceramics.

DIRECTIONS

Do not use at ambient temperatures below 10^{O}C.

- In liquid penetrant inspections, the test object or material is coated with a visible dye solution. The excess dye is removed from the surface and a developer is then applied. The developer acts like a blotter and draws penetrant out of the imperfections of the surface. With visible dyes, the vivid colour contrast between the penetrant and the developer makes the 'bleed-out' easy to see.

- Cleaning of the surface - The surface to be checked must be clean, degreased and dry. All soil such as rust, oil, grease, paint etc, which can mask the imperfections, must be removed. Finish the cleaning by spraying Flaw Detector Cleaner generously. Wipe with an absorbent cloth and allow to dry thoroughly.

- Penetrant application - Shake the can of Flaw Detector Penetrant prior to use. Spray the penetrant in a light, even film on the surface, wetting all areas to be inspected. Allow to drain for 10 to 20 minutes.

- Excess penetrant removal - Remove excess of penetrant by wiping the surface using a lint-free cloth. Apply water (Flaw Detector Penetrant is water washable) until all visible, coloured traces are removed. Care must be taken that only penetrant on the surface is removed. Dry properly.

- Development - Shake the can of Flaw Detector Developer thoroughly prior to use. Spray a light, homogeneous coat of Developer from a distance of about 20 cm. Avoid any excess Developer (to avoid masking the finest flaws). Allow to develop for at least 7 minutes so that imperfections are visible.

- Visual inspection of defects - Defects will appear as red spots or lines on a white background. The speed of appearance, the shape and dimensions, can give information about the nature of the defects. If necessary, after inspection clean the surface with cleaner, and protect against corrosion with one of Ambersil's corrosion protection products such as Ambersil Corrosion Inhibitor.

- NOTE: When used on certain magnesium alloys, light discolouration may occur after extremely prolonged time with Flaw Detector Penetrant.

TECHNICAL DATA

Appearance	:	red liquid
Odour	:	solvent
Specific gravity (@ 20°C)	:	0.816
Boiling range (solvent)	:	180 - 250°C
Flash point liquid	:	> 70°C
Auto-ignition temperature	:	> 200°C
Solubility in water	:	water washable
Packaging	:	12 x 400ml

STORAGE
The product may be stored at normal ambient temperatures and has a shelf life of not less than 72 months with correct storage. Aerosols should always be stored below 50^{O}C, away from direct heat and naked flame.

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Flaw Detector Developer
Developer for Non-destructive Testing

Technical Data

A quick drying developer, for the non-destructive testing of surfaces and structures. Many cracks in engineering materials can be deep in spite of having a very small opening on the surface, and can cause very serious or critical defects. By normal visual inspection such cracks may be very difficult to detect, but penetrant flaw detection is an extension of the visual inspection method. The inspection is carried out using 3 products: Flaw Detector Cleaner, Flaw Detector Penetrant and Flaw Detector Developer. Flaw Detector Developer is a dispersion of a white powder in a fast evaporating solvent, giving a high contrast visual reference.

FEATURES

- The inspection can be carried out with ready-to-use aerosols.
- Results are produced quickly and easily.
- An economical technology with no need for expensive and advanced equipment.
- A sensitive and reliable test method.
- Widely applicable, regardless the nature of the materials and shape of the objects.
- RCC-M Tome III Chap. MC4200 • ASME Code Section V •

APPLICATIONS

Non-destructive inspection of materials, parts, assemblies, equipment, surfaces and structures:

- Detects cracks, lack of fusion, and open cavities in welded parts.
- Finds cracks and cavities caused by metal fatigue and cutting operations.
- Check for porosity or leaks in pipes, tanks, boilers, heat exchangers.
- Discontinuities, laps, folds and cracks in castings, forgings and ceramics.

DIRECTIONS

Do not use at ambient temperatures below 10^{O}C.

- In liquid penetrant inspections, the test object or material is coated with a visible dye solution. The excess dye is removed from the surface and a developer is then applied. The developer acts like a blotter and draws penetrant out of the imperfections of the surface. With visible dyes, the vivid colour contrast between the penetrant and the developer makes the 'bleed-out' easy to see.

- Cleaning of the surface - The surface to be checked must be clean, degreased and dry. All soil such as rust, oil, grease, paint etc, which can mask the imperfections, must be removed. Finish the cleaning by spraying Flaw Detector Cleaner generously. If possible wipe with an absorbent cloth and allow to dry thoroughly.

- Penetrant application - Shake the can of Flaw Detector Penetrant prior to use. Spray the penetrant in a light, even film on the surface, wetting all areas to be inspected. Allow to drain for 10 to 20 minutes.

- Excess penetrant removal - Remove excess of penetrant by wiping the surface using a lint-free cloth. Apply water (Flaw Detector Penetrant is water washable) until all visible, coloured traces are removed. Care must be taken that only penetrant on the surface is removed. Dry properly.

- Development - Shake the can of Flaw Detector Developer thoroughly prior to use. Spray a light, homogeneous coat of Developer from a distance of about 20 cm. Avoid any excess Developer (to avoid masking the finest flaws). Allow to develop for at least 7 minutes so that imperfections are visible.

- Visual inspection of defects - As time passes, the defects will appear as red spots or lines on a white background. The speed of appearance, the shape and dimensions, can give information about the nature of the defects. If necessary, after inspection clean the surface with cleaner, and protect against corrosion with one of Ambersil's corrosion protection products such as Ambersil Corrosion Inhibitor.

TECHNICAL DATA

Appearance	:	powder dispersed in a solvent blend
Color	:	white
Odour	:	solvent
Application temperature	:	> 10°C
Specific gravity (@ 20°C)	:	0.781
Boiling range (solvent)	:	40 - 65°C
Flash point liquid	:	< 0°C
Auto-ignition temperature	:	> 200°C
Solubility in water	:	not soluble
Packaging	:	400ml Aerosol

STORAGE
The product may be stored at normal ambient temperatures and has a shelf life of not less than 72 months with correct storage. Aerosols should always be stored below 50^{O}C, away from direct heat and naked flame.

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