

# Visible Dye Penetrant Flaw Detection Materials

## Super-Check

Super-Check contributes to the improvement of working environment and the upgrading of the flaw detection accuracy !



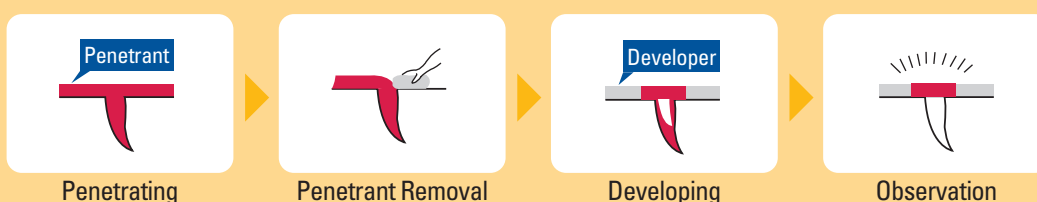
### Features

- Flaw detection accuracy is pursuant to JIS and ASME code
- Not applicable to Japanese Organic Solvent Toxicity Prevention Regulation and Japanese Industrial Safety and Health Law
- Enhancing occupational safety and health conditions and improving working environment
- Not applicable to Japanese Specific Chemical Substances Obstacle Prevention Regulations
- Faster formation of the flaw indication
- Excellent removability of Penetrant and Developer

### Application

- **Metallic Materials** Surface breaking flaws of rolled products (steel plates and sheets, steel bars and steel pipes), forgings, castings, welded part etc.
- **Non-metallic Materials** Surface breaking flaws of synthetic resins, porcelains, ceramics, glass etc.

### Principle of PT



## Visible Dye Penetrant Flaw Detection Materials

# Super Check



### Type and Application

Type and Application	Name of Product and combination	Removing Method of Penetrant	Features	Standard
For General Purpose	Penetrant UP-ST Remover UR-ST Developer UD-ST Developer UD-ST·V	Solvent Removable	Suitable for flaw detection of : <ul style="list-style-type: none"> <li>• all ferrous and non-ferrous materials</li> <li>• partial inspection of large structures and welded part</li> </ul> Qualified by Japanese Ministry of Defense  UD-ST·V is a fast drying type and suitable for inspection in low temperature or high humidity atmosphere	JIS
	Penetrant P-GⅢ (Exp) Developer UD-ST	Water Washable	Low inspection cost Suitable for flaw detection of raw materials, ceramics and large size parts	
	Penetrant UP-GⅢ·N Developer UD-ST Developer UD-ST·V	Water Washable	Low inspection cost Suitable for flaw detection of slabs, large size parts and mass-produced small parts	
	Penetrant P-LK Penetrant UP-GⅢ·W Developer D-LW Developer D-LW·K Developer D-LW·N		Applicable for inspection of parts with complicated shape P-LK and UP-GⅢ·W are Non-inflammable and easy water washable types D-LW, D-LW·K and D-LW·N are water dispersing type developers and suitable for inspection of slabs and large size parts	
Low Halogen, Low Sulfur type	Penetrant UP-T Remover UR-T Remover UR-T·M Developer UD-T Developer UD-T·V	Solvent Removable	Suitable for flaw detection of stainless steel, titanium alloys and nickel alloys (Sulfur : 10wtppm or less, Chlorine : 100wtppm of less, Fluorine : 30wtppm or less)  UD-T·V is a fast drying type and suitable for inspection in low temperature or high humidity atmosphere	JIS ASME
	Penetrant UP-GⅢ·T Remover AS-T Developer UD-T Developer UD-T·V	Water Washable	Suitable for flaw detection of : <ul style="list-style-type: none"> <li>• whole surface of large size parts made of stainless steel, titanium alloys and nickel alloys</li> <li>• parts with coarse surface</li> </ul> (Sulfur : 10wtppm or less, Chlorine : 100wtppm of less, Fluorine : 30wtppm or less)  AS-T is suitable for inspection of welded part and parts with complicated surface	
Non-inflammable Type	Penetrant UP-NU·G Remover UR-NU·G Developer UD-NU·G	Solvent Removable	Non-inflammable and restricted CFC free type	JIS

## Typical Properties and Classification of Japanese law and regulation

PENETRANT					
Name of Product	Specific gravity	Viscosity (cst)	Flash Point	Classification of Japanese Fire Prevention Law (4th category)	Japanese Organic Solvent Toxicity Prevention Regulation
UP-ST	0.84	2.6	Around 90°C	3rd Class oil (Non-water-soluble liquid)	Not Applicable
UP-T	0.84	2.7	Around 90°C	3rd Class oil (Non-water-soluble liquid)	Not Applicable
UP-GⅢ·N	0.85	3.3	Around 70°C	2nd Class oil (Water-soluble liquid)	Not Applicable
UP-GⅢ·T	0.85	3.3	Around 70°C	2nd Class oil (Water-soluble liquid)	Not Applicable
UP-GⅢ·W	1.01	3.4	—	Non-Flammable Liquid	Not Applicable
UP-NU·G	1.37	1.1	—	Non-Flammable Liquid	Not Applicable
P-GⅢ (Exp)	0.86	1.7	Around 55°C	2nd Class oil (Water-soluble liquid)	Applicable
P-LK	1.01	5.3	—	Non-Flammable Liquid	Not Applicable

REMOVER				
Name of Product	Specific gravity	Flash Point	Classification of Japanese Fire Prevention Law (4th category)	Japanese Organic Solvent Toxicity Prevention Regulation
UR-ST	0.69	Around -5°C	1st Class oil (Non-water-soluble liquid)	Not Applicable
UR-ST·M	0.73	Around 23°C	2nd Class oil (Non-water-soluble liquid)	Not Applicable
UR-T	0.69	Around -5°C	1st Class oil (Non-Water-soluble liquid)	Not Applicable
UR-T·M	0.73	Around 23°C	2nd Class oil (Non-Water-soluble liquid)	Not Applicable
UR-NU·G	1.49	—	Non-Flammable Liquid	Not Applicable
AS-T	1.00	—	Non-Flammable Liquid	Not Applicable

DEVELOPER				
Name of Product	Specific gravity	Flash Point	Classification of Japanese Fire Prevention Law	Japanese Organic Solvent Toxicity Prevention Regulation
UD-ST	0.83	Around -5°C	1st Class oil (Water-soluble liquid)	Not Applicable
UD-ST·V	0.82	Around -10°C	1st Class oil (Non-water-soluble liquid)	Not Applicable
UD-T	0.81	Around -5°C	1st Class oil (Water-soluble liquid)	Not Applicable
UD-T·V	0.82	Around -10°C	1st Class oil (Non-water-soluble liquid)	Not Applicable
UD-NU·G	1.42	—	Non-Flammable Liquid	Not Applicable
D-LW	—	—	Non-Flammable Liquid	Not Applicable
D-LW·K	—	—	Non-Flammable Liquid	Not Applicable
D-LW·N	1.06	—	Non-Flammable Liquid	Not Applicable

## Storage volume regulated by Japanese Fire Prevention Law (4th category)

Classification		Flash Point	Storable volume without special facility
1st Class oil	Non-water-soluble liquid	Below 21°C	200L
	Water-soluble liquid		400L
2nd Class oil	Non-water-soluble liquid	Over 21°C - below 70°C	1000L
	Water-soluble liquid		2000L
3rd Class oil	Non-water-soluble liquid	Over 70°C - below 200°C	2000L
	Water-soluble liquid		4000L
4th Class oil		Over 200°C - below 250°C	6000L
Alcohol			400L

## Caution for Handling and Storing

### 1. Safety Precaution

- ① Super-Check must be used at adequate ventilated places and away from sparks, fire or open flame.
- ② Penetrant, that is not applicable to Japanese Organic Solvent Toxicity Prevention Regulation, has high flash point (70°C or more) and is allowed to handle with the same caution as kerosene (flash point is 50°C or more according to JIS).
- ③ Aerosol (Spray can package) types require special storing and handling consideration;
  - Keep away from direct sunlight.
  - Do not heat up more than 40°C.
  - Do not use in the place with high ambient temperature or near fire.
  - Do not store or throw away in the place with high temperature since the aerosol can may burst due to the increase of internal gas pressure at 60°C or more.
  - Do not store in the place where it may come into contact with acid, alkali, mercury or other chemicals for causing corrosion or fragility.

### 2. Instructions for Use

- ① Super-Check must be kept in the sealed containers to prevent the volatilization of solvent. Take out an amount as much as is necessary for the inspection on the spot.
- ② Precaution for use of Aerosol Types;
  - Developer volatilizes differently depending on the temperature in summer and winter. Therefore, in order to make the smooth and uniform layer of Developer, the distance from the spray nozzle to the surface to be inspected should be controlled corresponding to the ambient temperature.  
After stored Developer for some period of time, the suspended particle of Developer tends to settle down in the bottom of the aerosol can.  
In such a case, the aerosol can should be well shaken prior to use until the steel balls in the aerosol can rattle.  
When the ambient temperature is less than 16°C, put the aerosol can into the warm water bath (less than 30°C) to warm up prior to use it.
  - Do not put the aerosol can upside down or horizontal position and keep the spray button pressing. It may cause the loss of aerosol pressure.

※ As to details, please refer to Material Safety Data Sheet (MSDS).

## Remarks

Applicable Area to be inspected	By Aerosol Can (type 450)	Penetrant : Approx. 12m <sup>2</sup> /1ea. Developer : Approx. 4.5m <sup>2</sup> /1ea.
	By Brushing (one liter can)	Penetrant : Approx. 33m <sup>2</sup> /liter Developer : Approx. 30m <sup>2</sup> /liter
Container Size	Aerosol Can Set (type 450)	Penetrant×1, Developer×2, Remover×3 Set consists of 6 cans in total.
	Penetrant	Aerosol Can (type 450), 1 liter Can, 18 liter Can
	Remover	
Specimen	Aluminum quenching crack specimen	In accordance with JIS

Integrated supplier of Non-Destructive Testing and Marking



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※ All specifications and designing are subject to change without notice.