MARKTEC

Visible dye penetrant products

Super Check / Eco Check

Super Check / Eco Check

Super Check/Eco Check by MARKTEC can detect flaws on any material such as metal, plastic, pottery, etc.

Super Check

The standard for visible dye penetrant products. It has built an outstanding reputation thanks to its good quality since its release.
Various types for diverse applications.

Eco Check

Based on our original ecological concept, we pursue safety for humans and the environment, and use natural materials and cosmetic materials for this visible dye penetrant product.

Super Check / Eco Check

Penetrates invisible flaws in various materials to detect them without fail. Super Check/Eco Check from MARKTEC ensures safety and reliability.

- We offer a range of products compatible with JIS*1 and compatible with ASME*2.
- Since the Ordinance on the Prevention of Organic Solvent Poisoning (OPOSP) does not apply to these products*3, they help improve occupational safety and health, as well as the work environment.
- Ordinance on the Prevention of Hazards due to Specified Chemical Substances (OPHSCS) does not apply to these products*3.

*1 JIS Z 2343-2 (compliant with ISO 3452-2) *2 ASME BPVC Section V *3 Except Super Check P-GIII(EXP)

◎See the combination table on the right when selecting a penetrant suitable for the application and cleaning method. For products not mentioned in this leaflet or for other details, contact our marketing department.

Scope of application

Metallic material

Flaws observed on rolled products (steel plate, steel bar, steel pipe), forged products, and welds

Non-metallic material

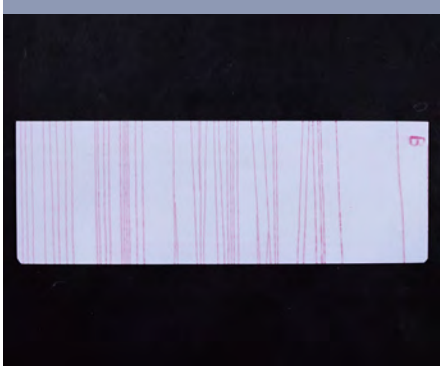
Flaws observed on the surface of plastic*4, pottery, porcelain, ceramic, and glass

*4 A check may be required before use.

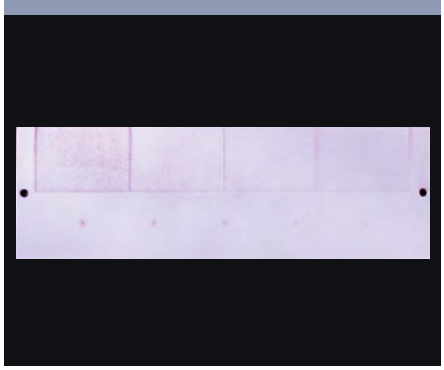
Test piece for penetrant test

Reference specimen specified in JIS Z 2343-3

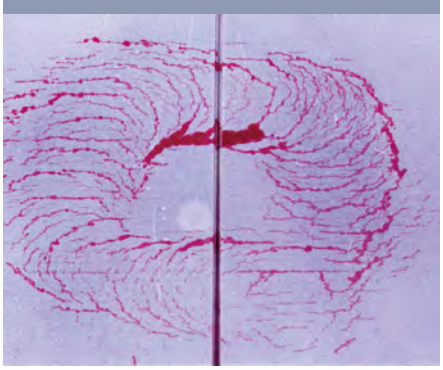
Type 1: JIMA PT TP-01
(Ni-Cr coating crack specimen)



Type 2: JIMA PT TP-02
(Ni-Cr coating specimen)



Type 3: JIMA PT TP-03
(AL burning crack specimen)



Combinations of products for various uses and cleaning methods

Super Check

Type	Method (Cleaning method)	Name of combination products		Compatible with JIS	Compliance with ASME	Feature
Standard	Method C Removal of solvent	Penetrant	UP-ST(J)	○		Standard type suitable for detecting flaws on any ferrous and nonferrous metals. Optimum for partial examination on a large structure or weld, because no special equipment is required. UR-ST·M: Safer type with higher flashing point UD-ST·V: Ultra quick-drying type suitable for low temperature and high humidity
		Cleaner/Remover	UR-ST	○		
		Cleaner/Remover	UR-ST·M			
		Developer	UD-ST	○		
		Developer	UD-ST·V	○		
	Method A Water washing	Penetrant	P-GIII(EXP)			Water washable penetrant suitable for detecting flaws on nonferrous metal materials, ceramics, and large test pieces.
		Developer	UD-ST	○		
		Penetrant	UP-GIII·NII			Water washable penetrant suitable for detecting flaws on slabs, large test pieces, and small mass-produced test pieces. Applicable to testing components with complex shapes.
		Developer	UD-ST	○		
		Developer	UD-ST·V	○		
Low halogen, low sulfur	Method C Removal of solvent	Penetrant	UP-T(J)	○	○	Low halogen and low sulfur penetrant suitable for detecting flaws on stainless steel, titanium alloys, and nickel alloys. UR-T·M: Safer type with higher flashing point UD-T·V: Ultra quick-drying type suitable for low temperature and high humidity
		Cleaner/Remover	UR-T	○	○	
		Cleaner/Remover	UR-T·M	○	○	
		Developer	UD-T	○	○	
		Developer	UD-T·V	○	○	
	Method A Water washing	Penetrant	UP-GIII·T(J)	○	○	Low halogen and low sulfur penetrant suitable for large objects made of stainless steel, titanium alloys, nickel alloys, or objects with a rough surface. AS-T: Water aerosol type
		Cleaner/Remover	AS-T	○	○	
		Developer	UD-T	○	○	
		Developer	UD-T·V	○	○	
Non-hazardous material	Method C Removal of solvent	Penetrant	UP-NU·G(J)	○		Penetrant which is non-hazardous, not subject to the Fire Defense Law, and incombustible, and which removes solvent
		Cleaner/Remover	UR-NU·G	○		
		Developer	UD-NU·G	○		
	Method A Water washing	Penetrant	P-LK			Water washable and incombustible penetrant suitable for detecting flaws on slabs or large test pieces Applicable to testing components with complex shapes. D-LW, D-LW·K: Powder type to be used after being dispersed in water D-LW·N: A type that does not require density control because the powder is already dispersed in water
		Penetrant	UP-GIII·W			
		Developer	D-LW			
		Developer	D-LW·K			
		Developer	D-LW·N			

Eco Check

Type	Method (Cleaning method)	Name of combination products		Compatible with JIS	Compliance with ASME	Feature
Standard	Method C Removal of solvent	Penetrant	EP-ST(J)	○		Standard-type ecological penetrant suitable for detecting flaws on any materials such as metallic and non-metallic materials.
		Cleaner/Remover	ER-ST	○		
		Developer	ED-ST	○		
	Method A Water washing	Penetrant	EP-W(J)	○		Ecological-type water washable penetrant made from natural materials and cosmetic materials, friendly to living things and the environment
		Developer	ED-ST	○		
Low halogen, low sulfur	Method C Removal of solvent	Penetrant	EP-T(J)	○	○	Low halogen and low sulfur penetrant suitable for detecting flaws on stainless steel, titanium alloys, and nickel alloys Ecological type friendly to living things and the environment ED-T·V: Ultra quick-drying type suitable for low temperature and high humidity
		Cleaner/Remover	ER-T	○	○	
		Developer	ED-T	○	○	
		Developer	ED-T·V	○	○	

* For products not listed in this table or for other details, contact our marketing department.

Table of major applicable regulations and our products

Super Check

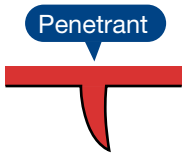
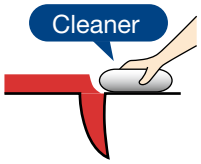
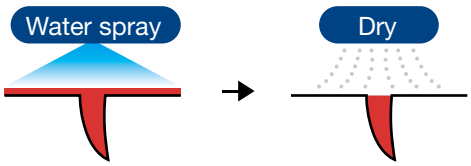
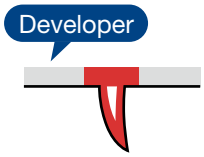
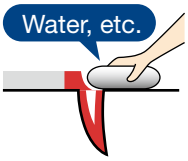
Product name		Fire Defense Law (Class 4)		OPHSCS	OPOSP	PRTR
		Name	Property			
Penetrant	UP-ST(J)	Class 3 petroleum	Non-water-soluble liquid	-	-	-
	UP-T(J)	Class 3 petroleum	Non-water-soluble liquid	-	-	-
	UP-GIII·T(J)	Class 2 petroleum	Water-soluble liquid	-	-	-
	UP-GIII·NII	Class 3 petroleum	Non-water-soluble liquid	-	-	-
	P-LK	-	-	-	-	-
	UP-GIII·W	-	-	-	-	-
	P-GIII(EXP)	Class 2 petroleum	Water-soluble liquid	Class 2, Class 2 Specified substances	Class 3 Organic solvents	Class 1 Designated chemical substance
	UP-NU·G(J)	-	-	-	-	Class 1 Designated chemical substance
Cleaner /Remover	UR-ST	Class 1 petroleum	Non-water-soluble liquid	-	-	-
	UR-ST·M	Class 2 petroleum	Non-water-soluble liquid	-	-	-
	UR-T	Class 1 petroleum	Non-water-soluble liquid	-	-	-
	UR-T·M	Class 2 petroleum	Non-water-soluble liquid	-	-	-
	AS-T	-	-	-	-	-
	UR-NU·G	-	-	-	-	Class 1 Designated chemical substance
Developer	UD-ST	Class 1 petroleum	Water-soluble liquid	-	-	-
	UD-ST·V	Class 1 petroleum	Non-water-soluble liquid	-	-	-
	UD-T	Class 1 petroleum	Water-soluble liquid	-	-	-
	UD-T·V	Class 1 petroleum	Non-water-soluble liquid	-	-	-
	D-LW	-	-	-	-	-
	D-LW·K	-	-	-	-	-
	D-LW·N	-	-	-	-	-
	UD-NU·G	-	-	-	-	Class 1 Designated chemical substance

Eco Check

Product name		Fire Defense Law (Class 4)		OPHSCS	OPOSP	PRTR
		Name	Property			
Penetrant	EP-ST(J)	Class 3 petroleum	Water-soluble liquid	-	-	-
	EP-T(J)	Class 3 petroleum	Non-water-soluble liquid	-	-	-
	EP-W(J)	Class 3 petroleum	Water-soluble liquid	-	-	-
Cleaner /Remover	ER-ST	Class 1 petroleum	Non-water-soluble liquid	-	-	-
	ER-T	Class 1 petroleum	Non-water-soluble liquid	-	-	-
Developer	ED-ST	Class 1 petroleum	Water-soluble liquid	-	-	-
	ED-T	Class 1 petroleum	Water-soluble liquid	-	-	-
	ED-T·V	Class 1 petroleum	Non-water-soluble liquid	-	-	-

* Data obtained in August 2018. Refer to the safety data sheet (SDS) for the latest information.

General penetrant test procedure

① Pretreatment		Completely remove contamination on the surface of the test piece (rust, oil, etc.) by remover/cleaner, washing with solvent or steam, and removing rust, to make the surface clean.
② Penetration treatment		Apply penetrant by spray or brush, and leave it for 5 to 60 minutes.
③ Removal	A. Removal of solvent  After wiping off excess penetrant with a dry shop cloth, wipe off the remaining penetrant with a shop cloth moistened with remover.	Or B. Water washing  Wash to remove the excess penetrant with water spray, and then completely remove (dry) the water on the surface with a shop cloth or dryer*. * A hot air circulation type dryer is recommended.
④ Development		Apply developer on the surface of the test piece thinly and uniformly by spray or brush. Shake (stir) the developer very well before using. The developing time is 10 to 30 minutes.
⑤ Examination		After the proper development time has elapsed, visually examine the test piece under natural light or white light. Flaws are indicated in red.
⑥ Post test treatment		Remove developer adhered to the surface of the test piece with water, etc. Deal with the specimen promptly after testing.

Quantity designated by Fire Defense Law (Class 4)

Name of classification	Property	Flashing point	Designated quantity
Class 1 petroleum	Non-water-soluble liquid	Under 21°C	200L
	Water-soluble liquid		400L
Class 2 petroleum	Non-water-soluble liquid	21 up to 70°C	1,000L
	Water-soluble liquid		2,000L
Class 3 petroleum	Non-water-soluble liquid	70 up to 200°C	2,000L
	Water-soluble liquid		4,000L
Class 4 petroleum		200 up to 250°C	6,000L
Alcohols			400L

* Check the local regulations because the quantity allowed to be stored is specified by the local government.

Notes on management and handling

1. Hazard prevention

[1] Visible dye penetrant must be used where there is good ventilation and no fire.
[2] When an aerosol (pressurized container) type product is used, note the following.
◯Avoid exposing it to direct sunlight.
◯Avoid placing it where the temperature exceeds 40°C.
◯Avoid using it near fire or under high temperature.
◯Avoid storing it where it may contact chemicals that corrode or oxidize metals such as acids, alkalis or mercury.

2. Handling precautions

[1] Seal and then store the can for the test solution after using it so that the solution will not evaporate. For the test, place only the necessary amount of solution into another container and use it.
[2] Shake (stir) the developer well before using it.
[3] Apply the developer so that the fine particles become uniform. Since the evaporating condition of the solvent differs depending on the temperature, change the distance between the test piece and nozzle of the aerosol as required.
[4] When using an aerosol type product in an environment of 10°C or lower, first warm the product with warm water at 30°C or lower.
[5] Use aerosol type products in a position with the nozzle facing upward. If it is used in the horizontal or upside-down position for a long time, only the gas is discharged and the spraying pressure lowers, which may make it unusable.
[6] See the Safety Data Sheet (SDS) for other details.

Remarks

Applied area	Aerosol method (450 type)		Penetrant Approx. 12m^2 Developer Approx. 45m^2
	Brushing application method (Canned)		Penetrant 1L Approx. 33m^2 Developer 1L Approx. 30m^2
Capacity *	Set	Aerosol set	Penetrant × 1, Developer × 2, Cleaner/Remover × 3 Total 6
	Penetrant		Aerosol 450 type can: 1L can, 4L can, 18L can
	Cleaner/Remover		Aerosol 450 type can: 1L can, 4L can, 18L can
	Developer		Aerosol 450 type can: 1L can, 4L can, 18L can

* We have a 600 type aerosol for some products. Contact our marketing department for details on the capacities of our products.

The specifications are subject to change for improvement without notice.

Integrated supplier of Non-Destructive Testing and Marking
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