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T3

Compatible Visible Spectrophotometer

PERSEE ANALYTICS, INC.

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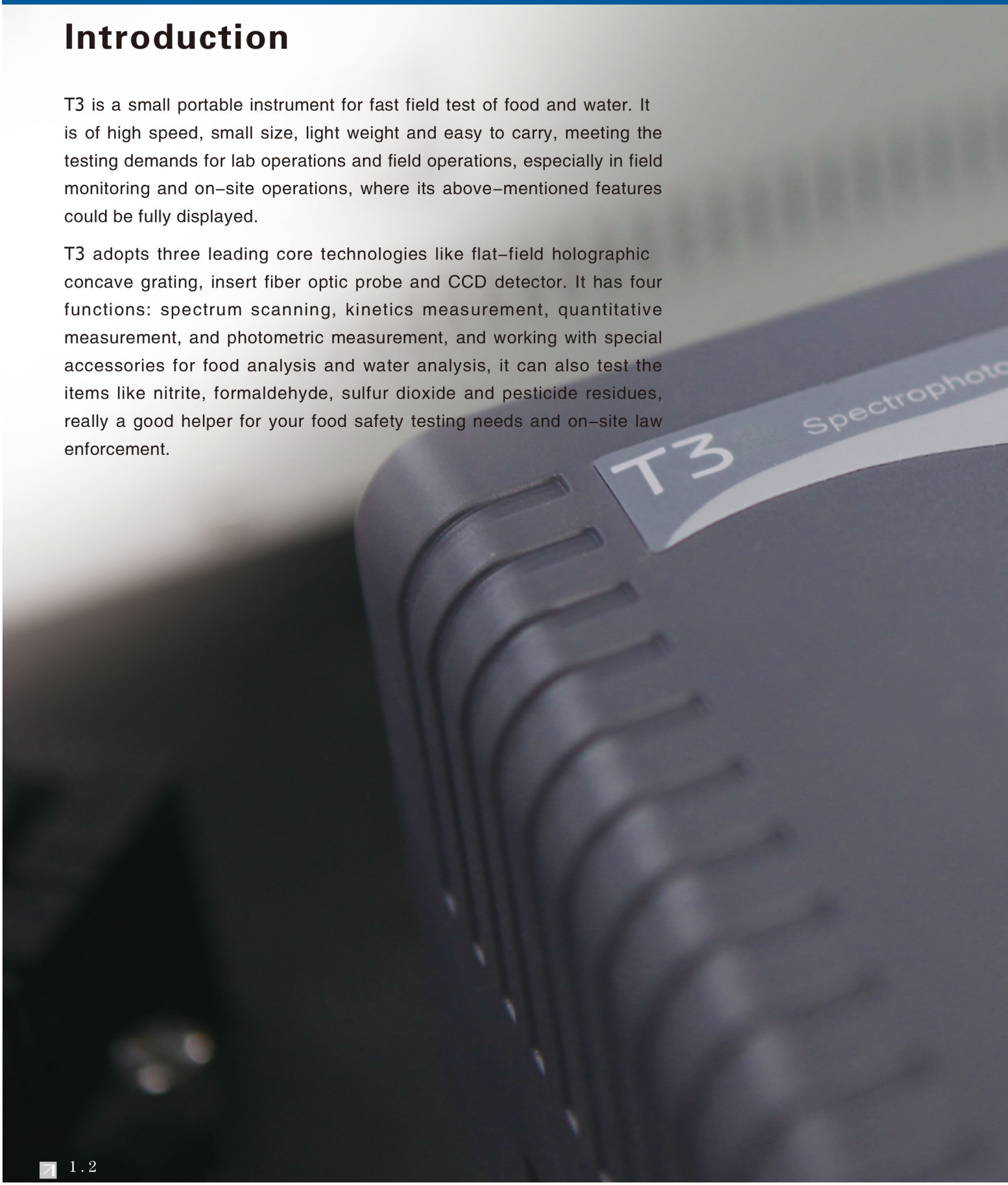
Introduction

T3 is a small portable instrument for fast field test of food and water. It is of high speed, small size, light weight and easy to carry, meeting the testing demands for lab operations and field operations, especially in field monitoring and on-site operations, where its above-mentioned features could be fully displayed.

T3 adopts three leading core technologies like flat-field holographic concave grating, insert fiber optic probe and CCD detector. It has four functions: spectrum scanning, kinetics measurement, quantitative measurement, and photometric measurement, and working with special accessories for food analysis and water analysis, it can also test the items like nitrite, formaldehyde, sulfur dioxide and pesticide residues, really a good helper for your food safety testing needs and on-site law enforcement.



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Features

√ Easy to carry and operate

The main unit is small–sized, light–weighted and easy to carry. Embedded electric system, 4.3 inches, 480*272 color LCD display, touch screen operation, flexible and portable.

√ Powerful function

Patented inert fiber optic probe improves the measurement accuracy and photometric reproducibility, meet the testing demand of analysts.

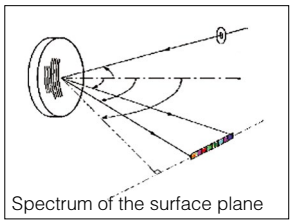
√ Multiple measuring methods

One unit can have three measuring methods include test tube, fiber probe and cuvette to meet the users' demands. Non–closure cell measuring is much portable and flexible.

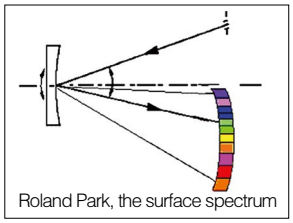
√ Outstanding stability

Brand new optical design improves the stability and accuracy. Flat–field holographic concave grating ensures of the good quality of spectral line.

Flat–field holographic concave grating



Common grating



The imaging comparison between flat–field holographic concave grating and common grating

Cell holder | Test tube holder | Optical fiber accessory

√ GPS positioning and GPRS mobile wireless data transmission

Provide convenience and guarantee for the timely communication between the users and head office who conduct field or on–site measurement. Optional food safety monitoring soft can realize the timely upload and feedback of the measuring results.

√ Random play of operation videos

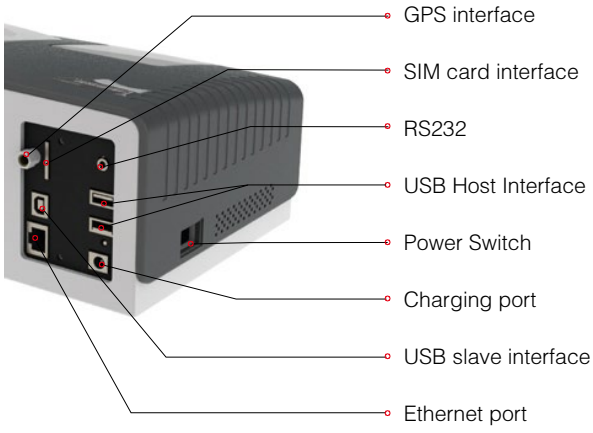
Large–sized LCD can play training videos. Users can watch the videos on site before operation. Easy to use.

√ Multiple–interface configuration

The main unit has interfaces for USB, RS232, internet, SIM card and can be connected to PC for program updating and data transmission. Data processing and transmission is controlled by the dedicated software T3 Data Viewer .

√ Two–mode power supply: battery and AC power source

The power supply mode can be selected according to weather the instrument is used indoors or outdoors. Large–volume lithium battery can work continuously for 6 hours after it is fully charged.



√ Complete accessories to provide multiple solutions

Various pretreatment accessories, replaceable parts and portable cases are available. Customized and complete food safety solutions can be provided according to specific demand of users.

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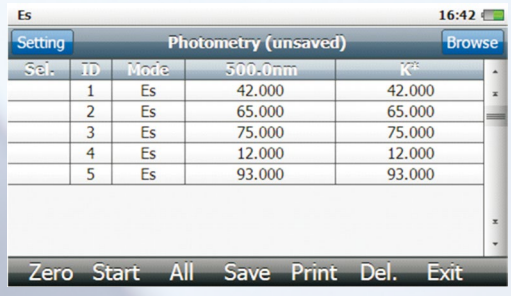
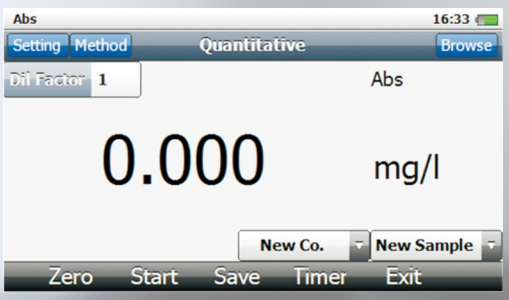
Analysis assistant

Specialized software for food analysis and water analysis (powerful in function, easy to use)

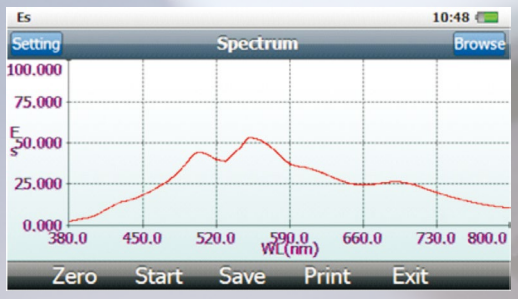
Four regular functions



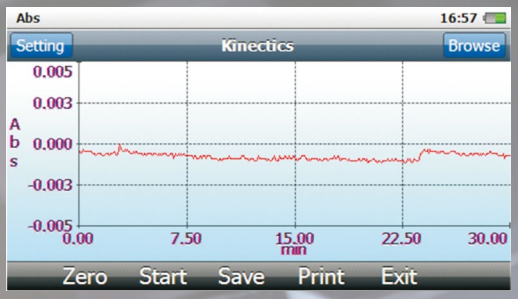
Photometric measurement



Quantitative measurement

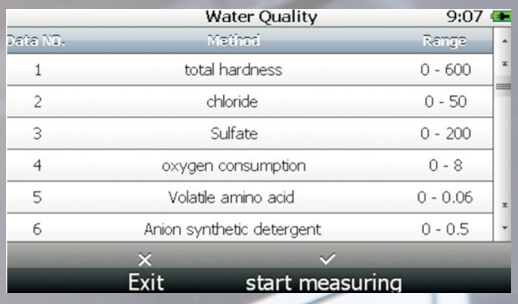


Spectrum scan



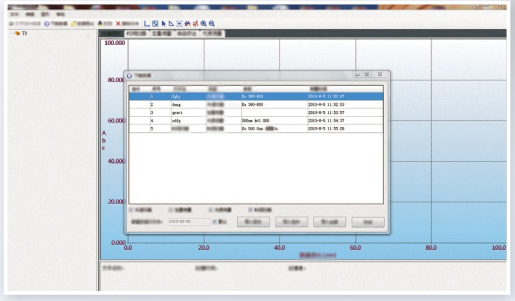
Kinetics measurement

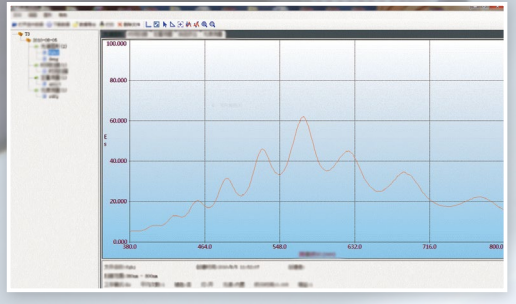
Food analysis



Water analysis

- Regular functions of the general spectrophotometer.
- Provide specialized software for food safety analysis and water analysis based on research of application methods.
- Data processing and transmission is controlled by Specialized T3 data viewer.





Specifications

Light Source	Convergent tungsten lamp, 5000hr of service life	
Measurement modes	Spectrum scan, quantitative measurement, kinetics measurement, photometric measurement	
Monochromator	Flat–field holographic concave grating	
Detector	CCD 1L × 511 2048 pixel	
Measurement parts	Insert optic fiber probe, 10 mm optical path, 20 mm optical path (replaceable); cuvette, long–path length accessory, Test tube accessory	
Power Supply	Built–in battery, can work continuously for 6 hours after being charged	
	Vehicle power supply adapter (non–standard accessory)	
	Battery charger (90~240AC)	
Printer	Micro printer (Optional), support USB printer (PCL language)	
Operating System	Completely embedded operating system, integrated 2G memory, with timing function	
Input/display	Large touch screen, 480 × 272 matrix, touch operation or mouse operation	
Specifications	Wavelength Range	380nm ~ 800nm;
	Spectral Bandwidth	4.0nm ± 0.8nm;
	Wavelength error of indication	± 1.0nm;
	Wavelength reproducibility	≤0.1nm;
	Baseline Flatness	± 0.005Abs;
	Noise	≤0.5%;
	Drift	≤1.0%/30min;
	Stray Light	≤0.5%;
	Transmittance indication error	± 1.0%;
	Photometric reproducibility	≤0.3%;
Dimensions	276.5 × 169.5 × 119.5mm;	
Ambient Temperature	Working temperature: 5℃~30℃, Storage environment: –20℃~55℃	

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Standard Configuration

NO.	Code No.	Description	Qty.
1	1630–29–01–01–00	T3 instrument case	1
2	FQ020003	Pipette(1ml)	1
3	FQ020007	Pipette(5ml)	1
4	FS40900001	Washing bottle Φ60x140（250ml）	1
5	1630–29–01–01	Plain test tube Φ32x85	1
6	1700–29–106–00	Centrifuge tube (pipette tip1ml)	2
7	1700–29–106–01–00	Centrifuge tube (pipette tip5ml)	2
8	1630–29–01–02–00	Cuvette	1
9	1630–29–01–03–00	Test tube(Φ25mm)	2
10	1630–29–01–04–00	Test tube(Φ16mm)	1
11	1630–00	T3 main unit	1
12	1630–29–01–04	T3 data viewer software disc	1
13	1630–29–01–05–00	Plastic boxes	1
14	1630–29–01–05	Power supply unit (Jinfeng–806C)	1
15	1630–29–01–06	Communication cable(USB2.0)	1
16	1630–29–01–10	T3 Instruction manual	1
17	1630–29–01–11	Long path length Cell holder	1
18	1630–01–11–00	Test tube holder	1

Items can be tested by T3 in laboratory by standard methods

SN	Category	Detection Item	Measurement Wavelength	Application Scope
1	Illegal additives, toxic and harmful substance	Peroxide value	500nm	Edible vegetable oil
2		Malonaldehyde	538nm	Pork
3		Amino acid nitrogen	400nm	Soy sauce
4		Sulfur dioxide	550nm	Dried fruit, vermicelli and dried beancurd stick, etc
5		Nitrite	538nm	Meat, dairy and canned product
6		Nitrate	538nm	Vegetables and drinking water
7		Carbon disulfide	400nm	Grain
8		Chloropicrin	538nm	Grain
9		Volatile phenol	460nm	Alcoholic drink
10		Cyanide	638nm	Grain and alcoholic drink
11		Histamine	480nm	Canned and aquatic product
12		Volatile amino acid	412nm	Meat product
13		Sodium formaldehyde sulfoxylate	415nm and 550nm	Bean product
14		Carbonyl group value	440nm	Vinegar
15		Formaldehyde	415nm	Aquatic product
16		Anion synthetic detergent	650nm	Drinking water
17		Trimethylamine nitrogen	410nm	Gammon
18		Aniline	560nm	Drinking water
19		Hydrazine Hydrate	460nm	Drinking water
20		Pyridine	580nm	Drinking water
21		Methanol	590nm	Alcoholic drink
22		Fusel oil	520nm	Alcoholic drink
23		Peroxide value of solid food	500nm	Instant noodles, biscuit
24	Physical and chemical properties	Turbidity	420nm	Beverage
25		Tone	420nm	Beverage
26		Boric acid	550nm	Food
27		Phosphide	680nm	Grain
28		Iodide	510nm	Beverage
29		Metasilicate	680nm or 420nm	Beverage
30		Fluoride	450nm and 630nm	Beverage
31		Borate	420nm or 510nm	Beverage
32		Sulfate	420nm	Beverage
33		Amylase activity	660nm	Honey
34		Butyl xanthate	436nm	Drinking water
35		Yellowness index of rice colour	400–700nm	Rice
36		luminousness	590nm	Beverage
37		Pigment of black rice	535nm	Grain
38		Chromaticity of beer	430nm and 700nm	Beer
39		Sodium glutamate	430nm	Monosodium glutamate

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Items can be tested by T3 in laboratory by standard methods

SN	Category	Detection Item	Measurement Wavelength	Application Scope
40	Pesticide residue	Pesticide residue	412nm	Fruit, vegetable
41	Total amount of natural coloring material	Potassium ferrocyanide	420nm	Salt
42		Total amount of natural coloring material	460nm	Parika
43		Iodine	405nm	Salt
44	Nutrients	Protein	400nm	Dairy product
45		Lycopene	485nm	Vegetable and vegetable product
46		Tanin	525nm	Fruit and vegetable product
47		Phytic acid	500nm	Vegetable food
48		Vitamine B12	550nm	Infant and baby food and dairy product
49		Vitamine B6	550nm	Infant and baby food and dairy product
50		Total flavone	415nm	Beverage
51		Tea polyphenol	765nm	Tea
52		Proline	509nm	Honey
53		Folic acid	540nm	Food
54		Pantothenic acid	640nm	Food
55		Total sugar	470nm	Meat and meat product
56	Metal	Aluminium	640nm	Aquatic and flour product
57		Iron	510nm	Meat product and drinking mineral water
58		Hexavalent chromium	540nm	Drinking mineral water
59		Total content of rare earth	640nm，660nm，680nm	Tea and tea product
60		Manganese	450nm	Drinking
61		Copper	440nm	Drinking mineral water
62		Zinc	620nm	Drinking mineral water
63		Vanadium	415nm	Drinking mineral water
64		Cobalt	425nm	Drinking mineral water
65		Gemanium	512nm	Food and food packaging
66		Total phosphorus	430nm	Drinking mineral water
67		Lead	510nm	Food and food additive
68		Inorganic arsenic	400nm	Fruit, aquatic product

Items can be tested in food by T3 on–site

SN	Food Category	Detection Item
1	Rice	Freshness of rice
2	Flour	Peroxide toluene aldehyde in flour
3	Oil	Peroxide value of oil
4		Adulterated sesame oil
5		Acid value in edible oil
6	Salt	Iodine in salt
7	Soy sauce	Amino acid nitrogen in soy sauce
8		Total acidity in soy sauce
9	Vinegar	Dissociative mineral acid in vinegar
10		Total acidity in vinegar
11	Tea	Tea polyphenol in tea
12	Alcoholic drink	Methanol in liquor
13		Ethanol in alcoholic drink
14		Fusel oil in alcoholic drink
15		Anion detergent in beer
16	Monosodium glutamate	Sodium sulfide in monosodium glutamate
17		Sodium glutamate in monosodium glutamate
18	Beverage	Saccharin in beverage
19	Honey product	Amylase in honey
20		Hydroxymethylfurfural in honey
21		Moisture of honey
22		Acidity of honey
23		Proline in honey
24		Fructose and amylaceum in honey
25		Saccharose in honey
26		Total flavones in honey
27	Fruit and vegetable	Pesticide residues in fruit and vegetable

SN	Food Category	Detection Item
28	Dried vegetable	Adulterated agaric
29	Milk	Protein in milk
30		Sodium thiocyanate(sodium bisulfide) in milk
31		Urea in milk
32	Meat product	Total phosphorus in meat product
33		Volatile basic nitrogen in meat product
34		Trimethylamine nitrogen in meat product
35		Malonaldehyde in lard
36	Aquatic product	Histamine in aquatic product
37	Edible fungus	Urea in edible fungus
38	General items	Nitrate in food
39		Nitrite in food
40		Formaldehyde in food
41		Sulfur dioxide in food
42		Sodium formaldehyde sulfoxylate in food
43		Hydrogen peroxide in food
44		Peroxide value in solid food
45		Cyanide in food
46		Borax in food
47		Inorganic arsenic in food
48		Sorbic acid in food
49		Potassium bromated in food
50		pH in food
51		Food temperature
52	Packaging	Heavy metals in plastic wrappage

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Items can be tested in water by T3 on–site

SN	Detection Item
1	Oxidation method of ammonia
2	Alkaline manganese method COD
3	Nitrite nitrogen
4	Soluble phosphate
5	Aniline
6	Total chlorine
7	Volatile phenols measurement by direct method
8	Sulphide
9	Total chromium
10	Total soluble iron
11	Ferrous
12	Sulfate
13	Formaldehyde
14	Total Cyanide
15	Nickel
16	Mercury
17	Ozone
18	Chloramine
19	Aluminum
20	Silicic acid
21	Copper
22	Fluoride

SN	Detection Item
23	Total phosphorus
24	Total Iron
25	Cadmium
26	Lead
27	Urea
28	Chloride
29	Nesster's reagent of ammonia
30	Hexavalent chromium
31	Cyanide
32	Zinc
33	Nitrite nitrogen–solid
34	Chlorine dioxide
35	Anionic detergent
36	Total manganese
37	Oxygen consumption
38	Turbidimetry Sulfate
39	Total hardness
40	Free chlorine
41	Nitrite ammonia
42	Extraction method for volatile phenols
43	Arsenic

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