

C.world

www.choiworld.com

made in Korea

Lead Free



Radiation shield products

TRU-LITE



CE FDA

ISO 13485





Greeting

It is nice to meet you.

Since 2001, we have been manufacturing radiation shield products.

Our radiation shield aprons developed with lead-free materials are very popular among our customers who use them in operating rooms and nuclear industries.

We promise to develop better products and we will soon lead the global market in this field.

Thank you.

C.world
www.choiworld.com

Radiation shielding Apron & Accessories

Customers can choose from several different styles and 4 sizes (page 9) with familiar colors and patterns.

Our apron can be made from 2 types of protective materials

1. TRU-LITE Leadfree
2. TRU-COMFI Lead

Compared to leaded sheet, protection rate of leadfree sheet is higher, so our leadfree apron is remarkably lighter than traditional leaded aprons in same protection rate.

Our company manufactures a full line of leadfree and lead aprons.

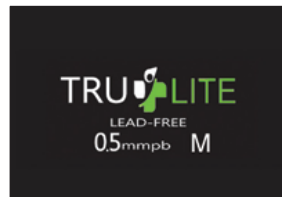
We can also provide customized aprons.

Characteristics

- Cost effective.
- Quality you can trust
- Proven Radiation protection.
- Sheet is not sticky and not contain poros.
- Waterproof nylon exterior with pattern.
- Lead free or leaded sheet interior
- Identification pocket on apron

Inner net prevents apron from adhering to the body due to perspiration

Thyroid cover connector prevents separation from apron



Poro difference in the sheet

Compared to other company sheets, ours rarely contain poros.



Our company : no poros



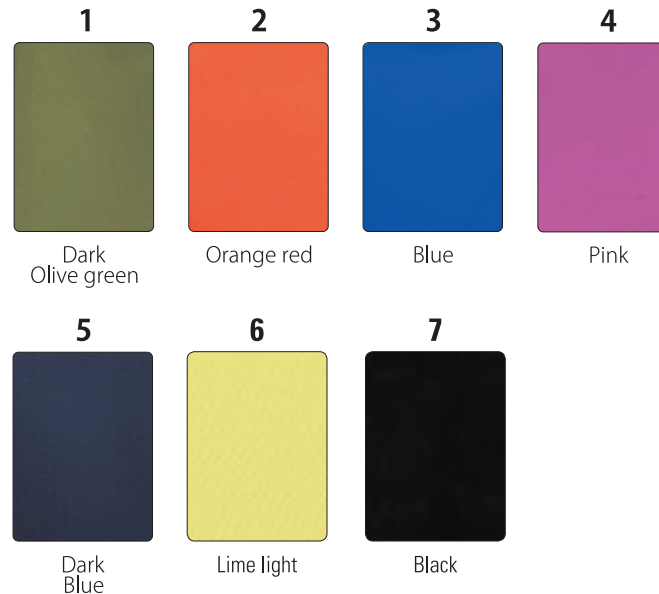
Other companies : many poros

Lead products model codes.

For lead products, each product code ends with the letter L.
Ex: N-XR-1-L.

Colors

Several colors are available.
logos can be printed on them.
Any colors are available for OEM

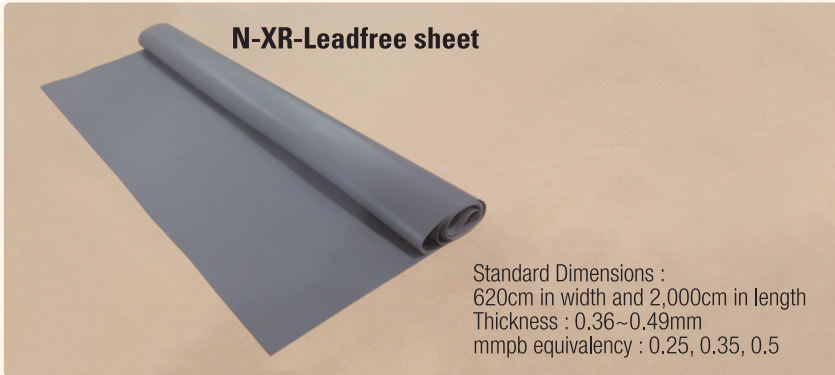


Leadfree TRU-LITE

Lead Free

Ecofriendly, lightweight , safe for non-hazardous disposal, recyclable

Materials



Leadfree materials are remarkably lighter than traditional lead only materials.

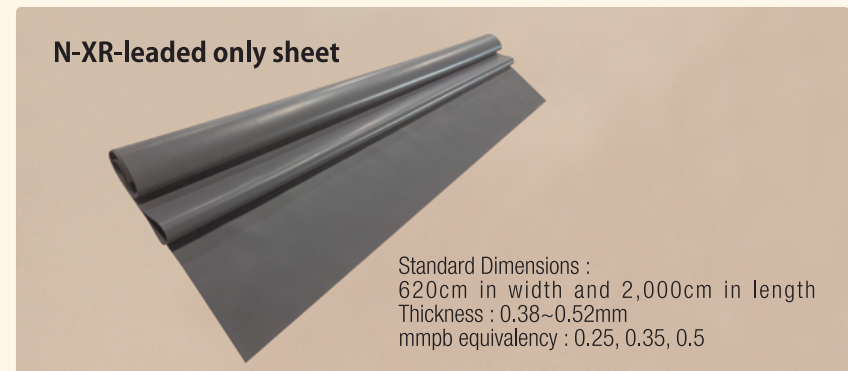
It is cost-effective for customers to purchase our Leadfree sheet rolls.

Our products are eco-friendly, lightweight, safe for non-hazardous disposal and recyclable



Lead only TRU-COMFI

Materials



Leaded metal material

Leaded apron is generally used in the radiologic and nuclear parts.

It is cost-effective for customers to purchase our leaded sheetrolls.

Apron Styles

Front Shield Apron N-XR-1 / N-XR-1-L



Buckle Type Front Shield Apron N-XR-1-a / N-XR-1-a-L

The apron buckles can be fastened and unfastened quickly.

This shield apron provides 0.25, 0.35, 0.5 mm protection



Tie Type Front Shield Apron N-XR-1-b / N-XR-1-b-L

The tie apron is the most basic apron Type.
This apron is easy to put on and can be adjusted to fit variety of sizes.

This shield apron provides 0.25, 0.35, 0.5 mm protection.



Front Back Shield Apron N-XR-2 / N-XR-2-L

The front back shield apron with detachable shoulder allows for you to remove your apron quickly and easily without breaking the sterile field.

This shield apron provides 0.25, 0.35, 0.5 mm protection.



Vest Skirt Shield Apron N-XR-3 / N-XR-3-L

The Vest-Skirt combination is the preferred choice for full protection and it can reduce back fatigue.

You control the amount of back support by adjusting the inner elasticized belt.

This shield apron provides 0.25, 0.35, 0.5 mm protection.



X-Type Shield Apron N-XR-4 / N-XR-4-L

Our X-type Velcro band offers ultimate comfort as well as quick and easy adjustability.

This shield apron provides 0.25, 0.35, 0.5 mm protection.



Half Shield Apron N-XR-5 / N-XR-5-L

40(L)x50(w)cm

This shield apron provides 0.25, 0.35, 0.5 mm protection.



Dental Panorama Shield Apron N-XR-6 / N-XR-6-L

70(L)x58 (w)cm

During panorama radiation shooting in dental units, this apron can be used as a patient shield.

This shield apron provides 0.25, 0.35, 0.5 mm protection.



Dental Intraoral Shield Apron N-XR-7 / N-XR-7-L

70(L)×58(w)cm

During intraoral radiation shooting in dental units, this apron can be used as a shield. The attached thyroid cover is helpful and convenient.

This shield apron provides 0.25, 0.35, 0.5 mm protection.



Thyroid Shield N-XR-9 / N-XR-9-L

25(L)×59(w)cm

It provides 0.25, 0.35, 0.5mmpb protection to the neck area. Especially the thyroid gland



Thyroid Shield N-XR-9-1 / N-XR-9-1-L

25(L)×59(w)cm

It provides 0.25, 0.35, 0.5mmpb protection to the neck area. Especially the thyroid gland



Thyroid Shield N-XR-9-2 / N-XR-9-2-L

25(L)×59(w)cm

It provides 0.25, 0.35, 0.5mmpb protection to the neck area. Especially the thyroid gland



Maternity Shield

N-XR-8 / N-XR-8-L 98(L)×58(W)cm

The maternity apron provides 0.25, 0.35, 0.5 mmpb protection with a detachable half apron over fetal area.



The detachable half apron has 0.5 mmpb equivalent. After delivery, the half apron can be removed.

Maternity Shield

N-XR-8-1 / N-XR-8-1-L 55(L)×60(W)cm

This maternity apron provides 0.5 mmpb protection. It is used in mammography area.



Disposable Thyroid Shield N-XR-9 Disposable
100pieces/box (27(L)×14(w)×45(H)cm)

A disposable thyroid shield cover which allows the customer to feel clean and fresh is available.



Male Gonad Shield N-XR-10 / N-XR-10-L
30(L)×34(w)cm

Gonad Shield provides 0.25, 0.35, 0.5mm protection



Male Gonad Shield N-XR-10-1 / N-XR-10-1-L

Gonad Shield provides 0.25, 0.35, 0.5mm protection



Male Gonad Shield N-XR-10-Ped / N-XR-10-Ped-L
15(L)×15(w)cm

Gonad Shield provides 0.25, 0.35, 0.5mm protection



Female Gonad Shield N-XR-11 / N-XR-11-L
35(L)×24(w)cm

Gonad shield provides 0.25, 0.35, 0.5mm protection.



Head shield N-XR-12 / N-XR-12-L

Head shield helps protect the the skull from radiation, providing 0.25, 0.35, 0.5mmpb protection on all sides and 0.25mm protection on top.

One size fits all.

Back velcro helps size adjustability.



Leg Shield N-XR-13 / N-XR-13-L

Legs and feet can be protected from radiation by our leg cover. This shield apron provides 0.25, 0.35mm protection.



Arm Shield N-XR-14 / N-XR-14-L

Arms and feet can be protected from radiation by our arm cover. This shield apron provides 0.25, 0.35mm protection.



Accessories

Protect Band 200 N-XR-200

10(W)x200(L)cm

The patient can be protected from a fall by protect band in supine or lateral position operation.

The Band can be hanged in side bar of operation table by Velcro.



Protect Band 130 N-XR-130

10(W)x130(L)cm

The patient can be protected from a fall by protect band in supine position operation. The Band can be hanged in side bar of operation table by Velcro.



Sizes

X-ray shield Apron Size(cm)

CAT NO.	S		M		L		LL		
	L	W	L	W	L	W	L	W	
Front (N-XR-1)	88	55	98	58	108	58	113	63	
Front Back (N-XR-2)	85/77	53	90/82	55	96/88	57	102/94	60	
Vest & Skirt (N-XR-3)	VEST	48	48	52	53	60	58	67	60
	SKIRT	35	85(Hip)	45	100(Hip)	47	115(Hip)	50	129(Hip)
Front X-Type (N-XR-4)	88	55	98	58	108	58	113	63	

Cleaning Instructions for Radiation Shield Aprons

Use hanger when not in use.

Use alcohol and a soapy solution (neutral detergent) for cleansing.

DO NOT dry clean, launder, or use autoclave

Apron should be x-rayed periodically to check for cracks in the x-ray protective lining.

Depending on the degree of wear and tear, most aprons should be replaced every 18-24 months

Radiation Shield

Shield is made of lead glass

Customer can select several different shield types.

It has rolling casters for smooth movement.

Protection strengths and sizes are as follows.



Lead glass shield (two-thirds shield)
N-XR-g-1

180(L)x90(w)cm with 120(L)x90(w)
window size



Lead glass shield (half shield)
N-XR-g-2

180(L)x90(w)cm with 80(L)x90(w)
window size

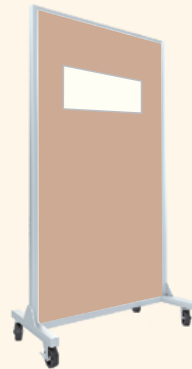
Protection : 1.65mmpb.
Lead Glass thickness : 8mm



Lead glass shield (Part Dual Half Shield)
N-XR-g-2D

180(L)x90(W) with 80(L)x90(W)
window size xDual

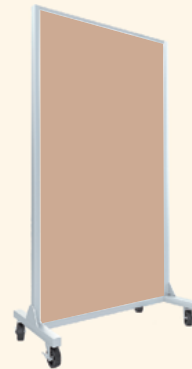
Protection : 1.65mmpb
Leadglass thickness: 8mm



Lead glass shield (partial shield)
N-XR-g-3

180(L)x90(w)cm with 20(L)x30(w)
window size

Protection : 1.65mmpb.
Lead Glass thickness : 8mm

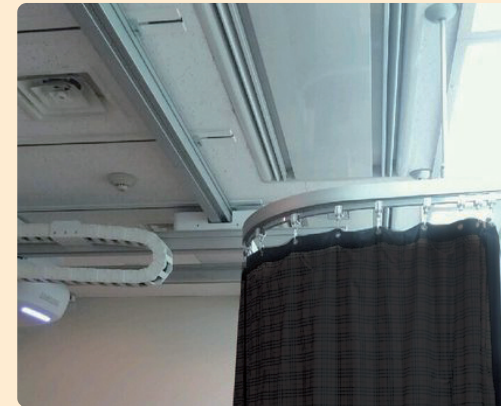


Lead plate shield
N-XR-g-4

180(L)x90(w)cm lead plate size

Lead plate thickness : 2mm

Lead curtain shield can be attached in the ceiling with sliding rail.



Lead curtain shield
N-XR-g-5

200(L)x150(w)cm
Protection : 0.25mmpb.

It can be used in the part that uses a radiology machine or the airport examination part for shielding scattered radiation.



Lead curtain shield
N-XR-g-6

100(L)x65(w)cm
Protection : 0.25mmpb.

Apron Hanger

Customer can select from several apron hanger styles.

Materials : Stainless steel



10 arm apron hanger
N-XR -h-10-1
60(L)×90(w)×147(H)cm



8 arm apron hanger
N-XR -h-8
60(D)×137(H)cm



10 arm apron hanger
N-XR -h-10
70(L)×63(w)×147(H)cm



10 arm Apron with skirt hanger
N-XR-h-10S
70(L)×63(W)×147(H)cm



5 arm apron hanger
N-XR -h-5
50(L)×63(w)×140(H)cm



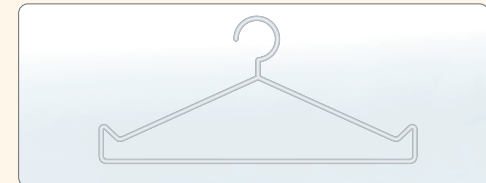
5 arm apron hanger
N-XR -h-5-1
50(L)×23(w)cm



2 arm apron hanger
N-XR -h-2
25(L)×23(w)cm



2 arm apron hanger
N-XR -h-2-1
50(L)×15(w)cm



1 arm apron hanger
N-XR -h-1
27(L)×44(w)cm

English / Dental (Rev. 1.2.3)

Dental Panorama Radiation shielding Apron



N-XR-6-1 (Lead-free)
N-XR-6-1-L (Lead)



Excellent front and back protection for Panoramic imaging.
It is designed to prevent ghost images caused by shielding sheet over clavicle on the back.

Core material Lead-free (N-XR-6-1) Lead (N-XR-6-1-L)
Size Front: 50 (L) x 58 (W) Cm / Back: 76 (L) x 58 (W) Cm

mmPb 0.25 0.35 0.5

Child Size



N-XR-6P (Lead-free)
N-XR-6P-L (Lead)

Childs size for Panoramic X-Ray imaging.
Designed based on a height of 130cm.

Core material Lead-free (N-XR-6P) Lead (N-XR-6P-L)
Child size Front: 40 (L) x 50 (W) Cm / Back: 50 (L) x 50 (W) Cm

N-XR-6 (Lead-free)
N-XR-6-L (Lead)



Traditional protection for Panoramic radiographic imaging.
It is designed to prevent ghost images caused by shielding sheet over clavicle on the back.

Core material Lead-free (N-XR-6) Lead (N-XR-6-L)
Adult size 88 (L) x 58 (W) Cm

mmPb 0.25 0.35 0.5 (Back)

Our own developed outer fabric makes it easier to clean than conventional fabric covering.

- DURABILITY** Waterproof inner fabric
- BREATHABILITY** Polyester mesh fabric Antiperspire
- WATERPROOF** Cleaner & Safer prevents water and contaminants penetration
- HEM** Waterproof
- RADIATION SHIELD** TRU-LITE or TRU-COMFI



TRU-LITE
LEAD-FREE

TRU-COMFI

Tru-Lite (Lead-free) contains lead-free shielding material made from tungsten alloy and it is maximum 20.4% lighter than conventional lead apron in the same attenuation rate.

Tru-Comfi (Leaded) offers a comfortable fit with traditional protection.

[Shielding Ratio]



Lead-free < 96.89%
Lead < 97.01%

[Weight Comparison Chart]



mmPb	Tru-Lite (Lead-free) Weight (kg)	Lead Equivalency Weight (kg)
0.25	2.26	1.80
0.35	2.90	2.43
0.5 mmPb	3.75	3.08

20.4% lighter

* Based on Shield Front Apron (Male / M / 60x92 Cm)

* 100kVp, 400mA, 0.1sec / 0.5mmPb
Tested by Korea Testing Laboratory

C.world

English / Dental (Rev. 1.2.3)

Dental Intraoral Radiation shielding Apron



N-XR-7-1 (Lead-free)
N-XR-7-1-L (Lead)



Radiation protection for patients during intraoral radiographic imaging.
In order to protect thyroid from X-Ray, thyroid collar is attached with velcro.

Core material Lead (N-XR-7-1) Lead-free (N-XR-7-1-L)
Adult size 70 (L) x 58 (W) Cm

mmPb 0.25 0.35 0.5

Child Size



N-XR-7P (Lead-free)
N-XR-7P-L (Lead)

Designed based on a height of 130cm.

Core material Lead (N-XR-7P) Lead-free (N-XR-7P-L)
Child size 50 (L) x 50 (W) Cm

N-XR-7 (Lead-free)
N-XR-7-L (Lead)



Radiation protection for patients during intraoral radiographic imaging.
Thyroid collar attached Easy put on and off

Core material Lead (N-XR-7) Lead-free (N-XR-7-L)
Adult size 70 (L) x 58 (W) Cm

mmPb 0.25 0.35 0.5

N-XR-4 (Lead-free)
N-XR-4-L (Lead)

Do you wear a **protection apron** during **portable exams**?

N-XR-4 provides protection to the operator during portable dental imaging.

Color selection



Oliver Green Orange Red Blue Pink Dark Blue

** We have 5 standard colors and custom color or logo printing is also available.



Radiation Shielding Apron for Portable Operator

Size	Length	Width
S	88	55
M	98	58
L	108	58
LL	113	62

mmPb 0.25 0.35 0.5



C.world

Cworld Company Address : 20, Neungan-ro 231 Beon-gil, Jori-eup, Paju-si, Gyeonggi-do, Korea
Tel : +82 10 4853 5301 e-mail : cworld@choiworld.com

FDA



Model : N-XR-g-8-L

Zone Barrier

Easy clean outer fabric

- Developed by Cworld
- Waterproof
- Easy to clean

Inner

- Polyester fabric

Motorized Up and Down

- Wired remote controller

Caster with lock

Protect yourself during X-Ray-monitored surgery

Core material Lead only (Tru-Comfi)

Color selection Olive green Orange red Blue Pink Dark blue



** Color samples may not represent an exact color match.

Protection Lower shield - 0.5 mmPb / Upper shield - 0.5 mmPb
 Lower shield - 1.0 mmPb / Upper shield - 1.0 mmPb

Outer Waterproof nylon

Inner Waterproof nylon

Zone Barrier protects from the radiation on medical personnel during X-Ray monitored surgery. The height can be adjusted from 120Cm to 150Cm according to user height.

Dimensions

Top view



Front view



Side view





Tru-guard

Tru-guard, Cworld Radiation Protective Goggles have comfort frame design, constructed of Cellulose acetate.

Front and lateral side protection ensures maximum protection with 0.12mmPb lead equivalency. Tru-guard comes with Acrylic lenses to minimize weight.

Red and black colored frames are available.

X-Ray Protective eyewear - Acrylic Lead

[Model : N-XR-E-1 (Red)]



[Model : N-XR-E-1 (black)]



Flip-up eyewear

Lightweight 70g Only

Flip-up glasses to ensure wearing Tru-guard in addition to your normal glasses.

Specifications

Lens material	Acrylic lens
Frame material	Cellulose acetate
Weight	70g
Lead equivalency / Front	0.12mmPb
Lead equivalency / Side	0.12mmPb
Approx. Size	16Cm (L) x 5.5Cm (H)
Color	Red / black



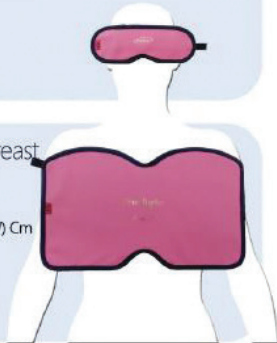
To protect patients during CT scanning
Radiation Shield Cover



Protection for
the breast,
the eyes,
the thyroid
and the abdomen

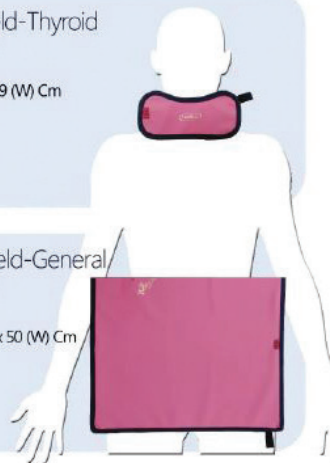
Radi Shield-Eyes
[N-XR-C-1]

Size : 8 (L) x 24 (W) Cm



Radi Shield-Thyroid
[N-XR-C-2]

Size : 9 (L) x 19 (W) Cm



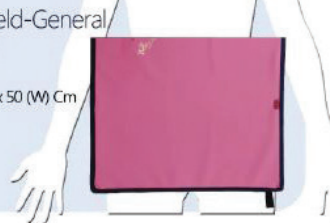
Radi Shield-Breast
[N-XR-C-3]

Size : 34 (L) x 50 (W) Cm



Radi Shield-General
[N-XR-C-4]

Size : 40 (L) x 50 (W) Cm



Reusable ! Various sizes available

- Core material** Lead-free (Tru-Lite)
Color sedction Olive green Orange red Blue Pink Dark blue



** Color samples may not represent an exact color match
** Custom color or logo printing is also available (Optional)

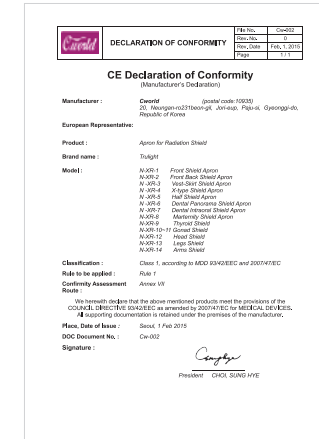
- Lead equivalency** 0.5mmPb
Outer Waterproof nylon
Inner Polyesther fabric + Nylon mesh



Protection rate	Lead equivalency
100kVp : 97%	0.5mmPb

Radiation Shield Sheet, Apron Protection

	Lead equivalency	Attenuation (100kvp, 400mA)	Shield Sheet . kg/Lbs (62x100cm)	Shield Front Apron kg/Lbs (Male , M ,60x92 cm)
Lead (TRU-COMFI)	.25 mmpb	91.88%	1.90 kg (4.18 Lbs)	2.26 kg (4.97 Lbs)
	.35 mmpb	94.20%	2.84 kg (6.24 Lbs)	2.90 kg (6.38 Lbs)
	.5 mmpb	96.60%	3.81 kg (8.38 Lbs)	3.75 kg (8.36 Lbs)
Leadfree (TRU-LITE)	.25 mmpb	91.92%	1.62 kg (3.54 Lbs)	1.8 kg (3.96 Lbs)
	.35 mmpb	94.21%	2.39 kg (5.25 Lbs)	2.43 kg (5.34 Lbs)
	.5 mmpb	96.99%	3.24 kg (7.12 Lbs)	3.08 kg (6.77 Lbs)



Made in South, Korea

Cworld company Address : 20, Neungan-ro231beon-gil, Jori-eup, Paju-si, Gyeonggi-do, Korea
Tel : +82 10 4853 5301 E: cworld@choiworld.com www.choiworld.com

TRU-LITE



C.world
www.choiworld.com

E) cworld@choiworld.com
T) +82-31-942-1617 F) +82-31-941-1617
Address) 193-28, Neungan-ro, Jori-eup, Paju-si, Gyeonggi-do, Korea

2019, Jun, 10 revised edition