Shielding against X-Ray

marTECH Systems has expanded the product-range of shielding items.
X-Shield is a shielding material for X-Ray protection.

X-Shield is:
- usable eveywhere
- simple to use
- economical
- available with a lead equivalent of 0,5 mm
- no special know how or tools required

Range of use:
- X-Ray units in hospitals or medical facilies, in industrial or scientific installations

X-Shield - Installationsanleitung		X-Shield - installation guideline	
Untergrund:	Der Untergrund muss vorbereitet sein wie zur Verklebung einer Dekortapete	Subsoil:	The subsoil has to be prepared similar to the installation of a decorative wallcovering
Kleber:	Verwenden Sie Bodenbelagskleber oder Dispersionskleber mit hoher Klebkraft, eine hohe Anfangshaftung wäre vorteilhaft	Adhesive:	Use adhesive for flooring or other strong adhesive, high adhesion is needed
Verklebung:	Kleber auf den Untergrund (im Allgemeinen Wände, Decke...) in geeigneter Menge auftragen. x-shield-Material in den Kleber einlegen und blasenfrei andrücken; die einzelnen Stücke werden an den Nähten jeweils 2 cm überlappend verklebt	Installation:	Apply the adhesive to the subsoil (suitable quantity). Press the x-shield-material into the adhesive, no bubbles shall be left. At all joints overlap the material approx. 2 cm.
Erdung:	Verwenden Sie selbstklebendes Kupferband, Artikel-Nr. 97406, und kleben Sie dies im Raum umlaufend auf die Oberfläche des x-shield-Materials. Verbinden Sie das Kupferband mit einer geeigneten Erdung	Earthing:	Use self adhesive coppertape, item no. 97406, stick it on the surface of the x-shield-material, use the coppertape once around the room and connect it ti a suitable earthing.
Achtung:	Erdungsanschlüsse dürfen nur von autorisierten Fachkräften vorgenommen werden. Neben dieser Anleitung sind auch die Sicherheitshinweise für Handhabung, Verarbeitung und Entsorgung zu beachten	Warning:	Earthing connections shall be done by authorised specialists only. Beside this guideline all valid standards and regulations have to be observed

Shielding against X-Ray

X-Shield will be delivered in roles, compact and flexible

X-Shield is processed with usual tools and adhesives

The typical X-Shield installation consists of adhesive, X-Shield and a decorative wallcovering

Because of the overlapping adhesion will be arise a seam, which can be primed over by regular filler.
The surface of X-Shield can be revised with a wallcovering or a coating.

Shielding against X-Ray

Details for Architects and Professional planner

You will get information for the necessary shielding from the manufacturer or the user of the X-Ray device.

X-Ray penetrates usual building materials, but alleviated. Hence, its possible that with building materials of high density and bigger material strength the use of an additional Shielding material is not necessary in any case. This case is often with floors and ceilings.

The Shielding effect / the required Shielding accomplishment is denoted a millimeter of thickness of lead, to the so-called „lead equivalent value“. The strengths required on this occasion are dependent on the used device. General details you find in German Institute for Standardization DIN 6812.

X-Shield is offered with a lead equivalent value of 0,5 mm.

If lead equivalent value with bigger value be required, so serveral layers of X-Shield can be used. Here, the single lead equivalent value were added.

As far as you wish our support with questions, texts or technical details, feel free to contact us:

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Shielding against X-Ray

X-Ray is used for many purposes in medicin and for technical matters.....

Too much X-Ray will cause health problems for humans ....

Humans have to be protected from higher dosis of X-Ray ....

Manufacturer of X-Ray-equipment have to offer a radiation protection concept, which will be implemented in the construction of the building....

X-Shield is a simple way to fulfill the requirements of the radiation protection concept ....

The products name “X-shield” has been created according the the term “X-ray” ....

X-Shield ist:

- usable everywhere

- economical and simple to use

- available with a lead equivalent of 0,5 mm

- for different lead equivalent values a more layer construction can be used, the lead equivalents of the layer will be added

X-SHIELD shields x-ray

marburg TECHNIC

Range of use:

- hospitals
- medical facilities
- veterinarians
- industrial and scientific installations

... a decoration with a standard wallcovering or paint is possible ....

marTECH Systems shielding systems

.... simple
.... reliable
.... economical

**Bayerisches Landesamt für Arbeitsschutz,
Arbeitsmedizin und Sicherheitstechnik**

LfAS

Bayerisches Landesamt für Arbeitsschutz, Arbeitsmedizin und
Sicherheitstechnik, Pfarrstraße 3, 80538 München

Prüfbericht Nr. LS-00605

Bestimmung des Bleigleichwertes nach DIN EN 61331-1

Auftraggeber:	Marburg Technik, 35269 Kirchhain
Untersuchungsziel:	Bestimmung Bleigleichwert bei 80 und 100 kV
Proben:	Bleihaltiges Abschirmmaterial Produktname EMV X-Shield Nr. 97451 (0,35mm Pb-Nennwert), Nr. 97452 (0,50 mm Pb Nennwert)
Prüfdatum:	24.02.05
Prüfer:	Dr. Eder
Prüfanordnung:	Strahlengang gem. DIN EN 61331-1, Schmales Strahlenbündel, Messgerät PTW UNIDOS mit Luftkerma-Kammer M-23361. Es wurden jeweils 2 Proben gemessen und der Mittelwert gebildet. Die Abweichung der Proben untereinander war gering.

Messergebnisse:

Röhrenspannung	Filter	Probe Art. Nr. 974541 Messwert (mm Pb)	Probe Art. Nr. 97452 Messwert (mm Pb)
80 kV	0,15 mm Cu	0,350	0,518
100 kV	0,25 mm Cu	0,351	0,514

Messunsicherheit +- 3%

24.02.05

Dr.-Ing. Eder

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80538 München
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Öffentliche Verkehrsmittel:
U4/U5: Lehel
Tram 17: Lehel
Tram 19: Maxmonument

Kontakt:
Internet: www.lfas.bayern.de
E-Mail: poststelle@lfas.bayern.de

Projectreport
Marienhospital Altenessen, Essen

Shielding of a room for a Computer-Tomograph (CT) - Installation with X-Shield

Marienhospital Altenessen
Hospitalstrasse 24
45329 Essen, Germany

Thanks for a good cooperation to MEG Rhein-Ruhr, Mrs Berntßen

.... more than 100 years of tradition...

marienhospital altenessen

Marienhospital Essen

Projectreport
Orthopedic Clinic Munich-Harlaching

Shielding of a room for X-Ray use. X-Shield has been used for the installation

New building of the
Orthopedic Clinic Munich-Harlaching
Harlachinger Strasse 51
81547 Munich

The installation has been done by: Weigert Corp., Weilheim

before installation

Orthopedic Clinic Munich-Harlaching

Preparation of the walls

Installation of X-Shield

Othopedic Clinic Munich-Harlaching

Installation of X-Shield

Orthopedic Clinic Munich-Harlaching

The surface of X-Shield is prepared with primer

A fibreglas wallcovering ist sticked on the surface of X-Shield

Orthopedic Clinic Munich-Harlaching

The fibreglaswallcovering is painted

The new room for X-Ray use is ready.

Projectreport
Clinik of the Friedrich-Schiller-University Jena

Shielding of a room for x-ray use by X-Shield

Thanks to Verbundgruppe Farbe & Heimtex GmbH, Jena for taking the pictures.

Clinic of the
Friedrich-Schiller-University
Bachstrasse 18
Jena, Germany

Material and Tools

First steps in the installation

Cutting the material

Installation at a wall the the neigbour room

Apply the adhesive,
dispersionsadhesive or
adhesive for floor coverings

Installation of X-Shield

The installation is complete

A primer will make the installation of a decorative wallcovering more easy.

Clinic of the Friedrich-Schiller-University, Jena, Germany

SAFETY DATA SHEET confirms to 1999/45/EG

X-Shield

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product name:	X-Shield, item no. 97452
Manufacturer:	marburg TECHNIC A Division of Marburger Tapetenfabrik J. B. Schaefer GmbH & Co. KG P.O.Box 13 20 35269 Kirchhain / Germany

2. COMPOSITION/INFORMATION OF INGREDIENTS

Description:	shielding of x-ray for walls, ceiling and floor, lead containing foil
Hazardous components:	None
Amount:	Not applicable
EEC Symbol	231-100-4
CAR-No.	7439-92-1
Risk Phrases:	According to 67/548/EWG apendix VI and TRGS 505 solid lead containing material does not offer risks for humans by breathing, swallowing or skin contact

3. HAZARDS IDENTIFICATION

NOT classified as dangerous

Absorption of the materials by the body has to be avoided, especially breathing of dusts / fractions as well as swallowing of material / dust or fractions.

Preventation-regulations have to be observed during processing.

4. FIRST AID MEASURES

Only neccessary if material / dust / fractions or smoke are absorber by the body by breathing or swallowing.

Eye:	Washing for several minutes with plenty of water
Skin contact:	Washing for several minutes with plenty of water
Inhalation:	fresh air, in case of problems contact the doctor

5. FIRE FIGHTING MEASURES

Extinguishing media:	CO2, Dry Chemical, Foam, Water
Special firefighting:	in case of melted material do not use water
Fire & explosion hazards:	Avoid inhalation of dust, steam and smoke
Autoplammability:	Not available
Flash point:	Not available

6. ACCIDENTAL RELEASE MEASURES

Spill and Leak procedures:	Avoid inhalation of dust / steam / smoke, use respirator mask, avoid flow to gully / sewer

7. HANDLING AND STORAGE

Handling/storage:	Keep dry, no special requirments for the warehouse, avoid exposition to acid

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components:	in case of use according to the guideline no special protection required
Exposure limits:	according to national regualtions
Personal protection:	
Glove Requirements:	No special requirements, washing of hands carefully after processing is stronly requested
Eye protection:	No special requirements
Clothing protection:	No special requirements, change of clothing after processing is needed, wash the clothing carefully.

9. PHYSICAL AND CHEMICAL PRPOPERTIES:

Pure substance; Preparation or make:	Make
Physical form:	Solid
Colour:	silver / grey
Odur:	Non
Boiling point:	Not applicable
Melting/freezing point:	Not applicable
Sbility in water:	Not applicable
Autoflammability:	Not available
Flash point:	Not applicable
pH:	Not applicable

10. STABILITY AND REACTIVITY

Stability:	Stable – under normal application condition

11. TOXICOLOGICAL INFORMATION

Effects of chronic esposure:	avoid absorption by the body – use of good industrial hygiene practices is recommended
Skin irritation:	None known
Hazard carcinogen :	None known

12. ECOLOGICAL INFORMATION

Persistance and degraddability :	Unknown
Bactiria toxicity:	Unknown
Fish toxicity:	Unknown
Bod:	Not applicable
Cod:	Not applicable

13. DISPOSAL CONSIDERATIONS

Waste Disposal methods:	Waste material has to be processed according to national regualtions
Packing material warnings:	Not needed

14. TRANSPORT INFORMATION

IATA classification:	Not classified as dangerous
IMGD classification:	Not classified as dangerous
ADR/RID:	Not classified as dangerous
Hazarous substances Ordinance:	Not listed

15. REGULATORY INFORMATION

Not classified as dangerous

Directives 67/ 548 EEC and TRGS 505 have been considered when compiling this SDS; the information is provided for health and safety assessment by an industrial user. Reference should be made to any relevant local or national health, safety, and environmental legislation. This information does not constitue indication of suitability for specific uses.