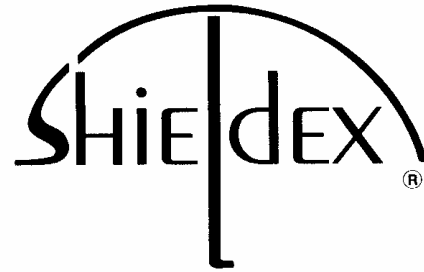


**STATEX MATERIAL SAFETY DATA**

**STATEX** Product Name  
**SHIELDEX® Ni-Cu/PW**  
 (Nickel-Copper Coated Woven /or/ Non-Woven Nylon Fabric)



STATEX  
 Produktions + Vertriebs GmbH  
 Querlandstr. 6b. 28357 Bremen

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**PRODUCT IDENTIFICATION**


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Chemical Name:	Not Applicable
DOT Proper Shipping Name:	Not Applicable
DOT Hazard Classif. D. NO Packing Group	Not Applicable
DOT Label	Not Applicable
Reportable Quaintly (RQ) under U.S EPA CERCLA Regulations:	Not Applicable

SARA Hazard Notification  
 Hazard Carcinogen under Criteria  
 Of SARA Title W Rules  
 (40 CFR Part 370):

Immediate, Delayed

## Section 313 Hazardous Chemical(s):

This product contains the following substances, which are defined as toxic chemicals under, and subject to the reporting requirements of Section 313 of Title W of the Superfund Amenanemia and Reauthorization Act of 1988 and 40 CFR Part 372:

Nickel, CAS No 7440-02-0 (Listed as nickel compounds) Nickel and certain nickel compounds are listed as carcinogen by the National Toxicology Program (NTP) and the International Agency for Research on Cancer (IARC)

Copper, CAS No. 7440-50-8 (listed as copper compounds)

In addition these compounds are considered hazardous chemicals under the criteria of the OSHA Hazard Communication Standard (29 CFR 1910.1200)

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**WARNING STATEMENTS**


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**WARNING! CONTAINS NICKEL: MAY CAUSE ALLERGIC SKIN AND RESPIRATORY REACTION**

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**PERCAUTIONARY MEASURES AND FIRST AID**


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Avoid prolonged or repeated contact with skin

Wash thoroughly after handling

Use only with adequate ventilation

**FIRST AID: IF ON SKIN** immediately wash with soap and plenty of water. Remove contaminated clothing. Call medical assistance if symptoms occur. Wash clothing before reuse.

**IF IN EYES:** immediately flush with plenty of water

**IF INHALED:** remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call medical assistance. Remove material from eyes, skin and clothing.

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## **OCCUPATIONAL CONTROL PROCEDURES**

**Eye Protection:** Shieldex Nickel and Copper coated Nylon Fabric does not cause significant eye irritation or eye toxicity requiring special protection. Use good industrial practice to avoid eye contact.

**Skin Protection:** Wear appropriate protective clothing and chemical resistant gloves to prevent skin contact. Consult glove manufacturer to determine appropriate type glove for given application. Wash contaminated skin promptly. Launder contaminated clothing and clean protective equipment before reuse. Wash thoroughly after handling.

Attention: initial, repetitive or prolonged contact may cause allergic skin reaction in some people.

**Respiratory Protection:** Avoid breathing dust. Use NIOSH/MSHA approved respiratory protection equipment when airborne exposure limits (see below) is expected. Consult respirator manufacturer to determine appropriate type equipment for given application. Observe respirator use limitations specified by NIOSH/MSHA or the manufacturer. Respiratory protection programs must comply with 29 CFR 1910.134.

Attention: initial, repeated or prolonged inhalation may cause allergic reactions in some people.

**Ventilation:** Provide natural or mechanical ventilation to control exposure levels below airborne exposure limits (see below). Dilution ventilation is acceptable, but local mechanical exhaust ventilation is preferred, if practical at sources of air contamination such as open procedure equipment.

### Airborne Exposure Limits

Product: Shieldex® Nickel and Copper coated Woven & Non-Woven Nylon Fabric

OSHA PEL:	None established
ACGIH TLV	none established

### Component Nickel

OSHA PEL/8-hour TWA:	1 mg/m <sup>3</sup>
ACGIH TLV/8-hour TWA:	1 mg/m <sup>3</sup>

### Component Copper

OSHA PEL/8-hour TWA:	1.0mg/m <sup>3</sup> (dust and mists as Cu)
ACGIH/TLV/8-hour TWA:	1.0 mg/m <sup>3</sup> (dusts and mists as Cu)

## **FIRE PROTECTION INFORMATION**

Extinguishing Media: Water or other Class A extinguishing agent

Special Firefighting Procedures: Firefighters and others who may be exposed to products of combustion should wear full protective clothing including self-contained breathing apparatus.

Unusual Fire and Exposure Hazards: None known

## **REACTIVITY DATA**

Materials and Components to Avoid:	None known
Hazardous Decomposition Products:	None Know
Hazardous Polymerization:	Does not occur

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**SHIELDEX® Ni-Cu/PW**

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## **HEALTH EFFECTS SUMMARY**

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The following information summarizes human experience and results of scientific investigations reviewed by health professionals for hazard evaluation of Shieldex® Nickel and Copper Coated Woven Nylon Fabric and development of Precautionary Measures and Occupational Control Procedures recommended in this document.

### Effects of Exposure

Shieldex® Nickel - Copper coated Coated Woven Nylon Fabric consists of a nylon fabric substrate with a nickel and copper metallic surface. Skin contact is expected to be the primary route of occupational exposure. While occupational exposure to these developmental materials has not been reported to cause significant adverse health effects, there is the potential for allergic skin response in individuals sensitive to nickel because of the product's metallic nickel coating. These products are not expected to present an inhalation hazard during routine shipping or handling. Under aggressive conditions of physical manipulation (carding, weaving, etc.), however, there is a potential for generation of respirable fibers or dusts. If respirable metal dusts are generated, see "Toxicological Data" below for potential toxic effects of nickel and copper.

### Toxicological Data

Data from laboratory studies conducted at Statex are summarized below.

In a controlled human patch test conducted at Statex, repeated exposure to Shieldex® Nickel - Copper Coated Woven Nylon Fabric produced effects ranging from faint redness to intense redness with firmness of the area and/ or solid raised bumps. It is most likely that these subjects were sensitized to the nickel component of the fabric.

### Components

Data from the available scientific literature on the components which have been identified as hazardous chemicals according to criteria of the OSHA Hazardous Communication Standard (40 CFR 191.1200):

#### Nickel

Nickel is a potent contact allergen in humans. Asthmatic attacks have occurred in a few sensitized individuals following inhalation exposure. Increases in cancers of the lung and nasal cavities and possibly the pharynx, reported for nickel refinery workers are believed to be associated with exposure to some nickel compounds and may or may not be associated to other exposures in other industries. There is no epidemiological evidence of an increased risk for respiratory cancers from other industrial exposures to nickel compounds. The cause of respiratory effects (asthma, lung fibrosis and accumulation of fluid in the lung), cited in case reports of workers exposed to nickel dusts and fumes, is uncertain because of mixed exposures to other respiratory irritants.

Lifespan inhalation exposure to metallic nickel produced lung changes in rodents. Metallic nickel has not been tested for potential to produce birth defects. Though of questionable relevance because the route of exposure was injection, nickel salts caused birth defects in laboratory animals. Nickel produced local tumors at the site of injection in laboratory animals and lung tumors following repeated intra-tracheal administration of metallic nickel powder. Based on this evidence and epidemiology data, nickel and certain nickel compounds are listed as substances that "may reasonably be anticipated to be carcinogens" by the National Toxicology Program (NTP) and nickel and nickel compounds are classified as "carcinogenic to humans" by the International Agency for Research on Cancer (IARC, Vol. 11)

Refer to the Nickel Fact Sheet for further information.

#### Copper

Copper is an essential trace element for man, animals and plants. As a result, numerous publications concerning its role in biochemistry, nutrition and clinical medicine are available in the

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**HEALTH EFFECTS SUMMARY (continued)**

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scientific literature. Excessive exposure to fumes and mists of copper can produce eye and upper respiratory tract irritation, coughing, sneezing, a metallic taste, digestive disorders and changes in nasal tissue. Industrial exposure to very fine copper dust has been reported to cause an apparent metal fume fever, a 24 to 48-hour illness with symptoms of dryness and irritation of the throat, constriction in chest, wheezing, chills, fever, perspiration, fatigue and muscle cramps. Greenish discoloration of skin, hair and teeth has been observed in some copper workers after heavy fume exposure of long duration.

Reports in the literature suggest that copper may act with other workplace agents or rare hereditary disorders of copper metabolism to produce liver diseased in some workers. Though rare allergic skin reaction to copper have also been reported. Anemia has occurred as a result of using copper-containing dialysis equipment.

The median lethal dose for copper metal dust in mice intra-pentoneal injection was 3.5 mg/kg.

**Addition Information**

Threshold Limit Values (TLVs) have been established by the American Conference of Governmental Industrial Hygienists (ACGIH) for Nickel and Copper. For further information on these materials, please refer to the current edition of the Documentation of the Threshold Limit Values and Biological Exposure Indices.

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**PHYSICAL DATA**

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Appearance:	A solid coated fabric
Odor:	None

Note: These physical data are typical values based on material tested but may vary from sample to sample. Typical values should not be construed as a guaranteed analysis of any specific lot or as specifications for the product.

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**SPILL, LEAK & DISPOSAL INFORMATION**

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Spill of leakage Procedure: Sweep up and place into containers for disposal.

Disposal: Shieldex® Nickel and Copper Coated Woven Nylon Fabric is not a “hazardous waste” as that term is defined in 40 CFR 261, “Identification and Listing of Hazardous Waste”. Dispose of waste by recovery of metals, incineration, sanitary landfill or other method in of appropriate regulatory officials for information on such disposal.

Spill or Leakage Procedures: Sweep up and place into containers for disposal.

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