



SECTION 1: Identification of the substance/mixture and company/undertaking

1.1 Product designation

Product Name: Uddeholm CoolMould and Weldpak

Product: Beryllium Copper

1.2 Identified uses of the substance/mixture and uses advised against

Applications: Utilities Industry

1.3 Further information on the company/undertaking

Manufacturer: Uddeholms AB

Address: Uvedsvägen 15
S-683 85 Hagfors
SWEDEN

Contact: Hse@uddeholm.com

1.4 Emergency telephone number

Emergency phone number: 911

SECTION 2: Hazards Identification

2.1 Classification of the substance/mixture

Classification according to (EC) No 1272/2008 and the amendments to it.

2.1.1 Health hazards

Respiratory sensitization	Category 1	H334 - May cause allergy- or asthma symptoms or breathing difficulties if inhaled.
Skin sensitization	Category 1	H317 – May cause an allergic skin reaction.
Carcinogenicity	Category 1B	H350i – May cause cancer by inhalation.

2.1.2 Physical hazards:

Not classified for physical hazards.

2.1.3 Environmental hazards:

Not classified for environmental hazards.

2.2 Labeling

Pictograms



2.3 Other hazards

Hazard classifications:

H350i - May cause cancer by inhalation.

H317 - May cause allergic skin reaction.

H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled.

H372 - Causes damage to organs (respiratory system) through prolonged or repeated exposure by inhalation.

Precautionary statements:

P201 - Obtain special instructions before use.

P202 - Do not use the product until you have read and understood the precautionary statements.

P260 - Do not inhale dust or smoke.

P270 - Do not eat, drink or smoke when using this product.

P272 - Contaminated work clothing should not be removed from the workplace.

P280 - Wear protective gloves, protective clothing, eye protection, face protection.

SECTION 3: Composition/information on ingredients

3.2 Contents/mixtures

Substance	Identification	Classification	Concentration (%)
Copper	CAS-nr: 7440-50-8 EG-nr: 231-159-6	H335	96,3 – 99,5
Cobalt	CAS-nr: 7440-48-4 EG-nr: 231-158-0	R42/43 H317, H334, H351	0 - < 2,7
Nickel	CAS-nr: 7440-02-0 EG-nr: 231-111-4	R43 H317, H335, H351, H373	0 - < 2,2
Beryllium	CAS-nr: 7440-41-7 EG-nr: 231-150-7	R49, R26, R25-48/23, R36/37/38, R43 H317, H334, H350i, H372	0,15 - < 2
Zirconium	CAS-nr: 7440-67-7 EG-nr: 231-176-9	H228, H250, H251, H261, H315, H317, H319, H335, H372	0 < 0,5

Note:

In accordance with the CLP Regulation, steels containing more than 10% nickel should be classified as Specific Target Organ Toxicity Repeated Exposure 1 (STOT RE1) and steels containing 1 to 10% nickel should be classified as Specific Target Organ Toxicity Repeated Exposure 2 (STOT RE 2). Steels containing more than 1% nickel should be classified as Carcinogen Category 2.

SECTION 4: First aid measures

If exposure or uncertainty: get medical attention/advice. Get medical attention if symptoms occur. Wash contaminated clothing before reuse. As supplied, there is no immediate medical risk with the beryllium products in article form. First aid measures included provided are to particulate beryllium products.

4.1 Description of first aid measures

Inhalation	If symptoms are developed, move victim to fresh air. Breathing-difficulties caused by inhalation of particulate requires immediate removal to fresh air. If breathing stops, then perform artificial respiration and call for an ambulance.
Skin contact	Take off contaminated clothing and wash before reuse. Thoroughly wash skin cuts or wounds so that all particles are removed from the wound. Seek medical attention for wounds that are difficult to thoroughly clean. Treat cuts and sores in the skin with general first-aid techniques, such as cleaning, disinfection and protection to prevent wound infection and contamination before further work is occupied. Seek medical attention if irritation persists. Materials that deliberately implanted or stuck under the skin must be removed.
Eye contact	Rinse immediately with plenty of water for at least 15 minutes, lifting lower and upper eyelids periodically. Consult with a doctor if symptoms persist.
Ingestion	Contact a doctor immediately if a piece gets swallowed and show this safety data sheet or product label. Induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person.

4.2 Most important symptoms and effects, both acute and delayed

May cause an allergic skin reaction. May cause an allergic respiratory reaction. Prolonged exposure may cause chronic effects.

4.3 Any immediate medical attention and special treatment needed

Treatment of Chronic berylliosis: There exists no known curative treatment for berylliosis today. Prednisone or other corticosteroids are the most specific treatment methods currently available. They are used to inhibit the immunological reaction and can be effective in reducing the signs and symptoms of chronic berylliosis. In cases where steroid therapy has had only partial or minimal effect, other immunosuppressive agents such as cyclophosphamide, cyclosporine, or methotrexate being used instead. The later funds are pending investigation. Besides that, in view of the potential side effects that all immunosuppressive agents may lead to including steroids such as prednisone, they should be used only under a doctor's direct supervision. In general, these drugs should be reserved for cases where serious symptoms and/or severe loss of lung function occur. Other sump tomato therapies, such as acid, inhaled steroids or bronchodilator agent obtainable prescription of some doctors and can be proved effective in some cases.

The decision on when and which medications to be used for the treatment is up to the individual doctor to decide. In most cases, reserved treatment of individuals with symptoms and measurable loss of lung function. The advantage to begin an oral steroid treatment, before signs or symptoms become noticeable, remains a medically unresolved problem.

The effect of continuous low-level exposure to beryllium is unknown for individuals who are sensitized to beryllium or who have been diagnosed with chronic berylliosis. In general, it is recommended that individuals who are sensitized to beryllium or have CBD beryllium terminate their occupational exposure to beryllium

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

The product is not combustible. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media

Do not use water to extinguish fires around areas involving molten metal due to the risk of steam explosions.

5.2 Special hazards arising from the substance or mixture

Not available.

5.3 Advice for firefighters

Firefighters should wear full protective clothing including breathing apparatus.

Move container from fire area if this can be done without risk. Water runoff can cause environmental damage.

Self-contained breathing apparatus must be worn by firefighters or other persons potentially exposed to the particulate smoke emitted by a fire.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

In solid form this material causes no special clean-up problems. Wear appropriate protective equipment and clothing during cleaning of debris or dust of the product.

6.2 Environmental precautions

Avoid release to the environment. In the event of a spill or accidental release, the competent authorities need to be notified in accordance with all applicable regulations. Prevent further leakage or spillage if it can be done safely. Keep out of sewers, watercourses or on the ground and in the aquatic environment.

6.3 Methods and materials for containment and cleaning

Clean up in accordance with all applicable regulations.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Obtain special safety instructions before use. Do not use the product until you have read and understood safety instructions. Minimize dust generation and accumulation. Avoid breathing dust/smoke. Use protective gloves, goggles, protective clothing and face protection. Wear respiratory protection. Wash thoroughly after handling. Do not eat, drink or smoke while working. Contaminated work clothing should not be removed from the workplace.

7.2 Conditions for safe storage, including any pollution

The store should be locked up. Avoid contact with acids and bases. Avoid contact with oxidizing agents.

7.3 Specific end use

Not available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

8.1.1 Occupational exposure limits

U.S OSHA Table-Z Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type of limit	Value (mg/m ³)	Form
Cobalt (CAS- 7440-48-4)	PEL	0.1	Dust and fume
Copper (CAS- 7440-50-8)	PEL	1	Dust and fume
		0.1	Fume
Nickel (CAS- 7440-02-0)	PEL	1	Not applicable

US. OSHA Table Z-2 (29 CFR 1910.1000)

Components	Type of limit	Value (mg/m ³)	Form
Beryllium (CAS 7440-41-7)	Ceiling	0.005	Not applicable
	TWA	0.002	Not applicable

US. ACGIH Threshold Limit Values

Components	Type of limit	Value (mg/m ³)	Form
Beryllium (CAS 7440-41-7)	TWA	0.00005	Inhalable dust
Cobalt (CAS- 7440-48-4)	TWA	0.02	Not applicable
Nickel (CAS- 7440-02-0)	TWA	1.5	Inhalable dust
Zirconium (CAS 7440-67-7)	STEL	10	Not applicable
	TWA	5	Not applicable

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type of limit	Value (mg/m ³)	Form
Beryllium (CAS 7440-41-7)	Ceiling	0.00005	Not applicable
Cobalt (CAS- 7440-48-4)	TWA	0.05	Dust and fume
Copper (CAS 7440-50-8)	TWA	1	Dust and fume
Nickel (CAS- 7440-02-0)	TWA	0.015	Not applicable
Zirconium (CAS 7440-67-7)	STEL	10	Not applicable
	TWA	5	Not applicable

US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants

Components	Type of limit	Value (mg/m ³)	Form
Beryllium (CAS 7440-41-7)	Ceiling	0.025	Not applicable
	PEL	0.0002	Not applicable
Cobalt (CAS- 7440-48-4)	PEL	0.02	Dust and fume
Copper (CAS 7440-50-8)	PEL	1	Dust and fume
	PEL	0.1	Fume
Nickel (CAS- 7440-02-0)	PEL	0.5	Not applicable

8.1.2 Biological limit values

ACGIH Biological Exposure Indices

Components	Value (µg/l)	Determinant	Specimen
Cobalt (CAS- 7440-48-4)	15	Cobalt	Urine
	1	Cobalt	Blood

8.1.3 Control parameters

Ventilation:

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Whenever possible, the use of local exhaust ventilation or other engineering controls is the preferred method of controlling exposure to airborne particulate. Where utilized, exhaust inlets to the ventilation

system must be positioned as close as possible to the source of airborne generation. Avoid disruption of the airflow in the area of a local exhaust inlet by equipment such as a man-cooling fan. Check ventilation equipment regularly to ensure it is functioning properly.

Provide training on the use and operation of ventilation to all users. Use qualified professionals to design and install ventilation systems.

Wet methods:

Machine Use is normally carried out with a flow of lubricating liquid/coolant, which helps to reduce airborne particles. However, by driving the machine with coolant containing small divided particles in suspension, may cause the concentration increases to such a point where the particles can become airborne during use. Some processes such as sanding and grinding may require a complete covered containment and local exhaust ventilation. Prevent coolant spill on floor areas, external structures or operators' clothing. Use a coolant filtering system to remove particles from the cooling liquid.

Work practices:

Develop working process and procedures to prevent particles that come in contact with workers' skin, hair or personal clothing. If the working practices and / or procedures are not effective enough to control exposure and prevent airborne or visual particles from being stored on skin, hair or clothing, provide appropriate when washing / cleaning facilities. Written procedures should describe the plant's requirements for protective clothing and personal hygiene. These requirements for clothing and personal hygiene helps prevent the spread of the particles to areas that are not used for production or that they comply with the staff home. Never use compressed air to clean work clothes or other surfaces.

Housekeeping:

Use a vacuum or wet cleaning methods for removing particles from surfaces. Be certain to de-energize the electrical system before beginning wet cleaning. Use a vacuum cleaner with a HEPA filter. Do not use compressed air, brushes, or regular vacuum cleaner to remove particles from the surfaces, as this may lead to increased exposure to airborne particles. Follow the manufacturer's instructions when performing maintenance on the vacuum cleaner with a HEPA filter used for cleaning hazardous materials.

8.2 Individual protection measures, such as personal protective equipment

Eye/face protection

Use approved safety goggles, face shields and / or car-welding helmets when there is a risk of eye injury, particularly during use, which generate particles so that the melting, molding, sawing, sanding, grinding, welding and powder handling.

Skin protection

Use protective gloves to prevent contact with particles or solvents. Use protective gloves to prevent cuts and abrasions during handling. Personal protection equipment in accordance with current CEN standards and in cooperation with the supplier of protective equipment. Protective overalls or work clothes must be worn by persons who may come into contact with the particles during activities such as sawing, etc. If this material comes in contact with the skin it can cause, in some sensitive individuals, an allergic skin reaction. Particles trapped under the skin have the potential to create sensitization and skin lesions.

Respiratory protection

When airborne exposures exceed or have the potential to exceed the work area exposure limits, must approved

respirators be used as specified by a safety engineer or another qualified professional. Those who use gas masks must undergo a medical evaluation to determine if they are physically able to use a gas mask.

Thermal hazards

Not available.

Hygiene measures

Handle in accordance with good industrial hygiene and safety practices.

Environmental exposure controls

The environmental manager must be informed of all major releases.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	Solid
Colour	Copper
Odour	Not available
pH-value	Not available
Flammability	Not available
Solubility in water	Not available

9.2 Other information

Vapour pressure: 0,72 hPa (estimated)
Density: 8,86 g/cm³ (estimated)
Melting point/freezing point: 1600 - 1960 °F (871.11 - 1071.11 °C)
Specific gravity: 8.86 estimated

SECTION 10: Stability and reactivity

10.1 Reactivity

Not available.

10.2 Chemical stability

Material is stable under normal conditions.

10.3 Possibility for hazardous reactions

Hazardous polymerization does not occur.

10.4 Conditions to avoid

Avoid dust formation. Contact with acids. Contact with alkalis.

10.5 Incompatible materials

Strong acids, alkalies and oxidizing agents.

10.6 Hazardous decomposition products

No hazardous decomposition products are known.

SECTION 11: Toxicological information

General information:

Inhalation	May cause an sensitization by inhalation. May cause an allergy or asthma symptoms or breathing difficulties if inhaled. May cause an damage to organs (respiratory system) through prolonged or repeated exposure.
Skin contact	May cause an allergic skin reaction.
Eye contact	Not likely, due to the form of the product.
Ingestion	Not likely, due to the form of the product.

11.1 Information on toxicological effects

Acute toxicity	Can cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause an allergic skin reaction.
Skin corrosion	Not likely, due to the form of the product.
Serious eye damage	Not likely, due to the form of the product.
Respiratory sensitization	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Skin sensitization	May cause allergic skin reaction.
Reproductive damage	Classification not possible due to lack of data.
Carcinogenic	Cancer Hazard. IARC Monographs. Overall assessment of carcinogenicity: Beryllium (CAS 7440-41-7) 1 Carcinogenic to humans. Cobalt (CAS 7440-48-4) 2B Possibly carcinogenic to humans. Nickel (CAS 7440-02-0) 2B Possibly carcinogenic to humans.

IARC Monographs. Overall Evaluation of Carcinogenicity

Substance	Carcinogenicity
Beryllium (CAS 7440-41-7)	1 Carcinogenic to humans.
Cobalt (CAS 7440-48-4)	2B Possibly carcinogenic to humans.
Nickel (CAS 7440-02-0)	2B Possibly carcinogenic to humans.

US. National Toxicology Program (NTP) Report on Carcinogens

Substance	Carcinogenicity
Beryllium (CAS 7440-41-7)	Known To Be Human Carcinogen.
Nickel (CAS 7440-02-0)	Known To Be Human Carcinogen. Reasonably Anticipated to be a Human Carcinogen.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Reproductive toxicity	Not available.
Specific organ toxicity	Single exposure can cause allergy or asthma symptoms or breathing difficulties if inhaled. Repeated exposure can cause damage to organs (respiratory system) through prolonged or repeated exposure.
Aspiration hazard	Classification not possible due to lack of data.
Other information	Symptoms may be delayed.

SECTION 12: Ecological information

12.1 Persistence and degradability

There is no data on the degradability of this product.

12.2 Bioaccumulative potential

Not available.

12.3 Mobility in soil

Not available.

12.4 Results of PBT and vPvBB assessment

Not a PBT or vPvB substance or mixture.

12.5 Other adverse effects

Not available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Disposal instructions	The material should be recycled if possible. Recommendations for waste management are based on the material condition at the time when it was delivered. Disposal must be in accordance with applicable laws and regulations and with the specifications at the time of disposal.
Residual waste	Empty containers or without casing may contain residues. Product and packaging must be disposed of in a safe manner.
Contaminated packaging	Empty containers should be taken to an approved waste handling site for recycling or disposal / incineration. Since emptied containers may contain residues, should the warnings on the label be followed also after the container has been emptied.
Hazardous waste code	Not regulated.

SECTION 14: Transport information

14.1 DOT.

Not regulated as dangerous goods.

14.2 IATA

Not regulated as dangerous goods.

14.3 IMDG

Not regulated as dangerous goods.

SECTION 15: Regulatory information

15.1 U.S federal regulations

All components are on the U.S. EPA TSCA Inventory List.

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D).

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4).

Substance	Listed or not?
Beryllium (CAS 7440-41-7)	Listed.
Cobalt (CAS 7440-48-4)	Listed.
Copper (CAS 7440-50-8)	Listed.
Nickel (CAS 7440-02-0)	Listed.

U.S. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050).

Not listed.

15.2 Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazardous categories	Hazardous?
Immediate Hazard	Yes
Delayed Hazard	Yes
Fire Hazard	No
Pressure Hazard	No
Reactivity Hazard	No

SARA 302 Extremely hazardous substance.

Not listed.

SARA 311/312 Hazardous chemical.

No.

SARA 313 (TRI reporting).

Hazardous categories	Hazardous?
Immediate Hazard	Yes
Delayed Hazard	Yes

Fire Hazard	No
Pressure Hazard	No
Reactivity Hazard	No

15.3 Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List.

Beryllium (CAS 7440-41-7)
Cobalt (CAS 7440-48-4)
Nickel (CAS 7440-02-0)

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130).

Not regulated.

Safe Drinking Water Act (SDWA).

Not regulated.

15.4 U.S State regulations

WARNING:

This product contains a chemical known to the State of California to cause cancer.

US - New Jersey RTK - Substances: Listed substance.

Beryllium (CAS 7440-41-7)
Cobalt (CAS 7440-48-4)
Copper (CAS 7440-50-8)
Nickel (CAS 7440-02-0)
Zirconium (CAS 7440-67-7)

US - Pennsylvania RTK - Hazardous Substances: All compounds of this substance are considered environmental hazards.

Beryllium (CAS 7440-41-7)
Cobalt (CAS 7440-48-4)
Copper (CAS 7440-50-8)
Nickel (CAS 7440-02-0)

US - Pennsylvania RTK - Hazardous Substances: Special hazard.

Beryllium (CAS 7440-41-7)
Nickel (CAS 7440-02-0)

US. California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100).

Not listed.

US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a)).

Beryllium (CAS 7440-41-7)
Cobalt (CAS 7440-48-4)
Copper (CAS 7440-50-8)
Nickel (CAS 7440-02-0)

US. Massachusetts RTK - Substance List.

Beryllium (CAS 7440-41-7)
Cobalt (CAS 7440-48-4)
Copper (CAS 7440-50-8)
Nickel (CAS 7440-02-0)
Zirconium (CAS 7440-67-7)

US. New Jersey Worker and Community Right-to-Know Act.

Beryllium (CAS 7440-41-7)
Cobalt (CAS 7440-48-4)
Copper (CAS 7440-50-8)
Nickel (CAS 7440-02-0)

US. Pennsylvania RTK - Hazardous Substances.

Beryllium (CAS 7440-41-7)
Cobalt (CAS 7440-48-4)
Copper (CAS 7440-50-8)
Nickel (CAS 7440-02-0)
Zirconium (CAS 7440-67-7)

US. Pennsylvania Worker and Community Right-to-Know Law.

Beryllium (CAS 7440-41-7)
Cobalt (CAS 7440-48-4)
Copper (CAS 7440-50-8)
Nickel (CAS 7440-02-0)
Zirconium (CAS 7440-67-7)

US. Rhode Island RTK

Beryllium (CAS 7440-41-7)
Cobalt (CAS 7440-48-4)
Copper (CAS 7440-50-8)
Nickel (CAS 7440-02-0)

15.5 US. California Proposition 65

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance.

Substance	Date
Beryllium (CAS 7440-41-7)	Listed: October 1, 1987
Cobalt (CAS 7440-48-4)	Listed: July 1, 1992
Nickel (CAS 7440-02-0)	Listed: October 1, 1989

SECTION 16: Other information

This document has been prepared using data from sources considered technically reliable and the information considered to be accurate. We pose no warranties, either expresses or implied, in case the information provided herewith is accurate or not. We cannot foresee all the circumstances by which this information and its products are to be used, and user conditions are beyond its control clone. User is responsible to evaluate all available information when using this product for a particular purpose, and to comply with all federal, state, provincial and local laws, statutes and regulations.