

CONTROL OF SUBSTANCES HAZARDOUS TO HEALTH

COSHH ASSESSMENT CHECKLIST

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CHECK-LIST FOR THE CONTROL OF SUBSTANCES WHICH MAY BE HAZARDOUS TO HEALTH

QUESTION	ANSWERS/COMMENTS
1. Manufacturer/Supplier?	Leaded glass enamels are supplied by a number of different manufacturers.
2. Trade name of product?	Leaded vitreous glass enamels
3. Main chemical ingredient?	Borosilicate glass frit
4. Other chemical components?	Leaded enamels contain lead and may also contain small quantities of insoluble chromium, cobalt, copper, chromium, nickel, antimony, cadmium and manganese compounds. These present minimal risk when handled carefully in the small quantities required. Titanium Dioxide Chromium compounds Barium Sulphate Iron Oxide Copper oxides Cobalt oxides Cadmium oxides Zinc sulphides Antimony compounds Manganese compounds Arsenic compounds Barium compounds Cadmium pigments Cobalt compounds Nickel compounds Nickel monoxide

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5. Information from Data Sheet:

Potential to cause harm?
e.g. Toxic, Corrosive, Etc.

Inhalation

Nickel monoxide is carcinogenic, only by the inhalation route

Excessive exposure may cause damage to lungs and kidneys

All products - Symptoms of chronic lung disease.

Excessive exposure may cause damage to the lungs and kidneys, chronic lung disease and lead poisoning

Ingestion The products are of low solubility in body fluids and it is likely to be of low acute toxicity

Eyes May cause physical irritation and inflammation

Skin The products are not primary irritants, but as with any abrasive powder they may give rise to minor irritation.

Some cobalt compounds cause dermatitis and sensitisation, but it is unlikely with these products.

Some people may become allergic to nickel compounds and develop long-lasting sensitivity.

R20 - Harmful by inhalation

R22 - Harmful if swallowed

R23 - Toxic by inhalation

R25 - Toxic if swallowed

R33 danger of cumulative effects

R40 possible risk of irreversible effects

R61 may cause harm to the unborn child

S13 keep away from food, drink and animal feeding stuff

S20/21 when using do not eat, drink or smoke

S22/23 do not breathe dust or spray

S45 in case of accident or if you feel unwell, seek medical advice immediately (show label where possible)

S53 avoid exposure, obtain special instructions before use

State : Solid

Dustiness : High

Hazard group : D

Quantity used : Small

How many times a day ? 20 times a day

How long does the task take ? 2 minutes

Flammability?

Appearance & Odour - Coloured or white powders, odourless

Flash point (°C) - Not applicable

Flammability - Not applicable

Explosive properties - Non-explosive

Oxidising properties - None

Specific gravity - 3-5

pH value - 7 (insoluble in water)

Melting point (°C) - Not available - ranges from 700 - 900°C

OEL or MEL specified

Although cadmium pigments have a WEL of 0.03 mg/m³ (8hr TWA) and certain chromium compounds have a WEL limit of 0.05mg/m³ (8hr TWA), these compounds are present as minor constituents of the enamelling glass and these limits will not be reached in the workshops. The other trace compounds have higher WEL values and these limits will not be approached.

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	UK occupational Exposure Limit	EH40) Mg/m3 (8hr TWA)*	% in products
	Lead compounds (as Pb)	0.1	35 - 53
	Cadmium compounds (as Cd)	0.025	2.5 - 3
	Cobalt compounds (as Co)	0.1	2.5- 4.5
	Cadmium pigments, respirable dust (as Cd)	0.03	0 - 8
	Barium sulfate, respirable dust	2	<5
	Antimony compounds (as Sb)	0.5	3
	Chromium 6 compounds (as Cr)	0.05	3
	Dusts - total inhalable	10	
	Dusts - total respirable	5	
	Some enamels have more than one Occupational Exposure Limit CADMIUM persons handling the products regularly and who are exposed to significant amounts of dust should have regular health check.		
Protective equipment recommended? (Specify)	Eye protection – goggles Dust mask Disposable gloves		
Storage handling and disposal arrangements	Handling Do not eat, drink, or smoke in areas where the material is used. Wash thoroughly after handling the material Storage Store in dry area. Dispose in accordance with current waste Disposal regulations (for UK - Control of Pollution (Special Waste Regulations 1996). Landfill is the most appropriate method.		

First aid	Inhalation Remove patient to fresh air, loosen tight clothing and seek medical attention Ingestion Do not induce vomiting, seek medical advice Eyes Wash immediately with copious amounts of water Skin Wash affected areas with water
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Fire	Extinguishing - Media Suitable for surrounding fire conditions Special Exposure - In the event of a fire, the products may emit harmful or toxic fumes Personal protective equipment
Accidental release	Leaks & Spills - Use suitable vacuum equipment where reasonably practicable, otherwise damp down and scoop into a receptacle Personal protective - equipment Respiratory protective equipment Handling Do not eat, drink, or smoke in areas where the material is used. Wash thoroughly after handling the material Storage Store in dry area
Handling & Storage	Wear appropriate protective clothing. Sweep up and place in closed containers for disposal. Ventilate area. Wipe up with a damp cloth. Finally flush area with plenty of water. Where LEV is not practicable and exposure is likely to be excessive, approved respiratory protection to CEN standards prEN 140, 141, 143 or 149 should be worn. Protective gloves and overalls are recommended for prolonged contact.
Routes of entering the body?	Inhalation Nickel monoxide is carcinogenic, only by the inhalation route Excessive exposure may cause damage to lungs and kidneys All products - Symptoms of chronic lung disease. Excessive exposure may cause damage to the lungs and kidneys, chronic lung disease and lead poisoning Ingestion The products are of low solubility in body fluids and it is likely to be of low acute toxicity Eyes May cause physical irritation and inflammation Skin The products are not primary irritants, but as with any abrasive powder they may give rise to minor irritation. Some cobalt compounds cause dermatitis and sensitisation, but it is unlikely with these products. Some people may become allergic to nickel compounds and develop long-lasting sensitivity.
Effects on body	Acute toxicology LD50 Oral >2000mg/kg LD50 dermal not known LD50 inhalation not known Health effects Prolonged or repeated exposure above Occupational Exposure Standards may cause:- Lead to accumulate in the body. In serious cases this may cause anaemia and damage to the kidneys and central nervous system. Lead in the blood of pregnant women may affect the development of the unborn child. Persons exposed to lead compounds should have regular health checks that should include lead in blood monitoring.

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Effects on body (continued)	Lead chromate is classified as a category 3 carcinogen, because there is limited evidence of human carcinogenicity Persistence The products are chemically and physically stable and will persist in the environment. Ecotoxicity – not known.
6. Proposed application?	Sifting and wetlaying enamel as part of production of jewellery and other enamelled objects. The borosilicate glass enamel is fused to the surface of various types of metal – copper, steel, silver, gold, etc.
7. By Whom is the product to be used?	Products are used by the craft enamellers and jewellers.
8. Does use foreseeably affect public or contractors	No
9. How is the product used? (Brushing, spraying, mixing)	Sifting dry enamel or applying enamels mixed with water (wet laying).
10. Has consideration been given to a safer substitute? If yes, what substitutes were considered?	Yes – Unleaded enamels are available, however for certain types of application/processes they are not comparable and therefore it is not a real alternative. Unleaded enamels are used where possible.

11. Has a safe system of work been established? - If 'yes' give details	Yes – Wear protective clothing, gloves and work in well ventilated area. Read all instructions associated with product Dispose appropriately of all products after use.
12. Precautions to be taken in its use? (Ventilation, etc.)	Adequate ventilation should be provided so that Occupational Exposure Limits are not exceeded. Protective clothing, gloves and goggles to be worn at all times.
13. What information, training or instruction is intended to be given to Supervisors and Operatives?	Read all instructions and use in well ventilated area wearing protective gloves, eye wear and clothes. All users will be appropriately instructed on safety and use of the enamels. Standard guidelines for health and safety should be observed throughout all procedures.
14. Who will be responsible for supervising the use of the substance?	Craft enamellers Workshop participants and workshop tutors

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NAME	
LOCATION	
NAME OF PERSON COMPLETING PART 1 : (BLOCK CAPITALS)	Julie Rattray
SIGNATURE	Julie Rattray
DATE OF ASSESSMENT REVIEW	20/2/2014

COSHH REGULATIONS

WORK METHOD STATEMENT

PRODUCT :

FOR USE BY :

LOCATION :

METHOD STATEMENT

1. Read and follow instructions on the package.
Wear protective gloves, clothing and goggles when handling.
Work in well ventilated environment.
Follow Guild of Enamellers Guidelines for Health and Safety.
- 2.