



## MATERIAL SAFETY DATA SHEET

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### COMMERCIAL NAME: DALIC CADMIUM 2022 PLATING SOLUTION DPS 6122

IDENTITY	% w/w	CLASSIFICATION	CAS. NO.	WEL (mg/m <sup>3</sup> )	
				8 HOUR LIMIT	15 MIN' LIMIT
Cadmium Sulphate CdSO <sub>4</sub>	15 - 20	Carc Cat2; R45	10124 - 36 - 4	0.025 (As Cd)	-
Cadmium Sulphate CdSO <sub>4</sub>	15 - 20	T;R48/23/25 T+;R25, R26	10124 - 36 - 4	0.025 (As Cd)	-
Cadmium Sulphate CdSO <sub>4</sub>	15 - 20	Mut Cat2; R46	10124 - 36 - 4	0.025 (As Cd)	-
Cadmium Sulphate CdSO <sub>4</sub>	15 - 20	Xn; R22	10124 - 36 - 4	0.025 (As Cd)	-
Cadmium Sulphate CdSO <sub>4</sub>	15 - 20	Toxic for repro Cat2; R60/61	10124 - 36 - 4	0.025 (As Cd)	-
Cadmium Sulphate CdSO <sub>4</sub>	15 - 20	N; R50/53	10124 - 36 - 4	-	-
Triethanolamine	2 - 9	Xi; R36/38	102 - 71 - 6	5 (USA)	-

### HAZARD IDENTIFICATION

Aqueous, mildly alkaline preparation containing particularly cadmium sulphate. May cause adverse physiochemical effects if improperly used. Cadmium compounds accumulate in the body having a poisoning effect on the kidneys. Absorption is by ingestion, or inhalation of fumes or mist. Long term exposure can give rise to lung cancer. This solution is also irritating to skin and eyes. This preparation must be considered VERY TOXIC by inhalation and TOXIC if swallowed and in case of prolonged exposure. It should be regarded as a carcinogen, mutagen and poison for the reproduction of 2nd category (unproved effects on man but, there is sufficient evidence to provide a strong presumption that human exposure to it may result in such effects), if protective measures are not taken. It is necessary to consider therefore that the risk of a development of cancer, of hereditary genetic changes, of loss of fertility and on the possible delay on the child's development before and after birth may be increased.

### TOXICITY DATA

No data is available with regard to the actual product; the evaluation has therefore been made utilising other available data with respect to the relevant constituent chemicals. Acute exposure to cadmium has resulted in flu-like symptoms, hoarseness, coughing, runny nose, etc. More serious symptoms have included emphysema, pulmonary oedema and serious damage to functioning of kidneys. This is the most severe effect of cadmium absorption leading to formation of kidney stones and in some cases, renal failure and death. In the case of ingestion, intense digestive problems occur almost immediately and can include; muscular cramps and hyper-salivation. Ingestion may be fatal in the case of a massive swallowed quantity. Cadmium is a cumulative poison (especially accumulating in the liver and kidneys). The biological half life of cadmium is very long, from 10 - 30 years. This explains the progressive evolution of pathological symptoms, even after the end of exposure. Chronic, long term exposure to 'concentrated' triethanolamine may lead to liver and kidney damage.

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**FIRST AID**

INHALATION	Theoretically not applicable under normal conditions of use. Under abnormal conditions where inhalation has taken place: Remove to fresh air and quiet environment. Maintain a clear airway. In severe cases or if in any doubt seek medical advice.
SKIN CONTACT	Remove contaminated clothing and wash all affected areas of skin with water for at least 10 minutes. In severe cases obtain medical attention.
EYE CONTACT	Rinse immediately with plenty of water for approximately 15 minutes and seek medical advice.
INGESTION	If the patient is conscious try to induce vomiting. Obtain immediate and urgent medical attention.
OTHER	Biological monitoring should be carried out to determine level of exposure. Those administering first aid and according to the situation, should protect themselves from exposure by wearing suitable protective clothing, shoes, glasses or masks. Wear at least protective gloves.

**FIRE & EXPLOSION MEASURES**

SUITABLE EXTINGUISHING MEDIA	Use special powders for metal fires or, failing this, other inert powders.
UNSUITABLE EXTINGUISHING MEDIA	Do not use water or carbon dioxide.
POSSIBLE EXPOSURE HAZARDS	May evolve pungent and toxic fumes in fire, notably; emission of cadmium, carbon, nitrogen and sulphur oxides. Avoid contact with powerful oxidising or acidic agents.
PROTECTIVE EQUIPMENT FOR FIREFIGHTERS	Self-contained breathing apparatus and suitable protective clothing.

**SPILL OR LEAKAGE PROCEDURES**

Avoid contact with skin, wear at least gloves and, if needed a suitable dust/mist mask. Soak up with absorbent material (sand etc.) and dispose of to Local Authority Regulations or via a licensed disposal contractor.

**HANDLING AND STORAGE**

Do not freeze. Store at ambient temperature away from direct sunlight and heat, in tightly closed containers. Store away from oxidising and acidic agents and organic products in general. Ensure that all containers are clearly and appropriately labelled. Do not use containers for other products.

**EXPOSURE CONTROL/PERSONAL PROTECTION**

Wear eye protection and a suitable dust/mist mask or face shield, nitrile gloves and suitable protective clothing. Use in well ventilated area preferably with local exhaust ventilation. In case of insufficient ventilation wear suitable respiratory equipment. Do not eat, drink or smoke in the area where this product is used. Wash hands thoroughly before undertaking any of these activities. Perform periodic checks of the working area to ensure cleanliness and check any exhaust systems for efficiency. Provide a shower, a powerful tap and sink unit together with eye wash facilities close to the working area. Have available a protective breathing mask for emergency intervention.

**PHYSICAL AND CHEMICAL PROPERTIES**

APPEARANCE/ODOUR: **CLEAR COLOURLESS LIQUID WITH MILDLY 'SWEET' ODOUR**

Boiling Point: 100°C	Freezing Point: 0°C	Specific Gravity: 1.22
Flash Point: N/A	pH: 9.0	Solubility in Water: Infinite

**COMMERCIAL NAME: DALIC CADMIUM 2022 PLATING SOLUTION DPS 6122 (CONTD.)****STABILITY AND REACTIVITY**

STABILITY

Stable at ambient temperature.

MATERIALS TO AVOID

Powerful oxidising or acidic agents.

HAZARDOUS DECOMPOSITION PRODUCTS

May evolve pungent and toxic fumes in fire. Notably; emission of cadmium, carbon, nitrogen and sulphur oxides.

**ECOLOGICAL INFORMATION**

Toxic to the aquatic environment.

**DISPOSAL CONSIDERATIONS**

To Local Authority Regulations or via a licensed disposal operator.

**TRANSPORT INFORMATION**

UN NO.: 2570

CLASS: 6.1

PACKING GROUP: III

I.M.D.G.:

ADR/RID:

ICAO/IATA:

619 (100 kgs)

**REGULATORY INFORMATION**

LABEL:

TOXIC (SKULL AND CROSSBONES)

CLASSIFICATION:

TOXIC

**RISK PHRASES**

May cause cancer. Toxic: danger of serious damage to health by prolonged exposure through inhalation and if swallowed. Harmful if swallowed. Toxic if swallowed, very toxic by inhalation. Irritating to eyes and skin. May cause heritable genetic damage. May impair fertility. May cause harm to the unborn child. Very toxic to aquatic organisms, may cause long term adverse effects in the aquatic environment.

**SAFETY PHRASES**

Avoid exposure - obtain special instructions before use. In case of accident or if you feel unwell, seek medical advice immediately (show label where possible). In case of contact with eyes rinse immediately with plenty of water and seek medical advice. Do not breathe mist or spray. Wear suitable protective clothing, gloves and eye/face protection.

**CHEMICALS TO BE NAMED**

CONTAINS:

Cadmium Sulphate

Triethanolamine

**FURTHER USEFUL INFORMATION**

'Cadmium and You - Working with Cadmium' HSE Publication INDG391 01/04 C50

'Health Surveillance requirements in the electroplating industry' HSE Publication EIS5 (rev) 03/98

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Signed:



Authorised by: Ian L Mackenzie Signed