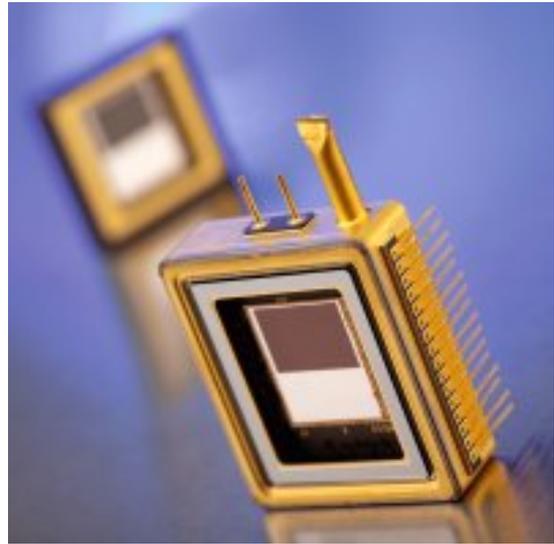


- Overview
 - Summary
- Inherent hazards
 - Hazards that are present as a result of the composition and construction of the product
- Transportation hazards
 - Hazards that affect transportation as defined by the IATA Dangerous Goods Regulations
- Operational hazards
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- Decommissioning
 - Particular hazards that may be present during decommissioning of the product
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 - Guidance for the safe disposal of product at end of life including environmental considerations
- Material data
 - A breakdown of the material content of all product types covered by this Product Safety Data Sheet



Overview

CCD sensors are generally safe when handled and used according to the guidelines included in this data sheet, and require no special handling or processing for safe disposal or environmental protection. Information necessary to facilitate recycling is included.

Inherent Hazards

CCD sensors are sufficiently robust to withstand normal handling. However broken sensors can pose some hazards.

Some variants are supplied with glass components such as windows or fibre optics, which can present the hazard of sharp edges if broken. Follow normal precautions for the handling of sharps including the use of tools or personal protective equipment.

Transportation Hazards

There are no specific transportation hazards associated with these products.

Operational Hazards

CCDs sensors are safe in use when operated within the operating conditions specified in the product data sheet.

Peltier packages must always be used with the correct polarity of power. Rapid heating of the sensor may occur if the peltier is run with reverse polarity, which may cause a rapid rise of temperature and pressure within the package resulting in hot surfaces.

Decommissioning

There are no additional hazards associated with decommissioning of this device.

Disposal

There are no hazardous materials in sufficient quantities to require special treatment from an environmental protection point of view. Processes for separation of the materials should be designed to avoid the risks arising from breakage as described above.



Products that are compliant with the RoHS directive, 2005/95/EC will be marked with the symbol shown on the left. This marking may appear on the product packaging.

Material Data

The following table of material data provides information to assist disposal in accordance with environmental regulations.

Approximate Composition (% per weight)

CCD Type		Mass (g)	Silicon	Ceramic	Quartz / Glass	Sapphire window	Aluminium	Gold	Copper	Indium	Solder	Kovar® Iron (Fe/Ni/Co)	Invar Alloy 42	Silver Copper alloy	Silver Copper Palladium Alloy	Bismuth Telluride	Other Metals	Other Materials
Ceramic pack CCD (including temporary window)	CCD47/57/77 Compact Package	6.3	12.3	66.9	18.8	-	<<1	<<1	-	-	-	-	1.9	<<1	-	-	<1	<1
	CCD30-11	6.4	6.0	62.5	19.2	-	<<1	<<1	-	-	-	9.2	3.0	<<1	-	-	<1	<1
	CCD97	5.84	4.8	76.3	18.8		<<1	<<1										<1
	CCD201	8.55	21	70	7.6		<<1	<<1										<1
Peltier pack CCD65		26.7	1.2	19.3	-	13.7	<<1	<<1	-	-	<<1	61.6	-	-	-	3.4	-	<1
Peltier pack CCD47/CCD39		118.9	0.6	16.6	6.7	-	<<1	<<1	1.7	1.0	<<1	66.5	<<1	1.0	0.4	3.9	-	<1
CCD44-82 and CCD42-90		138.2	0.8	3.53			<<1	<<1					95.6					<1
Fibre-Optic attachment		Depending on variant	Silicon Dioxide	Lead Oxide	Aluminium Oxide	Arsenic Trioxide	Boron Oxide	Calcium Oxide	Lanthanum Oxide	Niobium Pentoxide	Potassium Oxide	Sodium Oxide	Zinc Oxide	Zirconium Oxide				
Ratio of constituents are supplier proprietary information			10 - 70	10 - 50	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30				

In the event of encountering difficulties in disposing of these products, contact e2v technologies for advice.