MATERIAL SAFETY DATA SHEET

acc. to 91/155/EEC, resp. TRGS 220

tradename: **M219/13** made / revised: 01 / 10.06.1999

1. *Substance / Preparation and Company Identification*

Film types M219/13

Company: KLÖCKNER PENTAPLAST GMBH & Co KG
Werk Gendorf
D – 84504 Burgkirchen
Phone: +49 / (0)8679-7-2280
Fax: +49 / (0)8679-7-5065
Phone for emergency use: +49 / (0)8679-7-2222 (fire department)

2. *Composition / Information on Ingredients*

Chemical Description
Composition of Polyvinylchloride acc. to DIN ISO 7728: PVC-U

Dangerous components
None

3. *Hazard Identification*

Not applicable

4. *Emergency and First Aid Procedures*

(only necessary when handled without care)

Inhalation:	If PVC decomposes due to overheating or in contact with fire: Remove affected persons to fresh air. In case of irritation of respiratory system or if feeling unwell after prolonged exposure, get medical attention.
Skin contact:	If contact with hot (melt) product occurs: Wash with plenty of water, treat as for thermal burn.
Eye contact:	After contact with hot (melt) product: Immediately flush eyes with water for several minutes at least, get medical attention.
Ingestion:	To avoid mechanical irritation; get medical advice.
Advises for the doctor:	After inhalation of decomposed products: Symptomatic treatment (decontamination, vital functions), if necessary action against irritations of the mucous membranes by HCl.

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5. Fire-Fighting Procedures

Suitable extinguishing media: Water spray, powder, carbon dioxide

PVC-U does not burn without a slave flame (self-extinguishing).

Unsuitable extinguishing media:	None
Burning may release:	Carbon dioxide (CO_2)
	Water vapour (H_2O)
	Hydrochloric gas (HCl)

If the burning material cannot get enough air, release of carbon monoxide, soot and other gases and vapours is possible.

Special protective equipment:	If necessary, use air-bottled or air-circulating apparatus for fire-fighters.
Further information.	Observe local regulations when contaminated water and burning waste are removed.

6. Spill or Leak Procedures

Personal Precautions:	Not applicable
Environmental Precautions:	Not applicable
Methods of Cleaning:	Pick up by mechanical means for disposal or reuse.

7. Handling and Storage Precautions

Handling
Avoid overheating the material, it decomposes to gaseous components (see also 5.). Thermal degradation does not occur at low temperatures, but becomes faster at higher temperatures.

Decomposition:	> 150 °C - long term contact
	> 250 °C - short term contact (e.g. warm forming)

It is advisable to install local exhaust ventilation in the vicinity of processing machines in all areas where melt or high temperature processing is carried out (Germany: observe TRGS 402).

Fire and explosion protection
Take precautionary measures against static discharge, e.g. by using proper grounding techniques, when handling rolls or sheets in dry rooms (esp. to avoid damage to personnel!). Acc. to VDI 2263, page 1, par. 2.1.2.3 (dd May 1990) PVC is not dust explosive as delivered by KLÖCKNER PENTAPLAST GMBH.

Storage
Take precautionary measures to avoid fire hazard. Store in normal room conditions, without direct exposure to sunlight.

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8. Exposure Control / Personal Protection

Additional advises tips for design of machines:
s. item 7

Components with limits to be observed (depending on work station):
PVC is recognised as safe. However, it may contain trace amounts of
Vinylchloride monomer VCM CAS-No. 75-01-4 EINECS-No. 2008310

MAK-Value: (Germany, as TRK-value acc. to TRGS 102): 2 ppm (5 mg/m^3)

Given the special precautions mentioned under 7. HANDLING, these traces present no toxic risk to the processing personnel.

Protection
Gloves should be worn when handling hot material. Safety glasses are normally recommended for all industrial workplaces, e.g. when handling melt material.

9. Physical and Chemical Properties

Form:	Films, rolls or sheets	
Colour:	From clear to black, as required	
Smell:	Odourless under normal conditions, melt material has a specific odour known as "plastic".	
Change of state:	Softening temperature (DIN EN ISO 306) :	60 .. 90 °C
	Glass transition temp.:	approx. 80°C
	Ignition temperature:	see point 7
	Density (DIN 53479):	1,25...1,45 g/cm^3
Solubility (PVC):	Soluble in:	e.g. tetrahydrofurane and cyclohexanone
	Partly soluble in:	different aromatic hydrocarbons
	Not soluble in:	water, diluted acids and bases
Fire supporting properties:	None PVC products are also not easily combustible without fire protecting equipment.	

10. Stability and Reactivity

Conditions to avoid
Thermal degradation by overheating (see point 7.).

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11. Information about Toxicity

PVC is recognised as safe and biologically inert.

12. Ecological Information

PVC is not soluble in water (WGK 0, by supplier self declaration); PVC is harmless in contact with fishes and bacteria. In water treatment plant PVC can be separated mechanically.

13. Disposal Considerations

Uncontaminated material is normally used as material for recycling, but can also be treated as household or incineration waste in accordance with local regulations.
Old Key no. for PVC-waste, PVC-films and foam: 571 16 (TA waste / LAGA-catalogue "kind of waste without duty of proof").

New key no. according European Waste-Catalogue, EAK: 75/442/EEC: 12 01 05

14. Transport

According to the German regulations on Hazardous Materials (GefStoffV) in the version dated 26.10.93 (which incorporated EC regulations into German law) PVC is not considered as a hazardous material. Special labelling is not necessary either.

15. Regulatory Information

EEC labelling acc. to 67/548/EEC: Not applicable
National legislation acc. to § 4a GefStoffV: Not applicable

NB: This means PVC-films are not considered as hazardous materials.

16. Further Information

Films of the Klöckner Pentaplast GmbH are produced under the regulations of Quality Assurance System DIN EN ISO 9001. Moreover we are certified according to the European Öko-Norm EMAS (Environmental-Management-Audit-System, EWG No. 1836/93, Öko Audit).

The information and recommendations contained herein are based upon present data believed to be correct. However, no guarantee or warranty of any kind expressed or implied is made with respect to the information contained herein.