SCANDIA
MATERIALOGRAPHIE

# COLD MOUNTING SYSTEM

## FAST, SIMPLE, EFFICIENT

# SCAN-DIA COLD MOUNTING SYSTEM

From the beginning of the company's history, SCAN-DIA has favoured cold mounting and developed the internationally known **SCAN-DIA COLD MOUNTING SYSTEM**, a well-coordinated mounting system solution which brings many benefits: **time savings, flexibility, and high economic efficiency**.

Investment costs are particularly low, especially when compared to hot mounting.
Based on decades of experience in sample preparation, the system is continuously enhanced and supplemented by innovative elements. Thus, it meets the requirements of almost all material samples occurring in materialography.
Individual components are closely connected and excellent results are achieved during sample mounting.
**Short preparation times**, **good reproducibility**, and a **favourable price** are further characteristic features of the SCAN-DIA cold mounting system.

## COMPONENTS OF THE SCAN-DIA COLD MOUNTING SYSTEM

- SCANDIPLAST – standard mounting resin
- SCANDIQUICK – quick mounting resin
- SCANDIPLEX – special mounting resin
- SCANDIFORMS – silicone rubber embedding moulds
- AEQUIDUR – hardness regulator
- SCANDICLIP – mounting clip
- MOUNTING SET – mounting accessory
- VACUUM SET UNIVERSAL

With regard to handling, hardness, marginal seal, homogeneity, as well as the absence of bubbles in the samples, the SCAN-DIA mounting system meets highest demands.

## SAMPLE MOUNTING

After sectioning, material samples are usually mounted.
They are typically embedded in synthetic material. This procedure ensures that the sample is held securely for a subsequent mechanical preparation.
During the cold mounting process, the mounting resin is mixed with a hardener. The mixture is subsequently poured into an embedding mould which contains the sample. Then polymerisation takes place.
SCAN-DIA supplies three different mounting resins which are specially designed for materialography:
**SCANDIPLAST**, the standard mounting resin, **SCANDIQUICK**, the quick mounting resin, and **SCANDIPLEX**, the special mounting resin.
Best chemical properties, good final hardness, the absence of bubbles, as well as a very good bond between the mounting resin and the material sample characterise the high quality SCAN-DIA mounting resins.

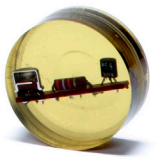
**Further useful auxiliaries complement the SCAN-DIA COLD MOUNTING SYSTEM:**

The **SCAN-DIA EMBEDDING SET** comprises mixing cups, glass stirrers, paper discs, and a silicone sheet. A particularly extensive range of embedding moulds, the **SCANDIFORMS**, allows for reproducible sample preparation. Fine or thin material samples may be secured using the mounting clip **SCANDICLIP** before pouring the resin.

The **AEQUIDUR** hardness regulator allows for aligning the hardness of the material sample with the hardness of the mounting resin. Porous or complex material samples with indentations or undercuts may be mounted under vacuum using the **VACUUM SET UNIVERSAL**, a handy laboratory instrument.

# OVERVIEW OF COLD MOUNTING RESINS



| | SCANDIPLAST | SCANDIQUICK | SCANDIPLEX | SCANDIPLEX + VARIOPLEX |
|---|---|---|---|---|
| Material | Polyester | Acrylic | Epoxy | Epoxy |
| Curing time* | 45 min. | 6 min. | 50-60 min. | 2-24 h, variable |
| Curing temperature* | approx. 140 °C | approx. 90°C | approx. 140°C | approx. 25-130°C variable |
| Pot life | 6 min. | 2-3 min. | 20 min. | 20-120 min., variable |
| Shrinkage* | low | very low | extremely low | no shrinkage |
| Colour | green, transparent | light orange, slighty transparent | yellow, transparent | yellow, transparent |
| Properties | good final hardness, bubble-free, suitable for vacuum mounting | highly fluid, very fast curing, not suitable for vacuum mounting | very good bond with the sample edge, very suitable for vacuum mounting | very suitable for temperature-sensitive materials |

* based on a sample with Ø 32 x 25 mm height


**Phone** +49 (0) 2331 6 24 69 0 | **Fax** +49 (0) 2331 6 24 69 29

# MOUNTING RESINS

## SCANDIPLAST


A Polyester-based **standard mounting medium** which consists of mounting resin and hardener.
SCANDIPLAST is easily handled during mixing. It is characterized by a particularly good bond with the sample and provides for bubble-free curing.
At room temperature (21 °C), the sample cures in approx. 45 minutes without additional pressure or heat. SCANDIPLAST is **remarkably hard** and **abrasion-resistant**, making it suitable for further mechanical processing, grinding, or polishing.
Furthermore, SCANDIPLAST is resistant to acids or solvents.
Thanks to its fluidity and a pot life of 6 minutes, SCANDIPLAST is well suitable for vacuum mounting.

## SCANDIQUICK


Due to its short curing time of 6-8 minutes at room temperature (21 °C), the two-component **quick mounting acrylic resin** is preferably used for production control.
SCANDIQUICK is rapidly and easily mixed. There is no need for weighing.
After mixing, it is highly fluid and pourable for a time of three minutes.
The sample cures bubble-free without additional pressure or heat. SCANDIQUICK is resistant to acids or solvents. It is hard, abrasion-resistant, and well suitable for further mechanical processing during grinding and polishing.

## SCANDIPLEX


The **special mounting medium** consists of mounting resin and an epoxy-based hardener.
Mixed SCANDIPLEX is pourable for a time of **20 minutes**. Thus, it **is very well suitable for vacuum mountings**.
Besides simple handling during mixing, SCANDIPLEX is characterized by a particularly good bond with the sample.
It is **extremely shrinkage free** and particularly suitable for mountings of geometrically complex parts, rings, etc. At room temperature (21 °C), the curing time of the sample is approx. 60 minutes. The sample cures without additional pressure or heat. SCANDIPLEX is resistant to acids or solvents. It is hard and abrasion-resistant and thus prepares the sample for mechanical processing such as grinding and polishing.

## VARIOPLEX


An additional component for complex mounts which is solely applicable in **connection with SCANDIPLEX**. Depending on the mixing ratio, pot life and curing time are prolonged by using VARIOPLEX. Simultaneously, the **curing temperature** can maximally be **lowered** to room temperature. Therefore, VARIOPLEX is suitable for mounting temperature-sensitive materials.

# ACCESSORIES

## SCANDIFORM

**SCANDIFORMS are made from silicone rubber. They are particularly designed for cold mounting and allow for a precise fixation of samples in mounts in different shapes and sizes.**

Thanks to good thermal properties and the **stable** yet **flexible shape**, SCANDIFORM guarantees a very smooth surface. The cured sample can subsequently be **released without residual contamination**. Additional cleaning as well as the use of release agents may be omitted.

SCANDIFORM is well suited for polyester resins such as SCANDIPLAST, for acrylic resins such as SCANDIQUICK, or for epoxy resins such as SCANDIPLEX.


## AEQUIDUR

The hardness regulator AEQUIDUR in powder form is added to the mounting resin.

Thus, particularly **hard surfaces** as well as an optimised **edge retention** between the mounting medium and the material sample can be achieved.

AEQUIDUR brings in line the hardness of the mounting resin with the hardness of the material sample.

During further preparation, a relief formation is avoided. All mounting resins from the SCAN-DIA range are particularly suitable and matched for use with AEQUIDUR.

There is no risk of particles breaking away. The fine-grained powder comes in three degrees of hardness: S = soft, M = medium, and H = hard.

Thus, hardness values of materials ranging from aluminium to carbides can be obtained.

## SCANDICLIP

This useful accessory serves **for the fixation** of wires, pins, and sheet materials.

Thus, fragile samples are **stabilised** during mounting and a precise attachment of mounting resin and material sample is guaranteed.

SCANDICLIP is suitable for **cold and hot mounting**.

Alternatively, you may use SCANDIFORM with its 3 slots, an embedding mould particularly designed for **thin material samples**.

SCANDIFORM is suitable for the mounting of material samples with different material thicknesses. It comes in two sizes: inside Ø 32 mm – slot width 1 or 2 mm, inside Ø 38 mm – slot width 3 mm.


## VACUUM SET UNIVERSAL

The SCAN-DIA-developed device for vacuum mounting allows for perfect mounting and **impregnation of porous and brittle samples**.

The VACUUM SET UNIVERSAL can be used in combination with the mounting resins SCANDIPLAST and SCANDIPLEX.

**The procedure is simple and efficient**: the sample fixed in a SCANDIFORM is placed into a glass vacuum chamber. Then, the mixed mounting resin is added under vacuum using the inlet funnel. Subsequently, the vacuum chamber is re-aerated and the mounting resin soaks deeply into pores and fissures of the sample, making it stable and fixing it for grinding and polishing.

**SCAN-DIA GmbH & Co. KG**

Postfach 30 31
58030 Hagen | Germany

**E-mail** info@scan-dia.com
**Internet** www.scan-dia.com

**Phone** +49 (0) 2331 6 24 69 0
**Fax** +49 (0) 2331 6 24 69 29