## Product Information

### Norian SRS Fast Set Putty
- SRS-003-FSP 3 cc (6 grams), sterile
- SRS-005-FSP 5 cc (9 grams), sterile
- SRS-010-FSP 10 cc (17 grams), sterile
- SRS-015-FSP 15 cc (25 grams), sterile

### Also Available
- Norian SRS (injectable)
  - SRS-003-RMS Rotary Mix, 3 cc, sterile
  - SRS-005-RMS Rotary Mix, 5 cc, sterile
  - SRS-010-RMS Rotary Mix, 10 cc, sterile
  - MXR-US-2000 Norian Rotary Mixer

Please refer to the Norian SRS Technique Guide for detailed product information.

## TECHNIQUE GUIDE

- Calcium Phosphate Bone Void Filler™

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Features

- Easily shaped and molded for implantation into defects positioned at difficult angles.
- Hardens in a warm, wet environment, reducing the need to control moisture at the operative site.
- Isothermal hardening eliminates thermal injury to surrounding soft tissue.
- Fast setting time (3–6 minutes) minimizes length of procedure time.
- Gradually resorbs and is replaced with bone during the healing process.

Indications

NorianSRS Fast Set Putty is indicated only for filling bony voids or gaps that are not intrinsic to the stability of the bone structure. The putty is to be packed into bony voids or gaps of the skeletal system including the extremities and pelvis. These defects may be surgically created or osteo-defects created from traumatic injury to the bone. Fast Set Putty provides a bone void filler that resorbs and is replaced with bone during the healing process.

Contraindications

NorianSRS bone void filler should not be used in the spine and should not be used in the presence of active or suspected infection.

Basic Science

Fast Set Putty is a self-setting calcium phosphate bone void filler which:

- Hardens in vivo to form carbonated apatite, closely resembling the mineral phase of bone;
- Achieves a maximum compressive strength of approximately 30 MPa (4,350 psi) within 24 hours;
- Gradually resorbs and is replaced with bone during the healing process;
- Is biocompatible and isothermic.

Although hydroxyapatite is commonly thought of as the mineral phase of bone, carbonated apatite actually constitutes 60–70% of total dry bone weight. The main distinction between hydroxyapatite and carbonated apatite is the presence of carbonate. While the carbonate content of hydroxyapatite is 0%, the carbonate content of the carbonated apatite contained in bone is 4–6%. Unlike hydroxyapatite, Norian SRS Fast Set Putty has a carbonate content of 5%, which closely resembles the composition of bone. The properties of bone and Fast Set Putty are compared in Table 1.

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Bone</th>
<th>Norian SRS Fast Set Putty</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbonate content</td>
<td>0%</td>
<td>5%</td>
</tr>
<tr>
<td>Compressive strength</td>
<td>1.00 – 1.45</td>
<td>30 MPa (4,350 psi)</td>
</tr>
<tr>
<td>Density (g/cm³)</td>
<td>1.99</td>
<td>1.99</td>
</tr>
<tr>
<td>Porosity (%)</td>
<td>30%</td>
<td>20%</td>
</tr>
</tbody>
</table>

Table 1: Properties of Norian SRS Fast Set Putty™ vs. Bone

Technique

1. **Prepare implant site**
   Using lavage and or suction instruments, remove clots and tissue debris while controlling active bleeding. Prepare the void by compacting the cancellous bone with a curette, elevator or similar instrument. The bone void should be stabilized using temporary or permanent fixation prior to mixing Norian SRS Fast Set Putty.

   **Note:** If bone wax or gelfoam is used, it should be removed prior to implanting Fast Set Putty.

2. **Mix components (45–90 seconds)**
   Transfer tray to sterile field using aseptic technique.

   **Important:** The tray containing product cannot be stored once the outer pouch has been opened.

   When the site is ready for implantation, prepare materials for mixing. Remove the cup from the tray, tap the cup on a hard surface and slowly peel back the lid to expose the powder. Take care not to spill any powder.

   Remove the vial from the tray and pour the liquid onto the powder, ensuring that all liquid is removed from the vial by shaking or tapping the vial against the cup.

   Using the spatula provided, mix the powder and liquid components together for 45–90 seconds, depending on volume. Use a sweeping motion along the sides of the cup to incorporate all powder into the mix. Ensure that the components are fully integrated to produce a homogeneous putty.
Implant and contour material (within 2 minutes)

Immediately apply the Norian SRS Fast Set Putty to the stabilized defect site with the spatula or by hand. Contour the putty manually, using a wet gloved finger or a surgical instrument. Complete all contouring within two minutes of implantation.

Important: If more Fast Set Putty is needed to fill the defect, another kit may be mixed and added during the 2-minute implant period. If the 2-minute implant period has elapsed, wait 6 minutes for the putty to completely harden before adding more material. To increase mechanical bonding between layers, ensure the hardened putty is free of blood.

Allow Fast Set Putty to harden (3–6 minutes)

Release the tourniquet if used, and gently irrigate with warm saline to return the operative site to core body temperature (37°C/98.6°F).

The putty will set within 3–6 minutes at normal body temperature. Once the putty begins to harden, it must be left undisturbed to set properly.

If necessary, place final hardware, ensuring screws are inserted into bone. Do not drill into the filled bone void because this could shatter the implant.

Norian SRS Fast Set Putty fully cures and reaches its ultimate compressive strength in 24 hours.

Discard any unused material
Norian SRS Fast Set Putty is a moldable, biocompatible bone void filler. It should be used in bone defects that have been stabilized using standard AO/ASIF orthopaedic techniques and implants (i.e., external fixation, K-wires, plates, screws, etc.).

It is supplied in two containers: a cup containing sterile powder (calcium phosphate) and a vial containing sterile solution (dilute sodium phosphate). When the contents are mixed together, the resultant putty is suitable for packing into bony voids or gaps of the extremities and pelvis. When fully cured, Fast Set Putty closely resembles the mineral phase of bone and is gradually resorbed and replaced with bone during the healing process.

Norian SRS Fast Set Putty is easily mixed within the sterile field. It is readily molded and shaped to fill the defect, and sets in a moist environment.

Common applications include:
- Distal radius
- Tibial plateau
- Proximal humerus
- Bone cyst void
- Calcaneus
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