



# Technical Data Sheet

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## Prefere 7200

Liquid, low emission amino adhesive for the wood industry

### Use

Prefere 7200 is a liquid, low emission adhesive. The adhesive is designed for a wide range of applications within the wood industry, where low emission levels are required, both in the final product and during the manufacturing operation.

The adhesive is not classified under CLP. Provided that the adhesive system is used according to the instructions in this technical data sheet, it offers the possibility of obtaining end products with very low emissions. Prefere 7200, with the below hardener range, is suitable for a wide range of applications within the wood industry.

|              | Usage    | Reactivity                                                                          | Suitable Application Area |     |             |           |              |
|--------------|----------|-------------------------------------------------------------------------------------|---------------------------|-----|-------------|-----------|--------------|
|              |          |                                                                                     | Flooring                  | SWL | Doors & BoF | Veneering | Foil Bonding |
| Prefere 5361 | Separate |  |                           |     |             |           | ◆            |
| Prefere 7605 | Separate |                                                                                     | ◆                         |     |             |           |              |
| Prefere 7612 | Mix-in   |                                                                                     | ◆                         | ◆   |             | ◆         |              |
| Prefere 7616 | Mix-in   |                                                                                     | ◆                         | ◆   | ◆           | ◆         |              |
| Prefere 7620 | Mix-in   |                                                                                     | ◆                         | ◆   | ◆           | ◆         |              |
| Prefere 7624 | Mix-in   |                                                                                     | ◆                         | ◆   | ◆           | ◆         |              |

The choice of hardener for Prefere 7200 depends on operating conditions such as requirements on glue mix, pot life and reactivity. However, other factors may also affect the choice of hardener eg, the glue ability of the material, environmental requirements and special operating conditions (automatic adhesive/hardener mixer, equipment for separate application, radio frequency heating, etc).

The adhesive system with the above hardeners is developed for bonding operations that require especially good bonding quality and performance, also for materials and wood species that might be difficult to glue, and it is suitable for hot bonding, as well as under radio frequency conditions.

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## Technical Data for the Adhesive

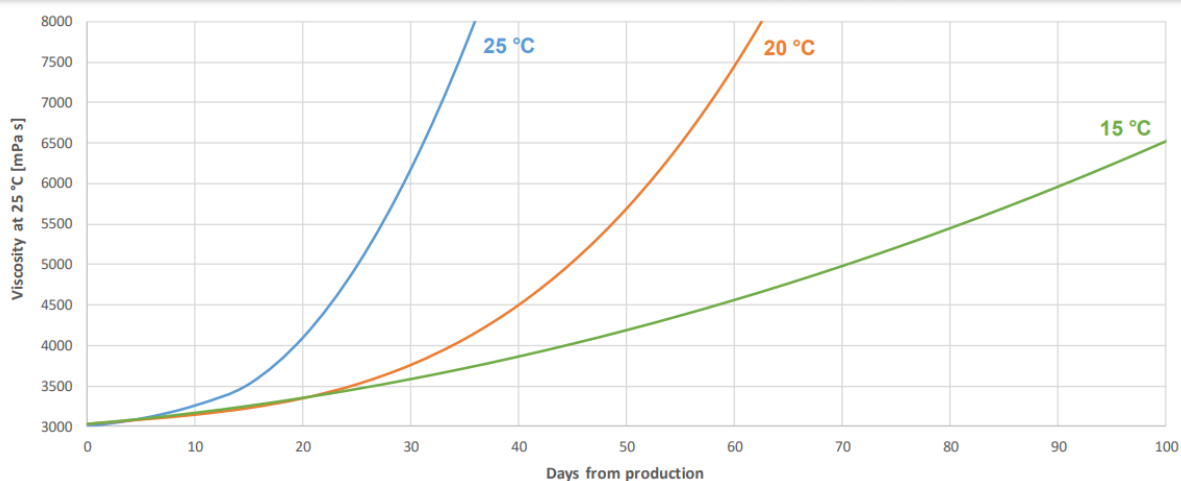
|                                   | <b>Prefere 7200</b>       |
|-----------------------------------|---------------------------|
| <b>Appearance</b>                 | Yellowish, viscous liquid |
| <b>Solids Content (%)</b>         | 71.0 – 73.0               |
| <b>Viscosity at 25°C (mPas) *</b> | 2000 – 6000               |
| <b>pH at 25°C</b>                 | 7.5 – 9.0                 |
| <b>Density at 25°C</b>            | 1.28 – 1.32               |

\* Viscosity is measured by Brookfield, RVT, spindle 4 at 20rpm

## Storage of the Adhesive

The adhesive's viscosity increases during storage and may eventually become so high that the adhesive is no longer usable. The shelf life is shorter, the higher the storage temperature is. It is, therefore, recommended to transport and store the adhesive as cold as possible, preferably below 18°C. See the table below, and Figure 1 for more detailed information.

|                          | <b>Storage stability in weeks at:</b> |             |             |             |
|--------------------------|---------------------------------------|-------------|-------------|-------------|
|                          | <b>15°C</b>                           | <b>20°C</b> | <b>25°C</b> | <b>30°C</b> |
| <b>Storage stability</b> | 14                                    | 8           | 4           | -           |



**Figure 1:** Viscosity development for Prefere 7200 during storage at 15, 20 and 25°C.

Prefere 7200 is not flammable.

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## Technical Data for the Hardeners

### Separate application hardeners

|                                   | <b>Prefere 5361</b> | <b>Prefere 7605</b> |
|-----------------------------------|---------------------|---------------------|
| <b>Appearance</b>                 | Beige liquid        | Pink liquid         |
| <b>Viscosity at 25°C (mPas) *</b> | 600 – 1500          | 100 – 200           |
| <b>pH at 25°C</b>                 | < 0.8               | 0.5 – 0.8           |
| <b>Density at 25°C</b>            | 1.12 – 1.16         | 1.08 – 1.12         |

\* Viscosity is measured by Brookfield, RVT, spindle 4 at 20rpm

### Mix-in hardeners

|                                   | <b>Prefere 7612</b> | <b>Prefere 7616</b> | <b>Prefere 7620</b> | <b>Prefere 7624</b> |
|-----------------------------------|---------------------|---------------------|---------------------|---------------------|
| <b>Appearance</b>                 | White liquid        | White liquid        | White liquid        | White liquid        |
| <b>Viscosity at 25°C (mPas) *</b> | 2000 - 5000         | 2000 - 5000         | 2500 - 5000         | 2000 - 5000         |
| <b>pH at 25°C</b>                 | 2.0 – 2.3           | 2.5 – 2.8           | 2.7 – 3.0           | 2.9 – 3.2           |
| <b>Density at 25°C</b>            | 1.10 – 1.14         | 1.10 – 1.14         | 1.10 – 1.14         | 1.10 – 1.14         |

\* Viscosity is measured by Brookfield, RVT, spindle 4 at 20rpm

## Storage of the Hardeners

The mix-in hardeners Prefere 7612, Prefere 7616, Prefere 7620, Prefere 7624 and the separate application hardener Prefere 5361 may be stored for 3 months in the original containers. The separate application hardener Prefere 7605 may be stored for 2 months in the original containers.

The hardeners must not be allowed to freeze, and must be stored in acid-proof containers, due to the risk of rust formation and discolouration of the hardener.

## Glue Mix Preparation

The recommended glue mixes are given in the table below:

|                     | Glue Mix 1  | Glue Mix 2  | Glue Mix 3  | Glue Mix 4  | Glue Mix 5  | Glue Mix 6  |
|---------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| <b>Prefere 7200</b> | 100 pbw     | 100 pbw     | 100 pbw     | 100 pbw     | 100 pbw     | 100 pbw     |
| <b>Prefere 5361</b> | 10 – 15 pbw |             |             |             |             |             |
| <b>Prefere 7605</b> |             | 10 – 15 pbw |             |             |             |             |
| <b>Prefere 7612</b> |             |             | 10 – 20 pbw |             |             |             |
| <b>Prefere 7616</b> |             |             |             | 10 – 20 pbw |             |             |
| <b>Prefere 7620</b> |             |             |             |             | 10 – 20 pbw |             |
| <b>Prefere 7624</b> |             |             |             |             |             | 10 – 20 pbw |

## Pot Life

Heat is evolved when adhesive and hardener are mixed. The pot lives of Prefere 7200 with different hardener combinations are given in the table below. The values given are for Prefere 7200 less than one week old. With increasing age of Prefere 7200, the pot life will decrease.

|                     | Pot life at 20°C |                 |
|---------------------|------------------|-----------------|
|                     | 100 pbw / 15 pbw | 100 pbw / 20pbw |
| <b>Prefere 7612</b> | 45 mins          | 35 mins         |
| <b>Prefere 7616</b> | 64 mins          | 57 mins         |
| <b>Prefere 7620</b> | 3 hours          | 2 hours         |
| <b>Prefere 7624</b> | 6 hours          | 4 hours         |

## The Wood

The surfaces must be free from oil, fat, dust or other deposits.

Prefere 7200 gives the highest bond strength when the moisture content of the wood is between 3 – 5%. If higher moisture content is used, the bond quality might be reduced, the tendency for bleed-through might be increased and the formaldehyde emission from the final product will be higher.

## Glue Spread

The glue spread rate is dependent on the surface quality of the adherents, the wood species and production process. Normal glue spread for most application will be in the range 80 – 200g/m<sup>2</sup>.

## Assembly Time

Assembly time is the time elapsing between glue application and pressure application. It can be subdivided into open (from glue application to assembly of adherents) and closed assembly time (from assembly to establishing pressure).

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Open assembly time should be kept as short as possible. On the other hand, some closed assembly time is beneficial, especially when bonding dense wood. By varying the assembly time, special effects can be achieved, *eg* reduced wood penetration and improved anchoring of the adhesive system in the wood.

Maximum closed assembly time depends on the hardener used, glue spread rate, temperature, relative humidity and the velocity of air flow (ventilation, draught). Hence, exact figures cannot be given. If a fast hardener is used, the risk of pre-cure must be taken into consideration.

Under all circumstances the adhesive must still be tacky when the pressure is applied. Adhesive being squeezed out of the glue line when the pressure is applied is an indication that the assembly time is not exceeded.

## Pressure

The pressure is determined by the density, surface evenness and thickness tolerance of the adherents, as well as the assembly time. Glue being squeezed out of the glue line when the pressure is applied is an indication of sufficient pressure.

For most applications, and products within the wood industry, the pressure should be in the range 0.2 – 1.2 N/mm<sup>2</sup>, depending on the type of bonding operation and the materials to be bonded.

## Pressing Properties

The pressing times of Prefere 7200 with different hardeners are given in the table below.

| Hardeners (20pbw)   | Pressing time in seconds |      |      |
|---------------------|--------------------------|------|------|
|                     | 70°C                     | 80°C | 90°C |
| <b>Prefere 7612</b> | 100                      | 80   | 75   |
| <b>Prefere 7616</b> | 130                      | 90   | 80   |
| <b>Prefere 7620</b> | 180                      | 120  | 100  |
| <b>Prefere 7624</b> | 480                      | 300  | 180  |

The pressing times (basic setting times) stated refer to glue line temperature only, and allowance must be made for the heat to travel from the press platens. The heat penetration time will vary depending on press temperature and the heat capacity of the press, the heat transfer of the wood material, and the distance to the farthest glue line.

## Cleaning

The mixing and spreading equipment must be cleaned before the glue cures. Cured glue is insoluble and must be scraped off.

Warm water (40 – 60°C) is recommended for cleaning. Before flushing of the equipment is started, the water should be drained of cold water. If glue remainders in a roller spreader are mixed with equal quantities of a 40% (w/w) solution of CB Conditioner, to which 0.5% (w/w) Sodium hydroxide (caustic soda) has been added, and the spreader is kept running until a homogeneous mix is obtained, the cleaning becomes easier. Less water is required and the temperature of the wash water can be lower.

With mixed application systems, the mixing and application equipment must be cleaned at the end of each working day. If the glue mix thickens in the application equipment, the equipment must be immediately emptied and cleaned, because otherwise there is a risk that the glue will cure.

For easier removal of cured glue, it is recommended to cover exposed metal parts with a suitable release agent, or with self-attaching plastic film, prior to gluing. Advice on safe handling of glue remainders and wash water can be found in our Technical Information leaflet No. 2E “Waste handling”.

## Safety Precautions

Reference is made to the Safety Data Sheet for Prefere 7200 and hardeners Prefere 5361, Prefere 7605, Prefere 7612, Prefere 7616, Prefere 7620 and Prefere 7624.

When the adhesive and the hardener are mixed a chemical reaction will start. The pH of the mixture will be in between the values for the adhesive and hardener. The free formaldehyde content for the adhesive will be reduced. The acid/salt concentration of the hardener will be diluted.

When handling the adhesive, the hardener and the glue mix, it is recommended that certain precautions normally taken when handling chemicals is observed. Skin contact with the uncured glue should be avoided, since people with particularly sensitive skin may be affected. It is recommended to wear protective gloves, likewise eye protection where there is a risk of splashes. Hands and forearms should be thoroughly washed with soap and warm water at the end of the working day.

Adequate ventilation of the workshops should be maintained.



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## Caution

TS Resins adhesives and hardeners are generally quite harmless to handle provided that certain precautions normally taken when handling chemicals are observed. The uncured materials must not, for instance, be allowed to come into contact with foodstuffs or food utensils, and measures should be taken to prevent the uncured materials from coming into contact with the skin, since people with particularly sensitive skin may be affected. The wearing of impervious rubber or plastic gloves will normally be necessary; likewise the use of eye protection. The skin should be thoroughly cleansed at the end of each working period by washing with soap and warm water. The use of solvents is to be avoided. Disposable paper – non cloth – towels should be used to dry the skin. Adequate ventilation of the working area is recommended. These precautions are described in greater detail in Material Safety Data sheets for the individual product. These are available on request and should be referred to for fuller information.

*The suggestions given in these notes are based on data gained from experience and tests. However, since operating conditions in the user's plant is beyond our control, we cannot assume responsibility for any risks or liabilities, which may result from the use of our products. The information provided were believed by TS Resins Ltd. to be accurate at the time of preparation, or obtained from sources believed to be generally reliable. TS Resins Ltd. makes no warranty concerning their accuracy, and TS Resins Ltd. will not be liable for claims relating to any party's use of or reliance on information or recommendations contained herein, regardless of whether it is claimed that the information or recommendations are inaccurate, incomplete or otherwise misleading. Further, TS Resins Ltd. makes no warranty concerning any product, except that the product shall conform to contracted specifications.*

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