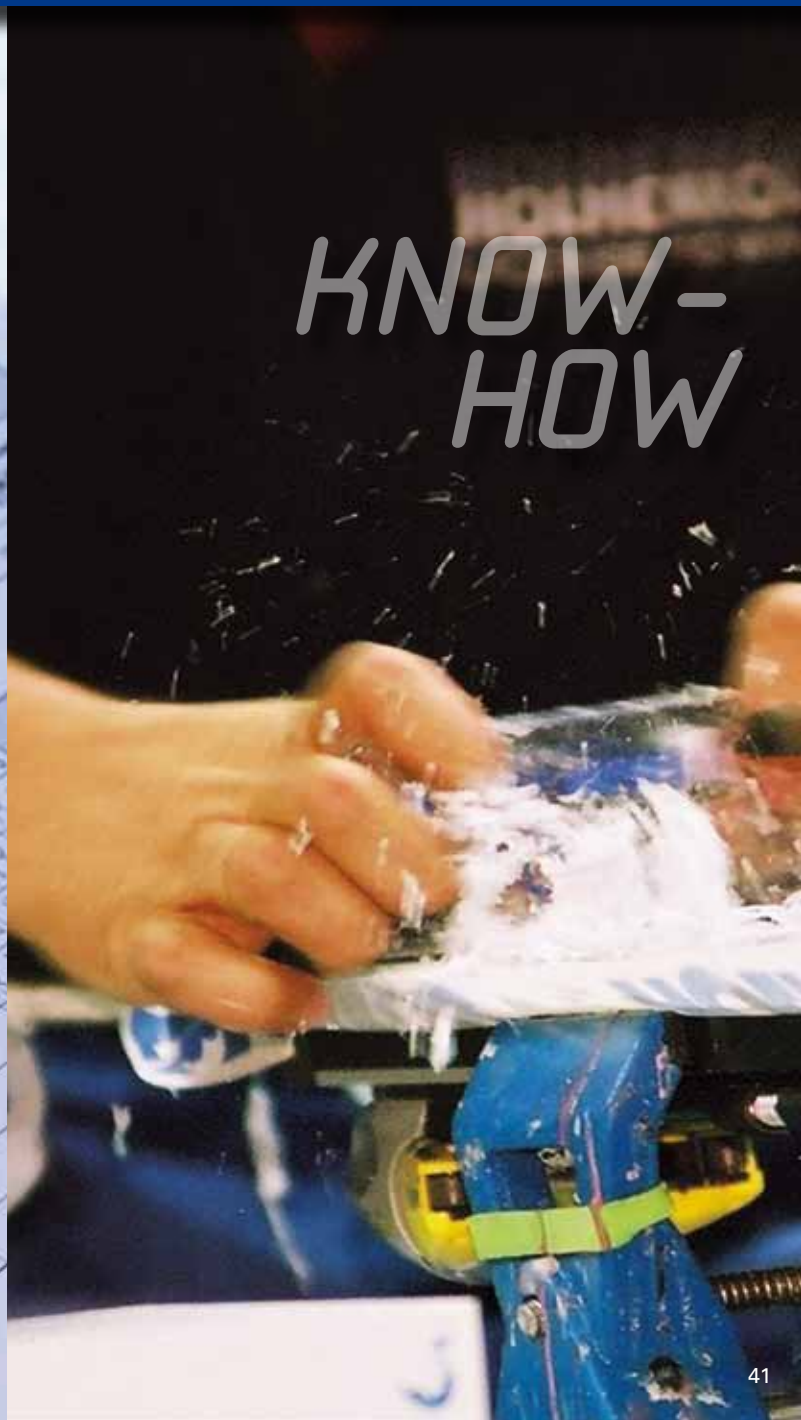

HOLMENKOL
LICENSE TO WIN
Land / Ort
Niederschlag
T (Luft)
Rel LF (%)
T Schnee
Rel LF (Schnee %)
Schneeart
Datum
Uhrzeit
WAXTEST
Ski-Nr
BASEWAX
FINISHWAX
TEST 1 bei
km
Fahrt 1
Fahrt 2
Fahrt 3

KNOW-HOW



BASIC PREPARATION FOR NEW SKIS

HOLMENKOL® LICENSE TO WIN

Before you use new skis for the first time, you should give them some basic preparation. This also goes for freshly sharpened and structured skis.

This first preparation is important as it enables the wax to penetrate deep into the ski base. Due to mechanical structuring of the base, fine hairs are produced and these are removed by this preparation. It also protects the base for subsequent edge tuning.

i **For this application you need the following products:**

SuperProPlus World Cup	Ref. no. 24432	p. 20
BaseEdge File Guide	Ref. no. 24450	p. 23
PadSet	Ref. no. 24495	p. 18
WaxAb – Wax Remover Spray	Ref. no. 24410	p. 18
CareFleece 50	Ref. no. 24492	p. 18
HOLMENKOL® base wax		p. 17
Digital RacingWaxer	Ref. no. 24422	p. 26
Alternativ: SmartWaxer	Ref. no. 20605	p. 26
Optional: WaxFleece	Ref. no. 20620	p. 27
Plastic scraper	Ref. no. 20630	p. 28
ERGO SideWall Planer	Ref. no. 24456	p. 22
SteelEdge WorldCup	Ref. no. 24475	p. 22
CrossFile Mini	Ref. no. 20521	p. 24
RacingFile (L-Mini)	Ref. no. 2052900000	p. 24
Diamond World Cup File medium	Ref. no. 24471	p. 25
Grinding rubber	Ref. no. 20550	p. 25
OvalBrush Steel	Ref. no. 24522	p. 30
Alternativ: SpeedBrush Copper	Ref. no. 20674	p. 33

1

Always ensure the ski / board is firmly clamped into the vise before you begin.

2 When the base is freshly ground, remove fine hair using a scraper (plastic or stainless steel).

3

Use a BaseEdge File Guide and a Racing file to surface grind the ski / board (0.5°). In the front and rear areas, use a BaseEdge FileGuide for a bevelled edge between 1.0° and 1.5° (depending on requirements and skier's performance)..

4

Slightly sand the base using green ski pads. This ensures the wax is better absorbed.

5

Clean the base with cleaner or WaxAb and CareFleece.

6

Wax with base wax (Alphamix Yellow or Betamix Red) and allow to cool.

Tip: To avoid burning the base, use HOLMENKOL® WaxFleece.

-->CONTINUATION

6

Scrape (rather than brush) off the excess wax. This ensures the base is protected from dirt when you tune the side edges.

7

In order to grind the edges precisely, remove any side wall projection using the ERGO SideWall Planer.

8

Clamp a CrossFile Mini into the edge grinder and pregrind to the desired angle. Then continue using the RacingFile (Maxi or Mini).

9

Finish using the DiamondFile.

10

Use the grinding rubber to slightly blunt the extremely sharp edge in the front and rear areas.

11

Use a sharp scraping blade to scrape the slightly dirty base surface.

12

oder:

Use the OvalBrush Steel or the SpeedBrush Bronze to brush off old wax from the structure.

13

Apply base wax again and iron into the base.

This process (waxing, scraping, brushing off) can be repeated several times until the base is sufficiently saturated.

You should check your skis / boards on a regular basis.
If you find any damage, proceed as follows before applying racing preparation:

i **For this application you need the following products:**

Diamond World Cup File coarse	Ref. no. 24472	p. 25
Alternativ: Oxyd mini	Ref. no. 20561	p. 25
EdgeTrick	Ref. no. 24624	p. 23
FX-Strips		p. 19
CrossFile Maxi	Ref. no. 2052000000	p. 24
Stainless steel scraper	Ref. no. 20635	p. 28
PadSet	Ref. no. 24495	p. 18

1

When the edge shows rigidification, pretreat using the DiamondFile Coarse ...

or:

...using the aluminium oxide stone.

Alternatively, you may want to use EdgeTrick PRO Diamond.

2

Fill any damaged areas (scratches / holes) with FX-Strips. To do this, light the FX-Strip and, holding it just above the area to be treated, drip the wax onto it.

3

Once the wax has cooled, remove excess FX-Strip material using the CrossFile…

or:

… a stainless steel scraper.

4

Use green ski pads or sandpaper to smooth the repaired spot.

The preparation for racing is the same as for basic preparation (surface grinding, bevelling, relief-grinding of edges, base waxing, see pages 42 onwards).

For this application you need the following products:

SuperProPlus WorldCup	Ref. no. 24432	p. 20
3 mm plastic scraper	Ref. no. 20630	p. 28
ERGO SideWall Planer	Ref. no. 24456	p. 22
SteelEdge WorldCup	Ref. no. 24475	p. 22
RacingFile (L-Mini)	Ref. no. 20524	p. 24
Diamond World Cup File coarse	Ref. no. 24472	p. 25
Arkansas hard	Ref. no. 20575	p. 25
Grinding rubber	Ref. no. 20550	p. 25
OvalBrush Steel	Ref. no. 24522	p. 30
HOLMENKOL® base wax		p. 17
HOLMENKOL® race wax		p. 14 /15
Digital RacingWaxer	Ref. no. 24422	p. 26
Alternativ: SmartWaxer	Ref. no. 20605	p. 26

1

Use the scraper to remove the old wax, applying gentle pressure.

2

Firmly clamp the ski / board into the vise ready to begin preparation.

3

Prior to each edge grinding operation, the side wall should be reduced minimally (if necessary) with the ERGO SideWall planer. The unit setting should be checked carefully prior to use.

4

Clamp the RacingFile into the tool (e.g., SteelEdge WorldCup) and grind the side edges to the required relief angle.

5

Use the DiamondFile Coarse to polish / deburr the side edges and smooth using the Arkansas true hard stone.

Tip: The better the edge is polished, the longer it remains sharp.

6

Use the grinding rubber to slightly blunt the extremely sharp edges in the front and rear areas.

7

Use the OvalBrush Steel to brush off wax residues from the structure.

-->CONTINUATION

with HOLMENKOL® base wax (Hydrocarbon) and RacingMix:

8

Cleaning the ski base:
Apply base wax (e.g., Alphamix Yellow, Betamix Red…) …

…iron on…

…scrape…

…brush off.

9

Apply your choice of race wax.
Harder waxes with a higher melting point should be worked in longer to increase abrasion resistance (adherence).

10

Clean the side wall and edge using a plastic scraper

11

Allow the ski / board to cool for at least 1 to 2 hours. Then scrape the wax from tip to tail using a sharp scraping blade and applying gentle pressure.

12

Use the OvalBrush Steel to brush off wax residues from the structure.

→ **Tip:** In order to get the surface as smooth as possible, repeat this scraping and brushing process once or twice.

→ **Tip:** Apply paste wax to the side (to ensure snow does not stick to the side wall) and polish using CareFleece.

with SPEEDBASE HYBRID:

HOLMENKOL® speed products are applied following basic preparation (base hydrocarbon wax).

For this application you need the following products:

SpeedBase Hybrid WET / MID / COLD / EXTREME COLD		p. 5
Digital RacingWaxer 230V	Ref. no. 24422	p. 26
Alternativ: SmartWaxer	Ref. no. 20605	p. 26
3 mm plastic scraper	Ref. no. 20630	p. 28
OvalBrush Steel	Ref. no. 24522	p. 30
OvalBrush Steel MicroFinish	Ref. no. 24523	p. 30
CareFleece 50	Ref. no. 24492	p. 18

1

Evenly apply SpeedBase Hybrid to the ski ...

2

Fix SpeedBase Hybrid with appropriate iron temperature and iron in (120°-140°).

3

Clean edge with plastic scraper or klister scraper and allow SpeedBase Hybrid to cool properly (approx. 1 hour) …

4

… and scrape off residual wax with the plastic scraper
.

5

Depending on structure and snow condition brush with OvalBrush Steel ...

6

... OvalBrush Nylon ...

7

... OvalBrush horsehair. Finally finish with OvalBrush Steel MicroFinish.

8

Clean with CareFleece.

with SpeedPowder Hybrid:

HOLMENKOL® Speed products are applied after basic preparation (Base wax Hydrocarbon; race wax, RacingMix, SpeedBase Hybrid).

For this application you need the following products:

SpeedPowder Hybrid WET / MID / COLD		p. 6
FinishKork	Ref. no. 20645	p. 28
Alternatively: Digital RacingWaxer	Ref. no. 24422	p. 26
Alternatively: SmartWaxer	Ref. no. 20605	p. 26
Alternatively: SpeedBrush Fleece	Ref. no. 20688	p. 33
OvalBrush Horsehair	Ref. no. 24533	p. 30
OvalBrush Steel MicroFinish	Ref. no. 24523	p. 30
CareFleece 50	Ref. no. 24492	p. 18

1

Evenly apply SpeedPowder Hybrid.

2

Work in using FinishCork (cork or felt side).

Alternatively:

Quickly fix SpeedPowder Hybrid using the wax iron…

2

… and iron on…

Note: Take care to apply sufficient powder coat. Draw the wax iron across the ski quickly to avoid burning the base!

SpeedPowder may then be worked in using the SpeedBrush Fleece with max. 1200 rpm, applying gentle pressure.

3

Brush using the OvalBrush Horsehair.

4

In order to reveal the ski microstructure, brush the base 2 – 3 times in running direction using the OvalBrush Steel MicroFinish.

5

Remove any dust residue using CareFleece.

with SpeedBlock:

For this application you need the following products:

SpeedBlock WET / MID / COLD		p. 10
FinishKork	Ref. no. 20645	p. 28
OvalBrush Horsehair	Ref. no. 24533	p. 30
OvalBrush Steel MicroFinish	Ref. no. 24523	p. 30
CareFleece 50	Ref. no. 24492	p. 18

1 

Rub in SpeedBlock, applying gentle pressure.

2 

Work in using FinishCork (cork or felt side).

3 

Brush using the OvalBrush Horsehair.

4 

In order to reveal the ski microstructure, brush the base 2 – 3 times in running direction using the OvalBrush Steel MicroFinish.

5 

Remove any dust residue using CareFleece.

with SpeedPaste Racing:

For this application you need the following products:

SpeedPaste Racing	Ref. no. 24370	S. 9
FinishKork	Ref. no. 20645	S. 28
OvalBrush Horsehair	Ref. no. 24533	S. 30
OvalBrush Steel MicroFinish	Ref. no. 24523	S. 30
CareFleece 50	Ref. no. 24492	S. 18

1 

Evenly apply a thin layer of SpeedPaste Racing with a sponge and leave to dry for a few minutes.

2 

Work in using FinishCork (cork or felt side).

3 

Brush using the OvalBrush Horsehair.

4 

In order to reveal the ski microstructure, brush the base 2 – 3 times in running direction using the OvalBrush Steel MicroFinish.

5 

Remove any dust residue using CareFleece.

with SpeedFinish:

For this application you need the following products:

SpeedFinish WET / MID / COLD		p. 8
CareFleece 50	Ref. no. 24492	p. 18
Alternativ: SpeedBrush Fleece	Ref. no. 20688	p. 33
OvalBrush Horsehair	Ref. no. 24533	p. 30
OvalBrush Steel MicroFinish	Ref. no. 24523	p. 30

1

Evenly spray SpeedFinish onto the ski from a distance of around 20 cm.

2

Work in while damp using CareFleece.
Alternatively:
Work in using the SpeedBrush Fleece at a maximum speed of 1200 rpm, applying gentle pressure.

3

Brush using the OvalBrush Horsehair.

4

In order to reveal the ski microstructure, brush the base 2 – 3 times in running direction using the OvalBrush Steel MicroFinish.

5

Remove any dust residue using CareFleece.

When using fluorinated finish products, wax absorption of the base may be impaired. nano-CFC Fluor cleaner dissolves fluorine residue without harming the paraffin basis.

For this application you need the following products:

nano-CFC Fluor Cleaner	Ref. no. 24419	S. 18
CareFleece	Ref. no. 24490	S. 18
Alternatively: CareFleece 50	Ref. no. 24492	S. 18
BaseBrush Steel MicroFinish	Ref. no. 24503	S. 31

1

Soak FibreFleece or CareFleece with nano-CFC Fluor Cleaner and thoroughly rub on the ski surface.

2

Then, while the ski is still wet, quickly brush it off with a clean BaseBrush Steel MicroFinish. Brush in running direction.

3

Remove remaining residue using CareFleece.

Tip: Where racing wax or speed waxes are ironed several times into a ski, it can also be be beneficial to clean the ski prior to the racing preparation. The usually results in higher speed and a better running feel.

After this race is before the next one

For this application you need the following products:

OvalBrush Horsehair	Ref. no. 24533	p. 30
Digital RacingWaxer	Ref. no. 24422	p. 26
Alternativ: SmartWaxer	Ref. no. 20605	p. 26
HOLMENKOL® Base wax		p. 17

1

2

3

Note:
After using the ski / board (race / training), brush off the base and apply base wax (do not scrape).

Image source: Fischer

If you want to properly prepare your skis, you need to know all about snow!

It is no surprise that ski waxing used to be considered almost a black art, comparable with the secrets of medieval alchemists: Snow is infinitely variable, just like nature itself. Its consistency depends on a range of factors like temperature, air humidity, age, and crystalline structure. Advanced ski wax today makes it easy even for beginners to make the right choice, always provided that he or she gets a true picture of the condition of snow and potential changes during the day.

Temperature

HOLMENKOL® was the world's first wax manufacturer to take into account air temperature, snow temperature, type and structure of snow as well as snow and air humidity when developing glide wax. The application temperature of HOLMENKOL® glide wax refers to the snow temperature. Due to its higher thermal capacity, the temperature of snow changes much more slowly than that of air, which means that it is more stable even under extreme climatic conditions (e.g., foehn winds).

Please note that air and snow temperatures may differ strongly.

Snow structure and humidity

The structure of the snow gives important pointers for selecting the best wax. Snow granularity and snow moisture both have an impact on the friction and suction of the base. HOLMENKOL® differentiates between fresh snow, fine- / coarse-grained, old snow and artificial snow. These snow types can be dry, damp or wet. Each of these combinations has an influence on wax selection. For instance, under certain conditions, snow can be very damp, but made up of hard, sharp crystals. For this type of snow, a wax is needed which is highly resistant to abrasion, as well as highly water repellent.

HOLMENKOL® acknowledged the importance of snow consistency to wax development by introducing hybrid technology.

This is a simplified description of four basic snow types:

Fresh snow

Crystalline, unaltered snowflakes with delicate crystals. These snowflakes are harder when it is cold and softer when temperatures are milder. The delicate crystals are easily pressed when gliding and produce a friction and suction effect which can be reduced using an appropriate wax formula and suitable base structure.

Fine-grained snow (old snow)

This has already undergone one or more transformation processes due to temperature changes, which have caused the outer crystal tips to melt or tear off so that a granular structure is produced. This kind of snow has a lower suction effect but greater friction effect than fresh snow. Depending on the temperature, the snow can be damp and soggy or dry if it is cold and windy.

Coarse-grained snow (old snow)

This type of snow has lost its original shape as the result of several freezing and melting processes and is deformed into a snow grain, that is, it has become metamorphous. Most frequent grain sizes range from 1 to 3 mm.
The best known coarse-grain snow types are firn and snow crust.

Artificial snow

The abrasive character of this kind of snow creates a challenge for waxing staff. Due to its high density and inhomogeneous shape, this snow is very dull and requires a wax with very high abrasion resistance. A number of transformation processes cause the snow surface to change to crystalline shapes, which enhances the gliding properties and means a softer wax can be used. Despite its unwelcome properties, this is the most common snow type in international competitions.

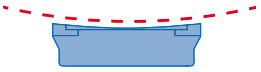
Edge tuning consists of the following worksteps:

1. Inspecting the running surface
2. Tuning the edge lower side (running surface)
3. Tuning the side edge
4. Finishing the edge
5. Repairing the edge

1. Inspecting the running surface

The running surfaces should be checked time and again (using a straightedge). Their appearance may be as follows:

1.1 Concave running surface



The base is hollow towards the inside. The edges are in contact with the ground, the ski / board does not turn easily and tends to break out.

1. 2 Convex running surface

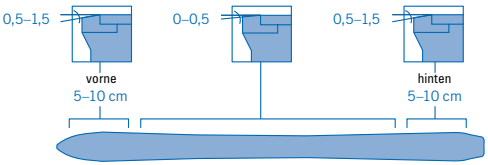
The base is cambered towards the outside. The edges are not fully in contact with the ground and the ski / board is hard to control.

1. 3 Straight running surface

The running surface forms a plane from one edge to the other. The ski / board base and edge are fully in contact with the ground and can be easily controlled and turned provided the edges are properly tuned. **If the ski / board is not straight, we recommend that you have it ground by a qualified ski service.**

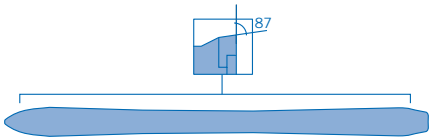
2. Tuning the edge lower side (= bevelled edge)

Ski / board edges should be ground to create a bevelled edge at the tip and tail. This helps significantly in improving turnability. (24450 Base Edge File Guide)



3. Tuning the side edge (= relief)

The side edges are precisely relief-ground using edge grinders. The angle may differ depending on the discipline (e.g., downhill / Super G / giant slalom: 88° - 87°, special slalom 88° - 86°). **In order to precisely grind the side edge, use professional edge grinders (e.g., SteelEdge WorldCup or CarveEdge).**



4. Finishing the edge

Freshly ground and extremely sharp edges on the ski / board tail and in the tip area impair turnability of the ski / board and easily lead to a loss of control. Therefore edges are slightly blunted in the tail and tip areas over a length of 5 to 15 cm (using a grinding rubber). The edge grip remains, yet the ski / board is easy to turn. Edges on the tail and tip ends of the ski / board which do not affect the handling characteristics of the ski or board (those parts of the edge that are not in contact with the slope when the ski is in a straight position) should be rounded.

5. Repairing the edge

Stones on the slope may cause the edge to harden as the contact between edge and stone produces very high temperatures for a short time. Thus, the edge surface is transformed and becomes more dense than the surrounding material. Conventional files barely remove these spots, and this results in imprecise work. Rigidification can only be effectively removed using a DiamondFile blue or an aluminium oxide stone. Rework using a DiamondFile green or red.

Advanced ski / board coatings must comply with various requirements:

They should be elastic yet resist maximum loads. Therefore today it is mainly sintered bases which are used for racing. Sintered bases can be produced using various additives, and each type offers special benefits to match the particular conditions.

Transparent sintered base

This base offers maximum tenacity (without affecting wax absorption capacity).

Graphite base

Graphite protects the base from dirt thanks to its antistatic properties. Good thermal conductivity gives good gliding properties, particularly on wet snow.

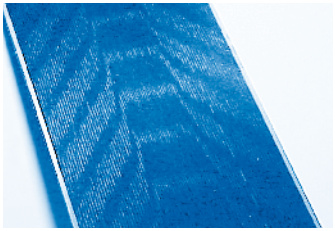
Multi-sintered base

(Different molecular weights of the various components.) Multi-sintered bases have outstanding all-round properties (i.e., they can be used for cross-country skis, downhill skis and snowboards) as they give good gliding properties at all temperature ranges.

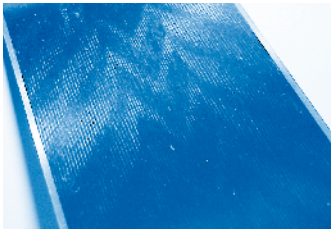
The base structure (contact surface between ski / board and snow surface) impacts the gliding properties of the ski. During gliding, the snow crystals produce friction and the water contained in the snow leads to suction.

With special base structures, these effects can be reduced or eliminated completely. Base structures can be produced using grinding stones or belts and are are offered by qualified sportswear outlets.

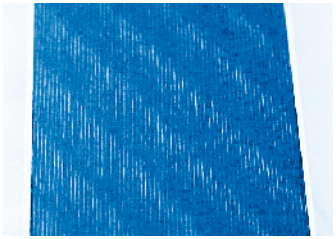
Examples of base structures (Reichmann, Wintersteiger, Montana)



Linear structure



"M"-structure



Offset cross structure

Generel tip:
Cold snow / new snow: fine structure
Old snow / artificial snow / damp snow: medium structure
Wet / coarse snow: rough structure

SAFETY MEASURES DURING WAXING

For all HOLMENKOL® base, race and speed waxes, information on the processing temperature is included on the packaging. As with any work in the workshop, there are some safety measures and rules which should be observed:

- Ensure the workshop is well-ventilated.
- Do not expose wax to naked flames or equipment with revealed heating wires.
- Do not smoke whilst working.
- Only use special wax irons.
- Do not exceed the specified wax temperature. (Avoid smoke forming.)
- Race waxes should be ironed at between 115° C and 140° C, SpeedPowder at between 150° C and 170° C. Higher temperatures are not needed.

HOLMENKOL® SpeedPowder is **NON** toxic and **DOES NOT** harm the environment. At temperatures above 165° C, however, toxic compounds may be produced. Therefore avoid naked flames, materials that are glowing hot or equipment with revealed heating wires during work. When working in and brushing off waxes, particulate matter may be produced. Ensure sufficient ventilation during handling and use a mask or other respiratory protection if possible, especially when brushing off.

- When using spray products, make sure the workshop is sufficiently ventilated. Do not inhale the spray fog.
- When using base cleaners, make sure the workshop is sufficiently ventilated. Never directly inhale vapours.