

SCHÄFER

METALLURGIE GmbH

Catalogue Heavy Metal



Application of products for the treatment of:

- copper, bronze, brass
- zinc alloys

Application range:

continuous casting

pressure die-, gravity die-, sand- and fincasting



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COMPANY PROFILE

The company SCHÄFER Metallurgie GmbH was founded in 1919 and produces foundry auxiliary materials for the light and heavy metal sector.

Our products are used in non-ferrous-foundries all over the world. They optimize the metallurgy of the metal melts, enable the production of high quality casting parts by improving the metal treatment process as well as maintain the functionality and lifespan of the furnaces.

We intend to facilitate the work of the foundry men together with our world-wide representations by superior products and top service.



Our Strengths:

- experience of more than 90 years in the foundry market
- customized, unique service
- research and development: product innovations and constant improvement of the existing product range
- development of special products to solve customer-specific problems
- certification according to ISO 9001 and 14001

We are specialized in:

- removal of metallurgical impurities
- reduction of the share of metal in the dross
- modification with sodium and strontium
- grain refinement
- refining of aluminium
- coatings for the gravity die casting
- special products according to your company's requirements



PERFORMANCE ENSURED BY OUR PRODUCTS



We are
ISO 9001 and ISO 14001 certified.
That means:

We work with a
management system,
that is aimed at:

optimising the
communication
structures

maintaining and
increasing the
customers'
satisfaction

optimising all
kinds of
processes

keeping standards
concerning our
products and
services

doing research &
development

continuous improvement
of our products and services

assuring and increasing
the quality

meeting the increasing
demands of our customers

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PROBAT-FLUSS EXTRA

Cleaning, covering and melting preparation
for heavy metals

- 01 **Notes on Technology** Copper and its alloys tend in molten state to a high oxidation and absorption of gas. This leads to solidly ceramic inclusions as well as pores or shrinkage holes. Adherences, which are difficult to remove, sediment on the furnace walls and high-metal slag is formed on the bath surface. Only the application of highly active refining fluxes enables to remove the oxides from the melt and to reduce the share of metal in the slag.
- 02 **Application Range** Universally applicable melting preparation for cleaning, covering and melting of copper alloys, particularly bronze, brass, red brass and so on.
- 03 **Quality Characteristics** **PROBAT-FLUSS EXTRA**
- low-metal dross
 - neutral towards refractory materials
 - low melting point and, hence, hermetic cover of the melt
 - highly environmental-friendly compared to charcoal and charcoal-containing products
 - improvement of the material properties
 - degassing effect
- 04 **Addition Rate** 0.05 % - 0.2 % of the used material, depending on the degree of impurity.
- 05 **Product Application** The material can already be added during the melting process so that a hermetic cover can be formed at rising bath surface.
- After the melt-down, however, before the slag becomes thin fluid, add additional **PROBAT-FLUSS EXTRA**. The material is to be stirred thoroughly into the dross and removed immediately before casting.
- 06 **Typical Properties** Appearance: red powder
Odour: odourless
Reaction temperature: ex approximately 800°C
- 07 **Packaging** 25-kg-paper bags, 3-fold with plastics lining.
- 08 **Storage and Shelf Life** Store in a cool place (below 32°C/90°F); keep container dry and tightly closed. The shelf life is at least 6 months if properly stored.

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PROBAT-FLUSS EXTRA NS

Cleaning, covering and melting preparation
for Cu-containing alloys

- 01 **Notes on Technology** Copper and its alloys tend in molten state to a high oxidation and absorption of gas. This leads to solidly ceramic inclusions as well as pores or shrinkage holes. Adherences, which are difficult to remove, sediment on the furnace walls and high-metal slag is formed on the bath surface. Only the application of highly active refining fluxes enables to remove the oxides from the melt and to reduce the share of metal in the slag.
- 02 **Application Range** Universally applicable melting preparation for cleaning, covering and melting of high concentrated copper alloys, particularly red brass, nickel silver, cupronickel and brass.
- 03 **Quality Characteristics** **PROBAT-FLUSS EXTRA NS**
- low-metal dross
 - reduces incrustations
 - low melting point and, hence, hermetic cover of the melt
 - highly environmental-friendly compared to charcoal and charcoal-containing products
 - improvement of the material properties
- 04 **Addition Rate** 0.05 % - 0.2 % of the used material, depending on the degree of impurity.
- 05 **Product Application** Use only dry material and tools. A partial quantity can be already added during the melting process so that a hermetic cover can be formed at rising bath surface.
- After the melt down, however, before the slag becomes thin fluid, add additional **PROBAT-FLUSS EXTRA NS**.
- The material is to be stirred thoroughly into the slag and removed immediately before pouring.
- The addition rate depends on the charge material's degree of impurity and on refractory lining. **PROBAT-FLUSS EXTRA NS** is basic.
- 06 **Typical Properties** Appearance: light grey powder
Odour: odourless
Reaction temperature: ex approximately 800°C
- 07 **Packaging** 20 kg paper bags, 3-fold with plastics lining.
- 08 **Storage and Shelf Life** Keep container dry and tightly closed. If stored properly the shelf life is at least 6 months.

PROBAT-FLUSS EXTRA SE

Desulphurization preparation for copper alloys

- 01 **Notes on Technology** Copper and its alloys tend in molten state to a high oxidation and absorption of gas. This leads to solidly ceramic inclusions as well as pores or shrinkage holes. Adherences, which are difficult to remove, sediment on the furnace walls and high-metal slag is formed on the bath surface. Only the application of highly active refining fluxes enables to remove the oxides from the melt and to reduce the share of metal in the slag. Sulphur as an interfering element also can lead to hard inclusions.
- 02 **Application Range** Applicable for all copper alloys to reduce the sulphur content, particularly for sulphuric scrap.
- 03 **Quality Characteristics** **PROBAT-FLUSS EXTRA SE**
- reduction of the sulphur content
 - cleaning of the melt
 - improvement of the material properties
- 04 **Addition Rate** 0.05 % - 0.2 % of the used material, depending on the degree of impurity.
- 05 **Product Application** Use only dry material and tools. A partial quantity is melt with the feedstock. After the melt down, additional material can be added and stirred into the melt with a tool, if required. In the event of high sulphur content, the melt can be desulphurized repeatedly by adding **PROBAT-FLUSS EXTRA SE** into the pouring ladle or the launder.
- 06 **Typical Properties**
- | | |
|-----------------------|------------------------|
| Appearance: | black powder |
| Odour: | odourless |
| Reaction temperature: | ex approximately 800°C |
- 07 **Packaging** 25 kg paper backs, 3-fold with plastics-lining.
- 08 **Storage and Shelf Life** Keep container dry and tightly closed. If stored properly the shelf life is at least 6 months.



PROBAT-FLUSS EXTRA CARBON N

Covering preparation

for copper and copper alloys (carbon carrier)

- 01 **Notes on Technology** Copper and its alloys tend in molten state to a high oxidation and absorption of gas. This leads to solidly ceramic inclusions as well as pores or shrinkage holes. Adherences, which are difficult to remove, sediment on the furnace walls and high-metal slag is formed on the bath surface. To avoid oxygen feed an effective covering of the melt, supported by reducing conditions, has proved to be successful.
- 02 **Application Range** **PROBAT-FLUSS EXTRA CARBON N** is suitable for the covering of copper and copper alloy melts. A reducing atmosphere is obtained and thus, the melt is prevented from oxidizing at simultaneous deoxidizing effect.
- 03 **Quality Characteristics** **PROBAT-FLUSS EXTRA CARBON N**
- consists of approximately 90 % carbon
 - no humidity
 - low content of ash
 - uniform grain size (1-5 mm)
 - deoxidizing portions
 - lower sulphur content than in commercial charcoal (S < 0.15 %)
 - has a slightly higher flash point than **PROBAT-FLUSS EXTRA CARBON S**
- 04 **Addition Rate** The surface of the melt should be covered with an approximately 2 cm thick layer of **PROBAT-FLUSS EXTRA CARBON N**.
- 05 **Product Application** **PROBAT-FLUSS EXTRA CARBON N** is put into the furnace together with the used material during the melting process. Thus, an oxidation of the metal is prevented and the deoxidizing effect of the oxides is diminished. If the alloy produces a lot of slag, incrustations are prevented.
- After the melting process, add **PROBAT-FLUSS EXTRA CARBON N** until a close cover is obtained. Due to the low burn out, a reducing effect is obtained and the oxidation of the melt prevented while a deoxidizing effect is obtained by deoxidizing elements.
- By brass or nickel silver alloys the melt and slag must be treated with **PROBAT-FLUSS EXTRA** or **PROBAT-FLUSS EXTRA NS**.
- 06 **Typical Properties** Appearance: black-grey, granular
Odour: odourless
Reaction temperature: ex approximately 700°C
- 07 **Packaging** 25 kg paper bags, 2-fold.
- 08 **Storage and Shelf Life** Keep container dry and tightly closed. If stored properly the shelf life is at least 6 months.



PROBAT-FLUSS EXTRA CARBON S

Covering preparation

for copper and copper alloys (carbon carrier)

- 01 **Notes on Technology** Copper and its alloys tend in molten state to a high oxidation and absorption of gas. This leads to solidly ceramic inclusions as well as pores or shrinkage holes. Adherences, which are difficult to remove, sediment on the furnace walls and high-metal slag is formed on the bath surface. To avoid oxygen feed an effective covering of the melt, supported by reducing conditions, has proved to be successful.
- 02 **Application Range** **PROBAT-FLUSS EXTRA CARBON S** is suitable for the covering of copper and copper alloy melts, particularly for brass. A reducing atmosphere is obtained and thus, the melt is prevented from oxidizing at simultaneous deoxidizing effect.
- 03 **Quality Characteristics** **PROBAT-FLUSS EXTRA CARBON S**
- consists of approximately 90 % carbon
 - no humidity
 - low content of ash
 - uniform grain size (1-5 mm)
 - deoxidizing portions
 - lower sulphur content than in commercial charcoal (S < 0.05 %)
 - has a slightly lower flash point than **PROBAT-FLUSS EXTRA CARBON N**
- 04 **Addition Rate** The surface of the melt should be covered with an approximately 2 cm thick layer of **PROBAT-FLUSS EXTRA CARBON S**.
- 05 **Product Application** **PROBAT-FLUSS EXTRA CARBON S** is put into the furnace together with the used material during the melting process. Thus, an oxidation of the metal is prevented and the deoxidizing effect of the oxides is diminished. If the alloy produces a lot of slag, incrustations are prevented.
- After the melting process, add **PROBAT-FLUSS EXTRA CARBON S** until a close cover is obtained. Due to the low burn out, a reducing effect is obtained and the oxidation of the melt prevented while a deoxidizing effect is obtained by deoxidizing elements.
- By brass or nickel silver alloys the melt and slag must be treated with **PROBAT-FLUSS EXTRA** or **PROBAT-FLUSS EXTRA NS**.
- 06 **Typical Properties** Appearance: black-grey, granular
Odour: odourless
Reaction temperature: ex approximately 700°C
- 07 **Packaging** 25 kg paper bags, 2-fold.
- 08 **Storage and Shelf Life** Keep container dry and tightly closed. If stored properly the shelf life is at least 6 months.



PROBAT-FLUSS REDOX

Highly efficient refining flux

for all copper alloys; particularly suitable for the treatment of copper alloys with heavily oxidizing alloy elements (e. g. aluminium bronze)

- 01 **Notes on Technology** Cast aluminium bronzes and cast multi-component aluminium bronzes have the tendency to a high oxidation and gas absorption in the liquid state. This leads to solid ceramic inclusions and pores or shrinkage holes. Adherences, which are difficult to remove, deposit on the furnace walls. Furthermore, a metal-rich, heavy slag is formed on the bath surface. Only the use of highly active refining fluxes makes it possible to remove the oxides from the melt and to reduce the metal portion in the slag.
- 02 **Application Range** **PROBAT-FLUSS REDOX** is a highly effective covering and cleansing preparation for all copper alloys, e. g. cast multi-component aluminium bronzes according to DIN 1714 and Al-containing alloys.
- 03 **Quality Characteristics** **PROBAT-FLUSS REDOX**
- removes oxides from the metal melt
 - reduces the gas absorption
 - produces a low-metal slag
 - improves the technological and mechanical properties
 - improves the flowability and casting behaviour
 - minimizes the environmental impact
- 04 **Addition Rate** 0.05 % - 0.2% depending on the degree of impurity and the used material.
- 05 **Product Application** Apply **PROBAT-FLUSS REDOX** onto the metal heel and add the used material onto it. After the melting process, the slag can be additionally treated with the refining flux.
- 06 **Typical Properties**
- | | |
|-----------------------|------------------------|
| Appearance: | white powder |
| Odour: | odourless |
| Reaction temperature: | ex approximately 860°C |
- 07 **Packaging** 25 kg paper bags, 3-fold with plastics lining.
- 08 **Storage and Shelf Life** Store in a cool place (below 32°C/90°F); keep container dry and tightly closed. The shelf life is at least 6 months if properly stored.



FLUXIT 150 WE

Cleansing and covering preparation
for brass alloys in continuous casting

- 01 **Notes on Technology** Copper and its alloys tend in molten state to a high oxidation and absorption of gas. During continuous casting, this leads to solidly ceramic inclusions. Partially alloy elements are burnt, e. g. zinc. Only the application of highly active refining fluxes enables to protect from oxides and to reduce the application of covering preparations enables the share of metal in the slag. Additionally covering with liquid fluxes supports the sliding properties of the gravity die.
- 02 **Application Range** **FLUXIT 150 WE** is suitable for all brass alloys with a copper content of up to 70 %, if the salt is liquid even more.
- 03 **Quality Characteristics** **FLUXIT 150 WE**
- protects the metal surfaces in the vertical continuous casting from oxides
 - produces smooth bolt respectively ingot surfaces
 - reacts completely fumeless and causes no air pollution
- (Not suitable for injection nozzles made of graphite or SiC; we propose injection nozzles made of chrome graphite or chrome alloy steel).
- 04 **Addition Rate** Care ist o be taken that a complete protective cover layer is always available.
- 05 **Product Application** **FLUXIT 150 WE** is added after the mould has been given an initial casting stream. The casting speed may exceed 200 mm/minute.
- For mould coating we recommend our fully colloidal graphite coating **CILLOLIN-CU 130**. This product is of excellent coating adherence and supports the sliding properties of bars in the continuous casting.
- 06 **Typical Properties** Appearance: white powder
Odour: odourless
- 07 **Packaging** 25 kg paper bags, 3-fold with plastics lining.
- 08 **Storage and Shelf Life** Store in a cool place (below 32°C/90°F); keep container dry and tightly closed. The shelf life is at least 6 months if properly stored. Thickenings can be loosened by slightly knocking on the bag.



ALUFIX

Aluminium remover, cleansing and covering preparation for copper alloys

- 01 **Notes on Technology** Aluminium is only welcomed in a few copper alloys as a part of the alloy. The maximum tolerance limit for most brass alloys and all copper-tin alloys is 0.01 %. Also this maximum limit should, if possible, not be reached. Aluminium is entrained into copper alloys very often due to the aluminium containing recycled scrap of special alloys. An indication for this is the formation of suddenly occurring single clear spots on the oxidizing surface which otherwise solidifies full of fissures. The fewer such clear spots are present, the less is the amount of aluminium content. The mechanical properties are reduced essentially by aluminium and the entrapped oxide skins will lead to porosity.
- 02 **Application Range** **ALU FIX** is suitable for all copper and copper alloys to reduce the share of aluminium.
- 03 **Quality Characteristics** **ALU FIX**
- complete removal of aluminium out of the melt by a simultaneously cleaning and covering of the melt
 - has also proved to be very effective for alloys, which don't contain any aluminium, as cleansing preparation
 - improvement of the mechanical properties
- 04 **Addition Rate** It is difficult to determine in advance the correct dosage of **ALU FIX**, because of the great differences of aluminium content. Generally speaking 0.2-0.5 % are sufficient to remove even traces of aluminium from the melt. If, however, aluminium is supposed to be introduced already at the start of charging, then 0.05-0.2 % **ALU FIX** should be added to the feedstock.
- 05 **Product Application** After completion of the melting process a test block is taken to verify whether there is still aluminium in the melt. If aluminium is still contained an additional quantity of 0.5 % of **ALU FIX** is to be stirred thoroughly into the melt. In the event of aluminium containing scrap, the product is to be melted together with the raw material. This treatment should be carried out for a period of 10-15 minutes. Then the aluminium test is to be repeated. If the product is used for cleaning aluminium-free copper alloys, then the dosage should be 1-2 % of **ALU FIX** which should be fed to the charge in 2-3 partial quantities or eventually by the use of an immersion bell. Care is to be taken that the product is thoroughly stirred into the melt.
- The material is particularly suitable for rotary furnaces, whereby the addition rate is depending on the aluminium content as already described. One half of the material is to be added during the charging. The second half is to be added onto the melt surface after the maximum temperature is reached and then it is to be thoroughly stirred with the slag.
- 06 **Typical Properties** Appearance: red powder
Odour: odourless
- 07 **Packaging** 25 kg paper bags, 3-fold with plastics lining.
- 08 **Storage and Shelf Life** Store in a cool place (below 32°C/90°F); keep container dry and tightly closed. The shelf life is at least 6 months if properly stored.

MIKROSAL CU T 200

Preparation for grain refinement
of copper and its alloys
(particularly brass) based on boron

- 01 **Notes on Technology** A highly effective grain refinement is achieved by the use of **MIKROSAL CU T 200**. The effect of the preparation based on the formation of finest boride crystals in the melt, which act as crystallizers for the solidified brass. They are highly active due to their formation in the melt.
- 02 **Application Range** Before the casting, the tablets are put into the melt by means of a well coated (e. g. **PYRONOL**) immersion bell. A step-wise addition of **MIKROSAL CU T** is possible.
- 03 **Quality Characteristics** **MIKROSAL CU T 200**
- offers completely dense and micro-shrinkage-free casting
 - increases all technological values
 - ensures a clean and irreproachable surface of the coating part
 - permits an essentially better flux of the melt
- 04 **Addition Rate** 0.1 – 0.2 % of the metal weight (e. g. 200 g for 200 kg melt).
- 05 **Product Application** Care is to be taken that the recommended addition of **MIKROSAL CU T** is worked under up to the lower third of the melt. A uniform effect within the entire melt is obtained by constantly moving the immersion bell.
- 06 **Typical Properties** Appearance: grey tablets (size between 200 to 1.500 g, depending on the customers' requirements)
Odour: odourless
- 07 **Packaging** In card boxes with water-vapour-tight foil.
- 08 **Storage and Shelf Life** Store in a cool place (below 32°C/90°F); keep container dry and tightly closed. The shelf life is at least 6 months if properly stored.



PROBAT-FLUSS LUNKERPULVER 200

Preparation for the application on the riser of the casting part
to increase the re-feeding effect

- 01 **Notes on Technology** The effectiveness of feed tubes in the sand casting can be increased if they are covered whereby the heat emission by radiation and convection is reduced. This effect is enforced by an exothermic reaction.
- 02 **Application Range** **PROBAT-FLUSS LUNKERPULVER 200** is suitable for all casting alloys used in sand casting.
- 03 **Quality Characteristics** **PROBAT-FLUSS LUNKERPULVER 200**
- leads to a densely fed casting part as the riser or feed tube retains its melt temperature for a long time due to the resulting heat
 - prevents shrinkage holes and pore formation in the casting part and reduces the tendency to hot tears
 - allows the solidification direction to be influenced
- 04 **Addition Rate** Depending on the riser or feed tube diameter, the thickness of the flux layer should be several cm.
- 05 **Product Application** **PROBAT-FLUSS LUNKERPULVER 200** ignites after being scattered on the feed tube or riser, immediately after filling the mould. The reacted flux remains on the feed tube until the casting part has solidified completely and afterward it can be removed easily.
- 06 **Typical Properties** Appearance: dark red powder
Odour: odourless
- 07 **Packaging** 25 kg paper bags, 3-fold with plastics lining.
- 08 **Storage and Shelf Life** Store in a cool place (below 32°C/90°F); keep container dry and tightly closed. The shelf life is at least 6 months if properly stored.



ZINKAN

Refining, deoxidizing and melting preparation
for zinc and zinc alloys

- 01 **Notes on Technology** When melting zinc and zinc alloys, metal oxides are formed on the bath surface due to air contact. Therefore the addition of a suitable refining and deoxidizing preparation is necessary to remove impurities and reduce the loss of metal.
- 02 **Application Range** **ZINKAN** is a universally applicable melting preparation for cleaning the melt, deoxidizing of zinc oxides and zinc as well as for reducing the metal content of the zinc dross.
- 03 **Quality Characteristics** **ZINKAN**
- has a low melting temperature
 - offers optimal oxidation protection
 - is fumeless and environment-friendly
 - produces low-metal dross
 - is neutral towards zinc
- 04 **Addition Rate** 7 - 10 % of the estimated weight of the dross is necessary for the dross treatment. In case of extreme impurities, an addition of up to 15 % of the dross weight may be necessary.
- For the cleaning and covering of the melt 0.1 % up to 0.5 % of the metal weight is necessary, depending on the degree of impurity.
- 05 **Product Application** **ZINKAN** can be already added with the raw materials to bind the impurities during the beginning melting process and to reduce the oxidation with atmospheric oxygen. Care is to be taken for an even covering of the melt surface. Stir **ZINKAN** intensively with the dross for deoxidizing and reducing the share of metal. After the completion of the reaction and before the casting, skim off the dry, low-metal dross.
- 06 **Typical Properties** Appearance: red powder
Odour: odourless
Reaction temperature: ex approximately 385 °C
- 07 **Packaging** 50 kg paper bags, fibre close bags.
- 08 **Storage and Shelf Life** Keep container dry and tightly closed as hygroscopic. The shelf life is at least 6 months if properly stored.



SUPERIEUR

Cleansing and deoxidizing preparation

for lead and lead-tin alloys of
less than 10 % tin

- 01 **Notes on Technology** Molten lead alloys tend to oxidation and formation of specific heavy drosses if they are not suitably covered during the melting process. When casting, the oxides and slag particles remain included in the casting part and settle around the grain boundaries. As a consequence of this the mechanical properties are impaired and fissures and fractures can arise. If, as is the case with most lead alloys, hardening alloy elements are added, they tend to oxidize first and to change the composition of the complete alloy. This change in analysis may even make the alloy unusable for certain purposes. The presence of merely small quantities of impurities can already highly reduce the casting ability of lead alloys. Care must be particularly taken that aluminium and zinc are not added as only 1 % of these materials affects the process negatively. Apart from the fact that scrap material can only be used if their composition is known, it is necessary to cover the metal bath with a suitable covering and purifying agent as **SUPERIEUR**.
- 02 **Application Range** **SUPERIEUR** is a covering and cleansing preparation for lead and lead alloys of at least 10 % tin. It is a powder which can be not only successfully used as covering preparation, but also for the meltdown of drosses and other residues.
- 03 **Quality Characteristics** **SUPERIEUR**
- removes oxides, impurities and non-metal inclusion from the metal
 - improves the flowability and reduced the danger of insufficient flowability
 - ensures a low-metal dross
 - can be used simply and economically
- 04 **Addition Rate** The addition rate depends on the size of the melt surface and can vary, hence, between 0.1 and 0.2 %.
- 05 **Product Application** Half of the quantity should be applied as soon as the raw material is liquid. I required, add further quantity to keep a complete protective covering. As soon as the raw material is completely molten, add the remaining quantity by means of a perforated immersion bell or stir it into. After completion of the reaction, stir the melt and skim it off. Avoid iron absorption by coating the immersion bell with **PYRONOL**
- 06 **Typical Properties** Appearance: black powder
Odour: odourless
- 07 **Packaging** 25 kg paper bags, 3-folig with plastics lining.
- 08 **Storage and Shelf Life** Store in a cool place (below 32°C/90°F); keep container dry and tightly closed. The shelf life is at least 6 months if properly stored.



CILLOLIN CU 160

Heat conduction, fully colloidal gravity die coating
with low sedimentation characteristics

- 01 **Notes on Technology** The choice of a coating for the rigid and movable parts of gravity dies is of the utmost importance for the quality of the casting part. The structure of the used coating has a direct influence on the flowability and the mould filling of the melt which flows into the gravity die. The coating highly influences the established casting surface and regulates the solidification by its thermal conductivity. Coatings in continuous and discontinuous gravity die casting should be convenient to use, have a uniform consistency and high adhesive strength.
- 02 **Application Range** **CILLOLIN CU 160** is suitable for use on all gravity die materials in CU-gravity die casting.
- 03 **Quality Characteristics** **CILLOLIN CU 160**
- ensures excellent adhesion, especially regarding movable parts of the gravity die
 - produces a uniform surface structure
 - reduced the downtime caused by cleaning or milling
 - ensures the highest level of dimensional accuracy
 - prevents sedimentation from occurring too rapidly by means of a thixotropic agent
 - facilitates the removal of completed casting parts
- 04 **Addition Rate** Dilute with softened water at a ratio of 1:3 up to 1:10.
- 05 **Product Application** Before application, clean the gravity die thoroughly (e. g. with a wire brush). New gravity dies should thoroughly be degreased before use. Therefore use a hot caustic soda solution, petroleum or similar solvent. After that, heat the gravity die on the rear and then apply **CILLOLIN CU 160** thinly and uniformly, using a spray gun, a fine hair brush or a piece of lamb's skin. **CILLOLIN CU 160** can also be used as protective coating for crucibles and casting tools. In gravity die casting, **CILLOLIN CU 160** can be diluted with water as required and the gravity die can be dipped after the casting.
- 06 **Typical Properties** Appearance: black, pasty
Odour: odourless
- 07 **Packaging** Concentrate – homogenized in cans of 25, 10, 5 and 1 kg.
- 08 **Storage and Shelf Life** Store in a cool place (below 32°C/90°F); keep container dry and tightly closed. The shelf life is at least 6 months if properly stored.

