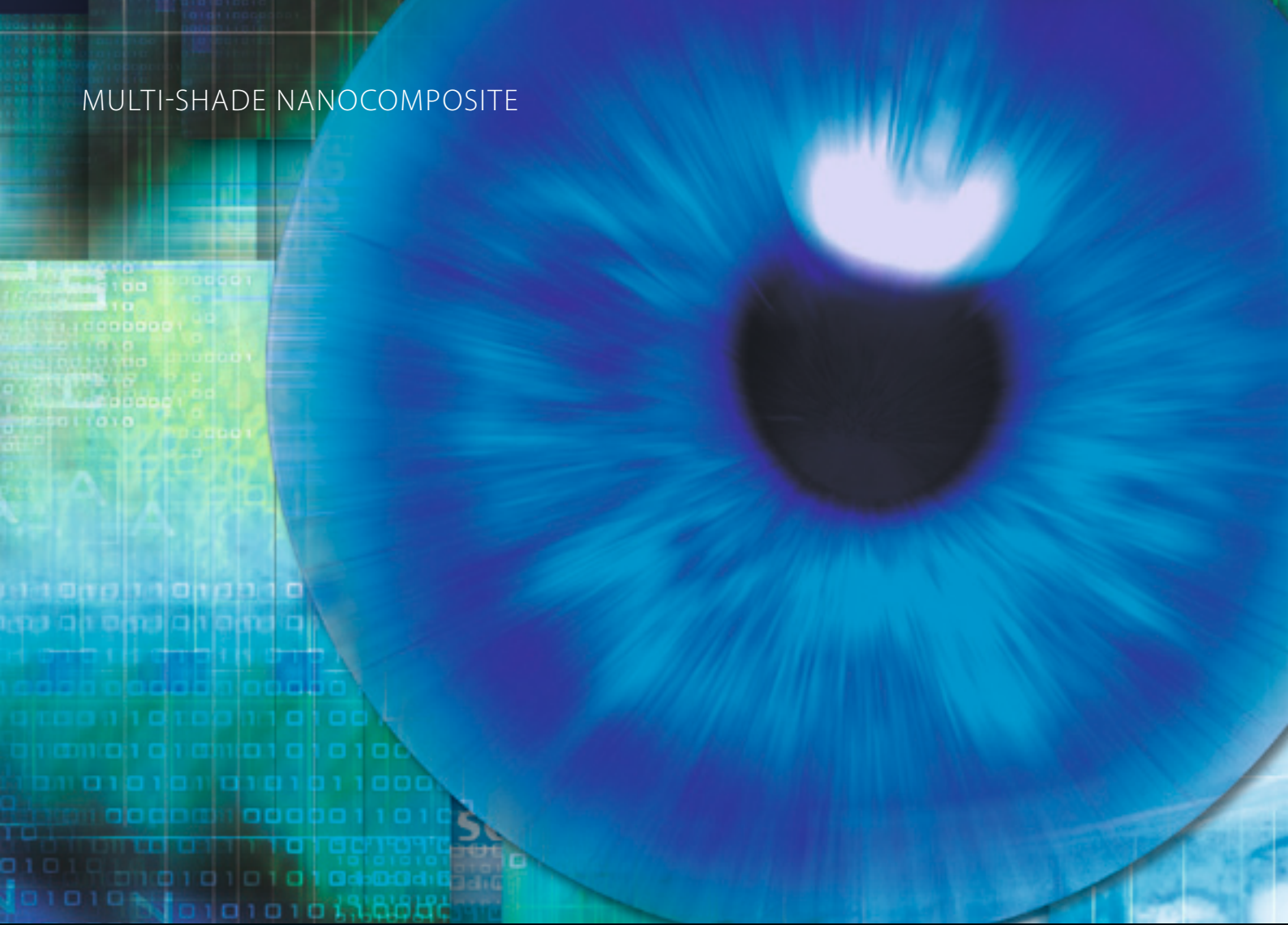


MULTI-SHADE NANOCOMPOSITE



*Miris<sup>®2</sup>*

Artificial reality

/// COLTENE<sup>®</sup>



# MIRIS<sup>2</sup> is aesthetic, simple and predictable.

## **Prerequisite for a perfect end result**

The idea behind MIRIS<sup>2</sup> is to enable tooth reconstruction with two basic compounds. The compounds have optical properties that are comparable with those of dentine and enamel so they produce natural results. For this purpose, the shades and translucency of natural teeth in adolescent, adult and elderly patients were measured and emulated. In addition to dentine and enamel shades, compounds with special effects have been developed in order to allow customised reconstruction, taking special aspects into account, and thus achieve unsurpassed aesthetics – even in highly complex cases. MIRIS<sup>2</sup> is suitable for direct reconstruction of teeth in adolescent, adult and elderly patients.

## **MIRIS<sup>2</sup> offers a perfectly graduated range of shades for first-class aesthetic results**

The unique MIRIS<sup>2</sup> shade concept is not based on VITA® systems<sup>1</sup>. It is easier to use and closer to nature. MIRIS<sup>2</sup> shades can be produced by combining the appropriate dentine shade with the normal white or neutral enamel compounds (MIRIS<sup>2</sup> White Regular & Neutral Regular) whilst a yellowish shade (as with VITA®<sup>1</sup> B shades) calls for ivory-coloured enamel (MIRIS<sup>2</sup> Ivory Regular). In this way it is possible to achieve a greyish shade (as with VITA®<sup>1</sup> C shades) using translucent enamel (MIRIS<sup>2</sup> Neutral Trans). All the dentist has to select is the correct dentine chroma and, depending on the type and age of the tooth, the matching

enamel shade and translucency. Selection is facilitated by a unique shade guide and virtually eliminates all errors prior to reconstruction.

## **Indications**

MIRIS<sup>2</sup> has been developed as a comprehensive system and it is suitable for anterior and posterior teeth. It is ideal for all direct, semi-direct and indirect restorations. In addition, it is suitable not only for all types of cavity but also for aesthetic and cosmetic indications, for diastema closures, for changes in tooth shape and colour, and for applying veneers.

<sup>1</sup> Not a registered trademark of Coltène/Whaledent

# One dentine shade with 8 levels of chroma



## Direct treatment with composite

Class IV restorations and incisal build-ups are the greatest challenges. The basis is provided by precisely graduated shades that reflect the appearance of natural tissue, with all its special characteristics. Only MIRIS<sup>2</sup> is so uncomplicated that it is suitable for all users alike. It comprises a set of 8 dentine shades that all have the same hue but different chroma levels (from grade 0 for reconstruction of bleached teeth to grade 7 for cervical reconstruction of dark teeth in elderly patients). The range available covers the entire spectrum of natural shade graduations of dentine.

## A single set of 5 enamel shades that reflect all the subtle optical variations found in natural teeth

Enamels of the MIRIS<sup>2</sup> system are available in three basic hues: WHITE, NEUTRAL AND IVORY. Each of these hues emulates the optical properties of the enamel in adolescent teeth, bleached teeth, adult teeth and elderly teeth. Furthermore, enamels are provided in various degrees of translucency: low for bleached enamel and white enamel, medium and high for neutral enamel, and medium for ivory-coloured enamel. MIRIS<sup>2</sup> offers a simplified selection of enamels with considerably greater opalescence.







# The technique: clinical use – step by step

Dentin shade



Enamel shade



Enamel shell is placed  
over a dentine core



Defined shade  
combination:  
dentin and enamel



## **MIRIS<sup>2</sup> shade management. Step by step**

Shade selection is the first step of treatment. It is always performed immediately after the teeth have been cleaned, and in all cases before cavity preparation and before placement of the rubber dam. Shade selection consists of two steps:

### **1. Selection of the dentine shade.**

The first step is to determine dentine chroma. This is performed with the aid of dentine shade guides in the cervical area, where the enamel has a minimal thickness and has virtually no influence on shade perception. If a shade is determined slightly further away from the cervix, the attenuating effect of the enamel on chroma needs to be taken into account. For example, selection of dentine shade «S3», made on the basis of a central buccal surface, corresponds to a dentine chroma of «S4» or «S5». However, this approach is not to be recommended because it is not accurate enough. The dentine shade can also be decided after preparation of the cavity. However, the entire treatment must be accompanied by water cooling in order to prevent tissue dehydration, which would lead to an incorrect selection of shade (selection of lower chroma).

**IMPORTANT:** Neither the presence of tertiary or sclerotic dentine in the deeper areas of the cavity nor superficial defects (wedge-shaped defects or erosion lesions, etc.), which normally cause sclerotic dentine to appear darker, should be used as a basis for determining dentine shade.

### **2. Selection of enamel shade and translucency.**

Optical characteristics of enamel differ between individuals and vary depending on age. To determine the enamel tint and translucency, incisal edges and proximal areas of the contralateral teeth and adjacent teeth are inspected and a preselection is made using an enamel shade guide.

### **Confirmation of selected dentine and enamel with the special MIRIS<sup>2</sup> shade guides**

This consists of inserting the selected dentine sample into the pre-selected enamel sample, whereby glycerol or water can be introduced in-between. That avoids possible effects of light refraction at the transition. If necessary, the tint and translucency of the enamel can be tried out until a good match has been achieved. If there is no match, try out a different enamel in which the chroma can be selected easily and accurately, instead of the dentine.

### **Effect materials**

Based on direct observation or good intraoral photographs of the contralateral teeth or adjacent teeth a decision must be taken as to whether effect material is to be used.

## **A unique shade guide for a unique system**

Successful shading is the key to optimal aesthetics. For this reason an innovative shade guide was developed to assist you in selecting the most appropriate dentine and enamel compounds. The scale itself is made of MIRIS<sup>2</sup> composite material in order to reproduce all the optical properties accurately. A shade sample is available for each dentine/enamel shade. They precisely emulate a tooth and have the size and thickness of natural tissue. And whenever a dentine core has to be inserted in an enamel shell, the application is amazingly easy. However, we recommend using some glycerol gel or water between the two samples in order to avoid possible effects of light refraction at the transition. The kit also contains a table that can be used to select MIRIS<sup>2</sup> dentine compounds, enamel compounds and effect compounds depending on the clinical situation, the type of tooth and its age.

### **Finishing and polishing**

Finishing is basically fine-tuning. The aim is to recreate the texture and gloss of the tooth. If necessary, the texture, especially in the case of young patients, is restored with medium-grain diamond burs (40 microns as a rule), without water cooling and at low rotational speed. For all flat and convex surfaces, polishing discs are the most suitable tools for finishing and polishing. Fine diamond burs and silicone polishers are the instruments of choice for smoothing out concavities and uneven surfaces. To complete the treatment, hard polishing brushes (Diashine, Diatech) are used or a polishing paste is applied using extra soft discs.

# Composite build-up

## Material selection according to the clinical situation:

Teeth	Bleached			Adolescents			Adults			Elderly patients		
	Dentin	Effect	Enamel	Dentin	Effect	Enamel	Dentin	Effect	Enamel	Dentin	Effect	Enamel
Classes I-II	S2	–	WB	S2	–	WR	S3	–	WR/NR	S4	–	NR
Class III	S0-S1	–	WB	S1-S2	–	WR/WB	S2-S3	–	WR/NR/IR	S4-S5	–	NR/IR/NT
Class IV	S0-S1	B/W/WO	WB	S1-S2	B/W/WO	WR/WB	S2-S3	B/G/W/WO	WR/NR/IR	S4-S5	G/W/WO	NR/IR/NT
Class V	S0-S3	–	WB	S1-S3	–	WR/WB	S2-S5	–	WR/NR/IR	S4-S7	–	NR/IR/NT
Aesthetics	S0-S1	B/W/WO	WB	S1-S2	B/W/WO	WR/WB	S2-S3	B/G/W/WO	WR/NR/IR	S4-S5	B/G/W/WO	NR/IR/NT
Veneers	(S0-S1)	B/W/WO	WB	(S1-S2)	B/W/WO	WR/WB	S2-S3	B/G/W/WO	WR/NR/IR	S4-S5	B/G/W/WO	NR/IR/NT

The effect shades Gold, White and White Opaque can be mixed so it is possible to produce any desired opaque tint in all dentine shades (S0 to S7).

The compounds for dentine and enamel resemble natural build-up substances in terms of shade, opacity and fluorescence. They are intended for use based on a two-layer concept that emulates the internal structure of natural teeth.

The adjacent teeth supply the information needed to reconstruct a tooth three-dimensionally and provide it with the exact volume and shape required.

Where such terms of reference are absent, cavity preparation must be preceded by a diagnostic mock-up with the composite system (direct application of the composite system without any surface treatment). After rapid completion of the lingual profile the expected results are recorded with the aid of a silicone key so

the anatomy of the palate and incisal surfaces can be built up properly. Particular attention should be paid to age-related tooth characteristics.

Physiological maturation of the tooth and functional changes in the dentine and enamel call for a build-up technique that is matched to the particular age group. This implies a specific selection of tints and composite blends to ensure the tooth reconstruction has a perfectly natural appearance.



## Young patients

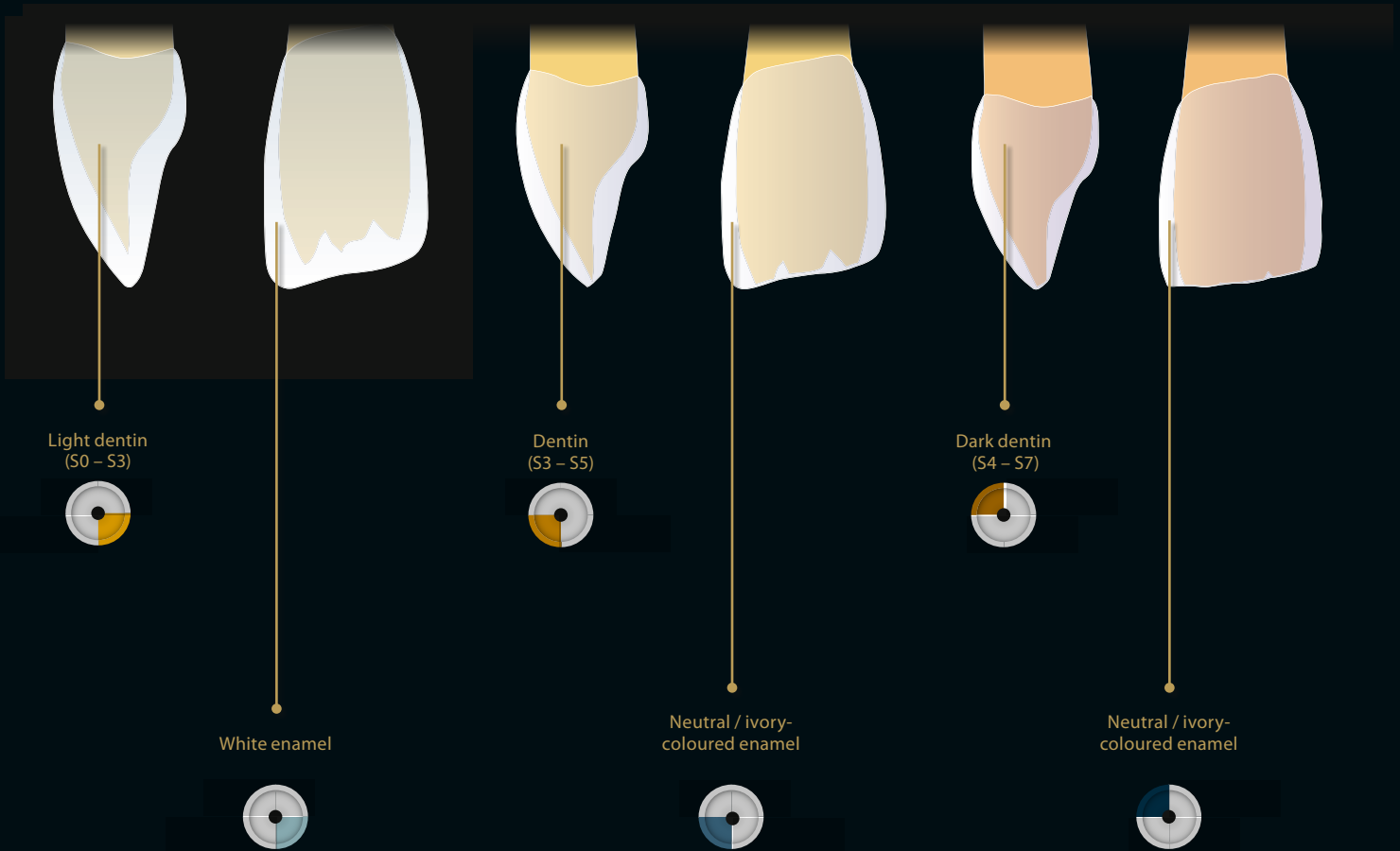
With young patients, the enamel generally displays a distinct opalescent effect and the least translucency. On the incisal edges the dentine lobes are completely covered with enamel. The dentine is lighter-coloured with only minor variations in colour.

## Adult patients

In adult patients the enamel is generally less white. It tends to look rather neutral or slightly ivory in colour. The dentine on the incisal edges can be exposed and it is darker.

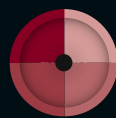
## Elderly patients

In elderly patients the enamel is thinner and more transparent. The dentine under the incisal edges has a clear structure and looks like a flat wall. The individual lobes are more difficult to see and only slight depressions remain. The dentine is relatively dark and has a high chroma.



Dentin

Dentin replacement: dentine compounds in a single shade and opacity but various levels of chroma  
Dentine (S) 0-1-2-3-4-5-6-7



Effect

Effect compounds: for special optical effects and special anatomical characteristics  
Blue (B): for emulating opalescence in the incisal edges  
White (W): for emulating white spots / hypoplastic lesions  
White Opaque (WO): for masking dark spots  
Gold (G): for emulating areas with intense chroma  
Materials are selected according to the clinical situation (Table)



Enamel

Enamel replacement: Enamel compounds with various tints and degrees of opacity  
White Regular (WR) / White Bleach (WB)  
Neutral Regular (NR) / Neutral Trans (NT)  
Ivory Regular (IR)



# Special effect

## Special effect compounds for superior aesthetics, even in highly complex situations

In addition to the two basic dentine and enamel compounds, special effect materials have been developed to create/emulate certain shade effects. For example, local highly intense opalescence can be emulated with the aid of MIRIS<sup>2</sup> BLUE effect shade. On the other hand, hypocalcification (white spots) and fissures can be perfectly reproduced with MIRIS<sup>2</sup> WHITE or MIRIS<sup>2</sup> WHITE OPAQUE.

The effect shade MIRIS<sup>2</sup> GOLD was developed for local use in areas with high chroma and for the preparation of opaque areas in the desired tint. The MIRIS<sup>2</sup> GOLD effect shade can be mixed with MIRIS<sup>2</sup> WHITE and/or WHITE OPAQUE using various proportions in order to achieve the required tint and the desired masking effect.

## In summary

The «natural layering concept» has for the first time been fully integrated into a composite system. The concept pursues a simple and logical approach to layering.

By using DENTIN and ENAMEL compounds (which are almost identical to natural tissue) in conjunction with special EFFECT shades, any dentist – no matter whether he or she is a specialist or not – is able to produce restorations of superb aesthetic quality.

## MIRIS<sup>2</sup> Syringe Set

### 8431 MIRIS<sup>2</sup> Syringe Set

Contents:

13 Syringes (4 g / 2 ml each),  
4 Syringes (2.3 g / 1.4 ml each)  
Accessories + Shade Guide

### MIRIS<sup>2</sup> Dentin Shade

Shade 0 (S0)  
Shade 1 (S1)  
Shade 2 (S2)  
Shade 3 (S3)  
Shade 4 (S4)  
Shade 5 (S5)  
Shade 6 (S6)  
Shade 7 (S7)

### MIRIS<sup>2</sup> Enamel Shade

White Regular (WR)  
White Bleach (WB)  
Neutral Regular (NR)  
Neutral Trans (NT)  
Ivory Regular (IR)

### MIRIS<sup>2</sup> Effect Shade

Blue (B)  
White (W)  
White Opaque (WO)  
Gold (G)

## MIRIS<sup>2</sup> Syringe Refills

### Refills

Contents:

1 Syringe (4 g / 2 ml) or  
(2.3 g / 1.4 ml)

### MIRIS<sup>2</sup> Dentin Shade – Syringe

8409 Shade 0 (S0)  
8432 Shade 1 (S1)  
8433 Shade 2 (S2)  
8434 Shade 3 (S3)  
8435 Shade 4 (S4)  
8436 Shade 5 (S5)  
8437 Shade 6 (S6)  
8438 Shade 7 (S7)

### MIRIS<sup>2</sup> Enamel Shade – Syringe

8439 White Regular (WR)  
8440 White Bleach (WB)  
8441 Neutral Regular (NR)  
8442 Neutral Trans (NT)  
8443 Ivory Regular (IR)

### MIRIS<sup>2</sup> Effect Shade – Syringe

8445 White (W)  
8446 White Opaque (WO)  
8447 Gold (G)  
8403 Blue (B)

### MIRIS<sup>2</sup> Accessories:

8411 Miris<sup>2</sup> Shade Guide  
7235 Separator 5 ml  
7874 Application Needles – 10 pcs.  
6671 Composite Dispenser  
7047 One Coat 7.0 Intro Kit  
7049 One Coat 7.0 Refill – 5 ml  
7634 Microbrush Black – 50 pcs.



# Order information

## MIRIS<sup>2</sup> TIPS SET

### 8465 MIRIS<sup>2</sup> Tips Set

Contents:

78 Tips (0.25 g / 0.125 ml each)

4 Syringes (2.3 g / 1.4 ml each)

Accessories + Shade Guide

### MIRIS<sup>2</sup> Dentin Tips

Shade 0 (S0) 6 pcs.

Shade 1 (S1) 6 pcs.

Shade 2 (S2) 6 pcs.

Shade 3 (S3) 6 pcs.

Shade 4 (S4) 6 pcs.

Shade 5 (S5) 6 pcs.

Shade 6 (S6) 6 pcs.

Shade 7 (S7) 6 pcs.

### MIRIS<sup>2</sup> Enamel Tips

White Regular (WR) 6 pcs.

White Bleach (WB) 6 pcs.

Neutral Regular (NR) 6 pcs.

Neutral Trans (NT) 6 pcs.

Ivory Regular (IR) 6 pcs.

### MIRIS<sup>2</sup> Effect Shade

Blue (B)

White (W)

White Opaque (WO)

Gold (G)

## MIRIS<sup>2</sup> Tips Refill

### Refill 10x

Contents:

1 Pack (10 or 20 Tips)

(0.25 g / 0.125 ml each)

### MIRIS<sup>2</sup> Dentin Tips

8406 Shade 0 (S0)

8472 Shade 1 (S1)

8473 Shade 2 (S2)

8474 Shade 3 (S3)

8475 Shade 4 (S4)

8476 Shade 5 (S5)

8477 Shade 6 (S6)

8478 Shade 7 (S7)

### MIRIS<sup>2</sup> Enamel Tips

8479 White Regular (WR)

8480 White Bleach (WB)

8481 Neutral Regular (NR)

8482 Neutral Trans (NT)

8483 Ivory Regular (IR)

### Refill 20x

MIRIS<sup>2</sup> Dentin Tips

8408 Shade 0 (S0)

8486 Shade 1 (S1)

8487 Shade 2 (S2)

8488 Shade 3 (S3)

8489 Shade 4 (S4)

8490 Shade 5 (S5)

8491 Shade 6 (S6)

8492 Shade 7 (S7)

### MIRIS<sup>2</sup> Enamel Tips

8493 White Regular (WR)

8494 White Bleach (WB)

8495 Neutral Regular (NR)

8496 Neutral Trans (NT)

8497 Ivory Regular (IR)



© 2013 Coltène/Whaledent AG – www.coltene.com

**Coltène/Whaledent Ltd.**  
The President Suite  
Kendal House, Victoria Way  
Burgess Hill, West Sussex  
RH15 9NF / UK  
Tel +44 1444 235486  
Fax +44 1444 870640  
info.uk@coltene.com

**Coltène/Whaledent AG**  
Feldwiesenstr. 20  
9450 Altstätten/Switzerland  
Tel. + 41 71 757 53 00  
Fax + 41 71 757 53 01  
info.ch@coltene.com

**Coltène/Whaledent Inc.**  
235 Ascot Parkway  
Cuyahoga Falls, Ohio 44223/USA  
Tel. + 1 330 916 8800  
Fax + 1 330 916 7077  
info.us@coltene.com

**COLTENE®**