

# CASWELL

## EUROPE

### SD “Cold-Ox” System

3 Kits making 20 litres, 4 litres or 1 litre working system.

Kits are sized on the SD Cold-Ox concentrate only.

250ml will give the 1 litre kit

1 litre will give the 4 litre kit

5 litres will give the 20 litre kit.

The other chemicals are diluted or not in line with the instructions.

**A “Cold” Black Oxide Solution**  
developed with the Hobbyist and Small Production Shop in Mind  
brought to you through years of research and experience  
in the metal finishing industry.



**This new technique was developed by the commercial gun blue manufacturers as a more environmentally friendly system than the commonly used hot application. Parts requiring blackening are simply placed in the liquid at room temperature, no electrical power is required.**

## SD "Cold-Ox" System

### 3 Kits making 20 litres, 4 litres or 1 litre working system.

A "Cold" Black Oxide Solution developed with the Hobbyist and Small Production Shop in Mind brought to you through years of research and experience in the metal finishing industry.

Safely produces a firmly adherent black oxide coating on steel surfaces as an alternative to the hot caustic processes. This process does not contain cyanides or organic complexants. The coating is integral with the steel surface with no dimensional change. It is ideal for the small or large volume user alike. Parameters are the same for treating one screw or one hundred thousand screws.

Safely and easily produces a rich black oxide coating on all types of Steel and Cast Iron except Stainless Steel. Hardened and High Carbon Steels can be treated without loss of strength or embrittlement.



SD Cold-Ox will cover at over 4 square metres per litre of concentrate or 36 square feet. Dilute with tap water to make 4 times the volume of the concentrated solution.

Kit contains all necessary chemicals for the job – "Klene-OX 8000" Degreasing/ Cleaning Solution – "Cond-OX" Metal Conditioner – "Cold-OX" Black Oxide Solution – "Seal-OX21" Protective Sealer – Instructions + tanks for the 2 larger kits

Can be used on Fasteners, Car and Motorcycle Components, Gun Barrels and accessories, Engineering and Model Engineering Products, Machine Parts and Restoration Work.

#### Features & Benefits

Energy efficient- no heating costs as all the products can be used at room temperature.

Safe to use- SD "Cold-Ox" is not corrosive, does not fume and is easily diluted with water.

Easy operation- eliminates the need for dedicated process operators in most cases.

No capital expense- use of simple polyethylene tanks, cartons or buckets.

Low cost operation- low energy, quick process.

Easy installation- the only requirement is a good supply of water.

No special working area necessary.

Clean environment- neat, compact production line with safer products and an ease of use more acceptable to the operator.

Low maintenance- just keep the tank covered when not in use.

Whether for decoration, reflectivity, sales appeal or adhesion SD "Cold-Ox" will produce an excellent black finish to screws, bolts, gauges and all high precision machine parts, which cannot accept any dimensional change or distortion during processing.

### SD Klene-Ox S8000

#### Description of Product

SD Klene-Ox S8000 is a light duty alkaline degreaser capable of removing light machining and pressing oils from mild steel components at room temperature, however for more heavily soiled components use a hot degrease wash such as SD Klene-416 or a Trichloroethylene based degreaser. Cellulose Thinners or Acetone can be used but it is advised that in all cases the operative wears impervious gloves and face/ eye protection.

#### Directions for use.

SD Klene-Ox S8000 is supplied in 1-litre bottles with the SD Cold-Ox kit or alternatively can be purchased in 5 litre containers if required. SD Klene-Ox S8000 is best used in the concentration supplied but can be diluted with up to 50% water. Do not reduce the strength of this product lower than prescribed. Components being removed from the tank should be totally water wetted with no water breaks or dry patches. If any of these symptoms are present the component is not clean. It is possible that the solution is weak and should have 10% of the bath removed and replaced with 10% of the concentrate. If this does not correct the problem use a new batch of the solution.

Scrubbing a heavily soiled component in hot detergent (SD Klene-416 or washing up liquid) and rinsing thoroughly prior to immersing in the SD Klene-Ox S8000 bath can prolong solution Life. Being an alkaline solution immersion in SD Klene-Ox S8000 will help to maintain the pH of the SD Cold-Ox solution.

## **SD Cond-Ox - Steel and Cast Iron Conditioner**

(Non-hazardous in normal operation conditions.)

### **Description of Product**

SD Cond-Ox conditioner has been specially developed as a **surface-conditioning product** primarily for use in the SD Cold-Ox room temperature blacking process. It is of particular use where different types of steel are processed through the same SD Cold-Ox solution to ensure a uniformed finish on all components. 500 mls make 5 litres of conditioning solution.

During the pre-cleaning stage prior to blacking, certain steels will release carbon which will form a smut on the steel surface and may cause the subsequent black deposit to be less adherent. **This is certainly the case with cast steels.** An intermediate immersion in a solution of SD Cond-Ox will greatly reduce this problem. It will also increase the adhesion on low carbon steels.

### **Operating Conditions.**

A 10% solution of SD Cond-Ox (1 part SD Cond-Ox to 9 parts mains water) is recommended.

A 2-minute immersion will be adequate for most steels but this can be varied between 1 minute and 10 minutes if required. Good water rinsing is essential after conditioning and before immersion in the SD Cold-Ox tank. Operating temperatures should be between 15 and 30 C.

Replenishment of the solution is not normally necessary but if after a period of blacking the effect on the steel diminishes, make a new batch of solution and proceed as before. Breakdown of the solution is usually caused through the carry over of the cleaner/ degreaser. Tanks can be made of Polyethylene and plastic buckets make good tanks.

Ensure that there is adequate water for rinsing. This product is an integral part of the SD Cold-Ox blacking process to ensure a quality finish.

## **SD Cold-Ox**

### **Description of Product**

Safely produces a firmly adherent black oxide coating on steel surfaces as an alternative to the hot caustic processes. This process does not contain cyanides or organic complexants. The coating is integral with the steel surface with no dimensional change. Safely and easily produces a rich black oxide coating on all types of Steel and Cast Iron except Stainless Steel. Hardened and High Carbon Steels can be treated without loss of strength or embrittlement.

### **Directions**

#### **Solvent degrease process for rust and scale free steel**

- 1) Degrease the components. (See instructions for SD Klene-Ox S8000)
- 2) Air dry for 2-3 minutes.
- 3) Condition in a 10% solution of SD Cond-Ox conditioner for 2 mins. (See instructions)
- 4) Water rinse for 30 seconds in clean water.
- 5) Blacken in 25% solution of SD Cold-Ox for 5-15 mins.
- 6) Water rinse for 30 seconds in clean water
- 7) De-water and oil the components by immersion in SD Seal-Ox 21 to protect the surface. (See instructions)
- 8) Allow to drain and dry.

#### **Mild alkali degrease process for rust and scale free steel**

- 1) Degrease for 5-20 mins. (SD Klene 416 - available separately)
- 2) Water rinse for 1 minute in clean water.
- 3) Condition in a 10% solution of conditioner for 2 mins. (See instructions)
- 4) Water rinse for 30 seconds in clean water.
- 5) Blacken in a 25% solution of SD Cold-Ox for 5-15 mins.
- 6) Water rinse for 30 seconds in clean water.
- 7) Dewater and oil the components by immersion in SD Seal-Ox 21 to protect the surface
- 8) Allow to drain and dry.

Stages 3 & 4 are optional in both processes depending on the condition of the steel to be treated.

All chemical immersion stages should be operated at a temperature of 15°C-25°C. Clean mains water must be used in the preparation of all chemical solutions. For the treatment of hardened steels or rust and scale immerse the components in 25% solution of SD Comscale-650 for 5-30mins. Degree of corrosion resistance depends on the type of dewatering fluid used as a final treatment. See relevant data sheet. Continuous filtration of the SD Cold-Ox solution is recommended for tanks of working volume over 50 litres. Where filtration is not used, regular decanting of the solution to ensure any sludge formed is removed is recommended.

### **SD Seal-Ox 21**

#### **Description of Product.**

SD Seal-Ox 21 is a solvent-based rust preventative with excellent de-watering properties. It is formulated using modern synthetic materials, which provide superior rust preventative properties and produces a very thin oily film.

Treated components are protected against corrosion for up to 9 months internal storage and up to 3 months outdoor storage. Further protection can be effected by a further application of SD Seal-Ox21 or by periodically using a silicone wax over the treated article.

SD Seal-Ox 21 is suitable for use on all metals including Brass, Copper and aluminium and is ideal for porous conversion coatings such as chemical blacking on steels. It is resistant to contamination and emulsification. **SD Seal-Ox 21 is particularly suitable for final stage rust prevention, either after machining or after alkali, acid or solvent cleaning processes.**

#### **Directions for use.**

For optimum results components should be clean and rust free, although machining coolants and lubricating residues should not impair product performance. When used with the SD Cold-Ox system the component should be thoroughly rinsed prior to immersion in the SD Seal-Ox 21 tank. Immersion or spray applications are suitable.

#### **By dipping.**

SD Seal-Ox 21 should be used cold, ideally in a purpose built tank where the accumulation of water can be drained off or in a polythene container where the accumulation can be seen and the SD Seal-Ox 21 decanted off occasionally. Components should be maintained in the solution and not allowed to sit on the bottom of the tank where they might come into contact with contamination. Components should be left to drain which will take between 45 and 60 minutes for initial drying.

#### **By Spray or brush.**

Apply by low-pressure non-misting spray or brush, work from top to bottom. Allow the same draining and drying time for dip application.

#### **Safety Advice.**

FLAMMABLE: Flashpoint is >44° C. Keep out of reach of children. Avoid any unnecessary or prolonged personal contact. Do not mix with other chemical products unless specifically directed to do so. Recommended storage is in a closed lidded tank or in the original packing. Store at 25° C.

#### **Disposal.**

Spillage should be absorbed with an inert mineral absorbent DO NOT allow to enter the watercourse. Final disposal can be by burning or using the local waste disposal facility.