
ECO - COVERFLUX

PRODUCT DATASHEET - NON FERROUS METAL TREATMENT

A range of fluxes for covering, protecting and cleansing molten aluminium and its alloys

GENERAL DESCRIPTION

ECO - COVERFLUX range of fluxes are used for covering and drossing molten aluminium and its alloys. ECO - COVERFLUX fluxes are also available for modifying aluminium - silicon alloys, for recovering aluminium from dross, for reclaiming chips, turnings and borings and for removal of oxide build up on furnace walls.

PURPOSE

COVERING TYPE – Purely covering fluxes, such as ECO - COVERFLUX – 65 and ECO - COVERFLUX – 34, protect liquid metal from oxidation losses by sharply minimising the contact of metal surface with atmospheric oxygen.

COVERING AND DROSSING FLUXES – Protect liquid metal from oxidation and also cleanse the melt by absorbing oxide inclusions. Its exothermicity melts aluminium beads to return it to the molten metal. Modifying fluxes refine the grain size of Al-Si eutectic by introducing sodium metal in the melts.

RECOVERING FLUXES – Melt entrapped aluminium in hot dross due to its intense exothermic action.

RECLAIMING FLUXES – Improve the recovery of metal in melting of chips, turnings, borings by absorbing oxides selectively and preventing any premature oxidation prior to the entry in the heel.

FURNACE CLEANING FLUXES – Soften oxide build-up on furnace walls by means of chemical reaction and exothermicity.

BENEFITS

- ◆ Covering fluxes prevent oxidation losses of aluminium during melting. Thus improving the yield of molten metal from the charge.
- ◆ Drossing-off fluxes absorb oxides and non-metallic inclusions. It reduces the incidence of inclusions in the castings and also reduces the loss of metal through the dross.
- ◆ Modifying fluxes improve the mechanical properties of aluminium – silicon alloys by refining eutectic microstructure.
- ◆ Recovering fluxes help extract maximum aluminium from hot dross.
- ◆ Reclaimed fluxes minimise the melting losses associated with the melting of chips, turnings and borings.
- ◆ Furnace cleaning fluxes retain the melting capacity and efficiency of furnace while improving the life of the refractory lining.

INSTRUCTIONS FOR USE

◆ COVERING FLUXES

Add recommended quantity as per Application guide given on next page in two stages – half as soon as charge begins to melt, the remainder uniformly distributed over the entire surface when the complete charge is molten. Keep the cover intact as far as possible until the melt is ready for further treatment/casting.

◆ COVERING AND DROSSING FLUXES

Add recommended quantity in two stages – half during melting and the remainder after the metal is ready for pouring. Rabble it into the dross until a red glowing powdery dross is obtained. Skim the dross prior to casting.

◆ MODIFYING FLUXES

First degas and skim the melt clean when the required temperature of the melt is reached. Sprinkle the modifying flux evenly over the cleaned surface. When it becomes pasty or fluid, work it well into the melt for about 3 minutes. Allow the metal to stand for five to ten minutes before pouring.

◆ FLUX FOR RECOVERING ALUMINIUM

Add ECO - COVERFLUX – 56 and hot dross alternatively in sandwich fashion into a dross bogie, which is perforated at the bottom. Stir the dross every 15 minutes until no more metal runs through the perforated base.

◆ FLUX FOR RECLAMATION OF CHIPS, TURNINGS AND BORINGS

Melt down a heap of metal first in the furnace from the solid scrap or ingots. Add sufficient ECO - COVERFLUX – 57 to form a fluid cover. Then add the chips, turnings, borings a little at a time through the cover, deep into the melt. Add more ECO - COVERFLUX – 57 from time to time to maintain the cover in a fluid condition.

◆ FURNACE CLEANING FLUX

Add ECO - COVERFLUX – 88 evenly on the furnace wall particularly in area of heavy oxide build up just after the tapping operation. Scrap down the softened oxide build up from the walls by a suitable tool for subsequent removal.

STANDARD PACKING

ECO - COVERFLUX grades - 5, 11, 11(S), 29A, 36A, 56, 57, 58, 66 and 88 are supplied in 50 kg polylined HDPE Woven bags.

ECO - COVERFLUX – 34 in 15 kg polycarbuoys.

ECO - COVERFLUX – 65 in 20 kg polycarbuoys.

SHELF LIFE & STORAGE

ECO - COVERFLUX should be stored in a cool and dry place.

The bags should never be kept open as moisture - pick up from atmosphere may affect the performance of the product.

APPLICATION GUIDE

PRODUCT	COLOUR	APPLICATION RATE	DROSS TYPE	MELTING POINT	MELTING UNIT	ALLOY TYPE	REMARKS
a) COVERING FLUXES ECOCOVERAL65	WHITE	2 – 3 %	PASTY	500°C	CRUCIBLE	Alloy containing 2-6% Mg and hyper eutectic Al-Si alloys	Sodium free
ECOCOVERAL 34	WHITE	3-4%	LIQUID TO PASTY	500°C	CRUCIBLE BALE-OUT AND REVERBERATORY	Alloys containing 6-11% Mg	Sodium free
b) COVERING AND DROSSING FLUXES ECOCOVERAL 5	WHITE	1%	DRY	-	REVERBERATORY ROTARY AND LARGE ELECTRIC FURNACE CRUCIBLE AND ELECTRIC	All alloys except those containing more than 1% of.Mg.	Also prevents furnace wall build – up
ECOCOVERAL11 (TECHNICAL GRADE)	PINK	1%	DRY	-	CRUCIBLE AND BALE OUT	-do-	General purpose grade
ECOCOVERAL 66	YELLOW	2-3%	DRY	-		Alloys containing 1-10 Mg. & hypereutectic	Sodium free
c) MODIFYING FLUXES ECOCOVERAL 29A	WHITE	1.5%	LIQUID	780°C	CRUCIBLE AND BALE OUT	Al-Si alloys	For metal temperature between 790-800°C
ECOCOVERAL 36A	BLUE	3%	LIQUID	670°C	CRUCIBLE AND BALEOUT	Al-Si alloys	Temperature Between 710-750°C
ECOCOVERAL 58	WHITE	3%	LIQUID	645°C	-do-	-do-	Temperature Between 710-720°C
d) RECOVERING FLUX ECOCOVERAL 56	WHITE	5-10%	LIQUID	635°C	-	-	For recovery of aluminium from hot Drosses in a dross bogie
e) RECLAIMING FLUX ECOCOVERAL 57	YELLOW	2-10%	LIQUID	590°C	REVERBERATORY CRUCIBLE, ROTARY AND LOW FREQUENCY INDUCTION	Alloys except those containing high Mg.	Melting of Chips, turnings, borings
f) ECOCOVERAL 88 (TECHNICAL GRADE)	WHITE	Depends on the size of the furnace	-	-	REVERBERATORY ROTARY		Removal of Oxide build upon furnace wall.

* Approximate application rate is given in this table. Actual application rate will depend on the charge mix, composition of the alloy, type of the furnace, metal temperature, etc. and has to be arrived at on the shop floor.