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Product Datasheet - Non Ferrous Metal Treatment

COVERAL*

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

General description

COVERAL range of fluxes are used for covering and drossing molten aluminium and its alloys. COVERAL 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 fluxe, such as COVERAL 65 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 chemicals reaction and exothermicity.

Benefits

COVERAL range of products offer the following benefits :

1. Covering fluxes prevent oxidation losses of aluminium during melting.Thus improving the yield of molten metal from the charge.

2. Drossing-off fluxes absorb oxides and non-metallic inclusions. It reduces the incidence of inclusions in the castings and also reduce the loss of metal through the dross.

3. Modifying fluxes improve the mechanical properties of aluminium-silicon alloys by refining eutectic mictrostructure.

4. Recovering fluxes help extract maximum aluminium from hot dross.

5. Reclaimed fluxes minimise the melting losses associated with the melting of chips, turnings and borings.

6. 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 & 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 5 to 10 minutes before pouring.

FLUX FOR RECOVERING ALUMINIUM

Add COVERAL 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 at the bottom. Stir the dross every 15 minutes until no more metal runs through the perforated base.

FLUX FOR RECLAIMATION OF CHIPS, TURNINGS & BORINGS

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

FURNACE CLEANING FLUX

Add COVERAL 88 evenly on the furnace wall particularly in areas 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

COVERAL grades 5, 11, 29A, 36A, 56, 57, 58, 65, 66 and 88 are supplied in 50 kg HDPE bag.

Storage Precautions

COVERAL should be stored in a cool and dry place.

The bags should never be kept open since it picks-up moisture from atmosphere & may affect the product performance .

THE COVERAL RANGE

Product	Colour	Application rate	Dross Type	Melting point	Melting unit	Alloy type	Remarks
A) Covering fluxes							
Coveral 65	White	2-3%	Pasty	500^{o} C	Crucible	Alloy containing 2-6% Mg & hyper eutectic Al-Si alloys	Sodium free

B) Covering & drossing fluxes							
Coveral 5	White	1%	Dry	--	Reverberatory rotary & large electric furnace Crucible and electric	Ill alloys except those containing more than 1% Mg	Also prevents furnace wall build-up
Coveral 11	Pink	1%	Dry	--	Crucible and bale out	-do-	General purpose grade
Coveral 66	Yellow	2-3%	Dry	--		Alloys containing 1-10% Mg & Hyper eutectic Al-Si alloys.	Sodium free
C) Modifying fluxes							
Coveral 29A	White	1.5%	Liquid	780° C	Crucible & bale out	Al-Si alloys	For metal temp. Betwn. 790-800° C
Coveral 36A	Blue	3%	Liquid	670° C	Crucible & bale out	Al-Si alloys	Temp. Betwn. 740-750° C
Coveral 58	White	3%	Liquid	645° C	-do-	-do-	Temp betwn. 710-720° C
D) Recovering flux							
Coveral 56	White	5-10%	Liquid	635° C	--	--	For recovery of aluminium from hot drosses in a dross bogie
E) Reclaiming flux							
Coveral 57	Yellow	2-10%	Liquid	550° C	Reverberatory crucible rotary & low frequency induction	Alloys except those containing high Mg	Melting of Turnings, borings
F) Furnace cleaning flux							
Coveral 88	White	Depends on furnace size	--	--	Reverberatory & rotary type	--	Removal of oxide build upon furnace wall.

* Approximate application 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.

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