

GENERAL DESCRIPTION OF GILSONITE IN FOUNDRY

GILSONITE ADDITIVE FOR FOUNDRY SAND PREBLEND PROVIDING REDUCED SMOKE AND OTHER EMISSIONS, THE ADDITIVE COMPRISING A MIXTURE OF ONE PART IRON OXIDE, ONE PART OF A HIGHLY VOLATILE CARBONACEOUS MATERIAL SUCH AS GILSONITE, AND FOUR PARTS OF METALLURGICAL COKE. THE ADDITIVE IS USED AS ONE QUARTER OF THE FOUNDRY SAND PREBLEND, THE OTHER THREE QUARTERS CONSISTING ESSENTIALLY OF CLAYS.

GILSONITE IN FOUNDRY

PREBLEND COMPOSITIONS OF BINDERS AND OTHER PROPRIETARY MATERIALS USED TO MAKE MOLDS AND CORES FOR PRODUCING CASTINGS ARE WELL KNOWN. TYPICAL FOUNDRY COMPOSITIONS INCLUDE INGREDIENTS SUCH AS SODIUM (WESTERN) BENTONITE, CALCIUM (SOUTHERN) BENTONITE, FIRECLAY (KAOLINITE), SEA COAL, A HIGHLY VOLATILE CARBONACEOUS MATERIAL SUCH AS GILSONITE, CEREAL, CELLULOSE AND/OR ANY OF THE OTHER COMMONLY USED FOUNDRY SAND ADDITIVES.

FOUNDRY SANDS, WHICH ARE COMPOSED MAINLY OF SILICA SAND WITH CLAYS AND CARBONACEOUS MATERIALS MIXED AND MULLED TOGETHER, WHEN COMPACTED TO FORM MOLDS, RESIST PENETRATION BY MOLTEN METAL AND THE TENDENCY OF THE MOLDING SAND TO FUSE OR STICK TO THE CASTING. ONE OF THE PROBLEMS ASSOCIATED WITH THE KNOWN PREBLEND CARBONACEOUS ADDITIVES DISCUSSED ABOVE, PARTICULARLY BELIEVED DUE TO SEACOAL, IS THE SMOKE AND OTHER EMISSIONS THAT CAN BE ENVIRONMENTAL HAZARDOUS. THESE GASES ARE RELEASED WHEN THE MATERIALS ARE HEATED IN AN OXYGEN FREE ATMOSPHERE.

RATIO OF GILSONITE IN FOUNDRY

ALTHOUGH THE RATIO OF ONE PART IRON OXIDE, ONE PART OF A HIGHLY VOLATILE CARBONACEOUS MATERIAL SUCH AS GILSONITE AND FOUR PARTS OF METALLURGICAL COKE IN THE ADDITIVE IS A PREFERRED RATIO TO REDUCE SMOKE AND/OR EMISSIONS AND GIVE PROPER FINISH TO THE CASTINGS, SOME VARIATIONS MAY BE PERMISSIBLE. WHEN THE ADDITIVE IS COMBINED WITH THE CLAYS, THE NOMINAL PERCENTAGES BY WEIGHT OF THE PREBLEND WOULD BE AROUND 4% IRON OXIDE, 4% GILSONITE AND 16% METALLURGICAL COKE, THE BALANCE BEING ESSENTIALLY 70% TO 75% CLAYS AND SMALL AMOUNTS OF OTHER MATERIALS. IN THE CASE OF GREATER THAN NORMAL AMOUNTS OF SMOKE AND/OR EMISSIONS, THE AMOUNT OF THE IRON OXIDE CAN BE INCREASED IN STEPS OF 0.5% OF THE PREBLEND WITH A SIMILAR REDUCTION IN THE METALLURGICAL COKE. IN THE CASE OF POOR SHAKEOUT PEEL OR CASTING SURFACE PROBLEMS THE HIGHLY VOLATILE CARBONACEOUS MATERIAL SUCH AS GILSONITE CAN BE INCREASED IN 0.5% STEPS WITH A SIMILAR REDUCTION IN THE CLAY PORTION OF THE PREBLEND. THE PERMISSIBLE RANGES OF CONSTITUENTS BEYOND WHICH THE ADDITIVE WOULD BE LESS EFFECTIVE, EXPRESSED AS A PERCENTAGE BY WEIGHT OF THE PREBLEND, ARE 2%-6% IRON OXIDE, 6%-2% GILSONITE, AND 12%-18% METALLURGICAL COKE.

PACKING OF FOUNDRY GILSONITE “NATURAL ASPHALT” LUMP AND POWDER FORM “MICRONIZED”

GILSONITE IN LUMP FORM LIKE ROCK PACKED IN 500~1000KG JUMBO BAG
 GILSONITE 200 MESH PACKED IN 500~1000KG JUMBO BAG
 GILSONITE 300 MESH PACKED IN 500~1000KG JUMBO BAG
 GILSONITE 30-40 MESH PACKED IN 500~1000KG JUMBO BAG
 GILSONITE 100 MESH PACKED IN 500~1000KG JUMBO BAG
 GILSONITE 300 MESH PACKED IN 25KG PP BAG
 GILSONITE 200 MESH PACKED 25KG MULTI PAPER BAG
 GILSONITE 200 MESH PACKED 50LBS MULTI PAPER BAG
 GILSONITE 30-40 MESH PACKED PP BAG ON PALLET
 BULK ON VESSEL



SPECIFICATION OF GILSONITE

NO	TEST	RESULT	TEST METHOD
1	ASH CONTENT,WT%	10	ASTM-D3174
2	MOISTURE CONTENT,WT%	0.5%	ASTM-D3173
3	VOLATILE MATTER,WT%	64	ASTM-D3175
5	SOLUBILITY IS CS2,WT%	78	ASTM-D4
6	SPECIFIC GRAVITY @25 C	1.11	ASTM-D3289
7	NORMAL HEPTHAN INSOLUBLES,WT%	79	ASTM-D3279
8	COLOR IS MASS	BLACK	-----
9	COLOR IN STREAK OR POWDER	BLACK	-----
10	SOFTENING POINT,C	150	ASTM-D36
11	PENETRATION @25C	0	ASTM-D5
ELEMENT ANALYSIS			
1	CARBON,WT%	78	ASTM-D5291
2	HYDROGEN,WT%	7.1	ASTM-D5291
3	NITROGEN,WT%	3.67	ASTM-D5291
4	OXYGEN,WT%	3.1	ASTM-D5291
5	SULPHURE,WT%	2	LECO(S)ANALYZER

OUR APPROVALS

