

DRAWMETS

DRAWMET 15 is a refined lubricating oil blended with fatty oil. The fatty oil gives the wetting ability and helps to improve the finish of the drawn wire. This oil based wire drawing fluid because of its lubricating property improves the life of the die through which the wire is drawn. It also acts as a coolant to carry away the heat generated due to friction and metal deformation which takes place during drawing the wire. The product is stable and does not stain the drawn wire.

Application : The product is used as drawing lubricant in Aluminum Wire Drawing Process and is applied by spray or jet on the dies through which the wire is drawn. It can also be applied by dip method where the dies remain immersed in the lubricant.

DRAWMET 66

It is a dark color product consisting of a blend of refined high viscosity petroleum oil and a special additive to withstand high temperatures encountered in the die forging operations. It is easily applied by spray

	Drawmet 15	Drawmet 66
Appearance	Clear	Dark
Viscosity @ 40 C, cSt	295	225
Copper strip corrosion @ 100 C for 3 hrs, Max	1	
Density @ 29.5 C (Avg)	0.888	0.925
Flash Point, COC, C, Min	254	182
Saponification No mg KOH/gm	17-21	2-4

DRAWMET 22 AND DRAWMET 44

These products are so formulated to provide optimum performance in cold drawing of ferrous and non-ferrous metals. They are excellent lubricants for the dies and blank and effectively prevent metal pick up during the drawing operation. They adhere firmly to metal surfaces and are easily removed by usual alkali cleaning methods. They are chemically stable and non-corrosive in behavior.

DRAWMET 22 is a cream colored compound solid paste containing inert fillers that impart the film strength required in drawing carbon and alloy steels. This product can be suitably diluted with water or mineral oil such as PALEX 100 before application.

DRAWMET 44 is a cream yellow, sulfur free, water soluble paste for 'dry on' or emulsion application. It is specially balanced mixture of selected soap and fat. Before application this product is normally diluted with water.

APPLICATION :

DRAWMET 22 can be used as such or diluted suitably with water or mineral oil to meet the specific requirements. It is used for stamping and deep drawing of most metals. It can also be used as drawing compound for carbon steel or difficult non-ferrous metals. The product may be applied by swabbing or brushing with the work before each formation.

DRAWMET 44 is used for wire drawing, tube drawing, deep drawing and similar operations. It is usually mixed with water before use. The metal working operation is performed either by using this emulsion/mixture with water and in some cases of tube drawing the product is used allowing the water in it dry after application to form a residual solid film on the work.

Generally, in copper and brass drawing 5%, 2% and 1% solutions of DRAWMET 44 in water are used for rod reduction, intermediate and fine wire drawing respectively. The solutions are continuously circulated over the dies.

For tube drawing of copper, brass and carbon steel, DRAWMET 44 is used. The solution of DRAWMET 44 in water is continuously circulated over the dies and through the mandrel. The tubes in bundles are dipped in the solution of DRAWMET 44 and dried before drawing.

DRAWMET 44 is used successfully for deep drawing of carbon steel for LPG cylinders. A mixture of one part of DRAWMET 44 and three parts of water is suitable for this severe drawing operations. The mixture is spread on the circular blanks with either an ordinary paint roller or with multiple roller device.

DRAWMET 22 and 44 are used depending upon the properties of the metal or alloy being drawn, severity of the drawing operation, design of the drawing equipment to permit use of oil/water miscible pastes and alkaline wash cleaning treatments for the drawn metal or alloy. The following table gives the typical applications of DRAWMET 22 and 44 for cold drawing of various metals and alloys and the methods for using these drawing compounds for lubrication on the metal forming equipment.

DRAWMET 22 & DRAWMET 44

APPLICATIONS

Metal or Alloy drawn	Severity of drawing	Drawing compd.for use	Method of application
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STAMPING AND FORMING (Cold)

Brass & Copper	Medium Heavy	DRAWMET 44	Dip, swab or spray Dip or swab
Aluminum & Aluminum Alloys	Medium Heavy	DRAWMET 44 DRAWMET 22	Dip, swab or spray Dip or swab
Cupro-Nickel Monel & Inconel	Medium Heavy	DRAWMET 44 DRAWMET 22	Dip, swab or spray Dip or swab
Carbon Steel	Medium Heavy	DRAWMET 44 DRAWMET 22	Dip, swab or spray Dip or swab
Stainless & Alloys Steels	Light	DRAWMET 44	Dip, swab or spray

WIRE DRAWING

Brass & Copper	General	DRAWMET 44	Circulating pump
Cupro-Neckel Alloys	General	DRAWMET 22	Ciurculating pump
Carbon Steel	General	DRAWMET 44	Circulating pump
Stainless & Alloys Steels	General	DRAWMET 22	Circulating pump

Metal or Alloy drawn	Severity of drawing	Drawing compd.for use	Method of application
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TUBE DRAWING

Brass & Copper	Medium	DRAWMET 44	Circulating pump or dip tubes and dry before drawing
Cupro-Nickel Alloys	General	DRAWMET 22	Swab or circulating pump
Carbon Steel	Light	DRAWMET 44	Dip tubes and dry before drawing
	Medium	DRAWMET 22	Circulating pump
Stainless & Alloys Steel	Medium	DRAWMET 22	Circulating pump

TUBE BENDING (Cold)

Brass & Copper	Medium	DRAWMET 44	Dip, swab or spray
Alloys Steel & Aluminum	Medium	DRAWMET 22	Dip or swab

DRAWMET 44

GENERAL RECOMMENDATIONS FOR COPPER DRAWING

FOR COARSE DRAWING

Red stock to about 0.10" diameter (i.e. AWG 00 or heavier to AWG 10). Use 13 to 15% DRAWMET 44 in water.

FOR INTERMEDIATE DRAWING

About 0.15" to about 0.04" diameter (i.e. AWG 6 to AWG 18). Use about 8% DRAWMET 44 in water.

FOR FINE DRAWING

About 0.05 to 0.01" or finer (i.e. AWG 16 to AWG 30 or finer) use 3 to 5% DRAWMET 44 in water.

Above refers to average drawing conditions i.e. 3000 - 5000 ft. Per minute drawing speeds on final wire.

For lower or higher speeds, concentration of DRAWMET 44 should be increased or decreased as needed to obtain satisfactory surface finish.

For overlapping drawings ranges, use DRAWMET 44 content favoring the heavier operation.

I.e. when drawing from 0.13" to 0.02" use 7 - 8% DRAWMET 44 in water.

A TYPICAL OPERATION

0.365" red stock to 0.04" diameter - 13% DRAWMET 44 in water

0.13" to 0.02" wire - 6% DRAWMET 44 in water.