

SYNSPAR GP®

Dye and Perfume Free Synthetic Machining and Grinding Fluid

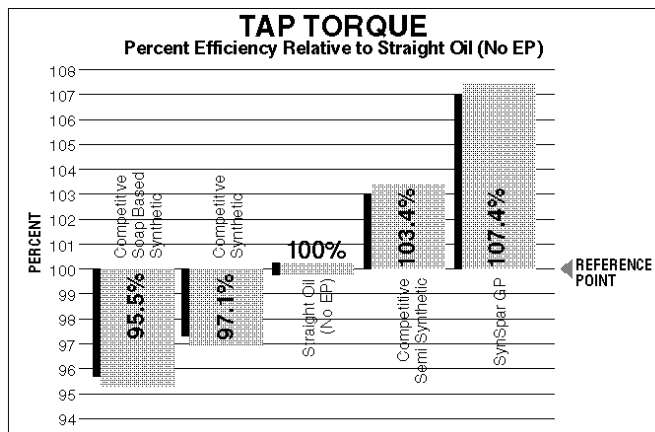
For many years, the Metal working industry has wanted a synthetic metal working fluid to be used for drilling, reaming, boring, tapping, milling, turning, centerless grinding and Blanchard grinding. In effect they have wanted a fluid to handle any operation in their facility... one that is without the use of chlorine, sulfur, oil, waxes or fatty materials; one that is foam free. In addition, they want this fluid to be safe for the operators and the environment, have a long sump life, leave a non-sticky, tacky residue and provide corrosion and rust protection for a multitude of metals. Spartan Chemical has developed a product to meet all of these needs...SynSpar GP!

PRODUCT DESCRIPTION:

SynSpar GP is a medium to heavy duty, dye, perfume and oil free multi-function synthetic coolant for use on ferrous and nonferrous metals. SynSpar GP offers long term in-tank stability providing longevity and machine performance.

SYNSPAR GP OFFERS THE FOLLOWING ADVANTAGES:

Extends tool life, wheel life and improves surface finish. Incorporating a unique blend of raw materials into the formulation of SynSpar GP, provides excellent tool life and surface finish qualities previously known only to chlorine and/or sulfur containing products. Tool steels, carbon steel, stainless steel, copper, brass, cast iron and some of the space age alloy type metals have all been run with SynSpar.



The Tap Torque Test was designed to be an indication of the machinability received from a water dilutable coolant.

The graph shows SynSpar GP outperforms competitive soap-based synthetics, competitive polymer type synthetics, a very popular semisynthetic, as well as the straight oil without EP properties used as a reference point. The basis of this test is that pre-drilled holes in a specified metal are tapped using a straight, non-EP oil as a reference oil.

The same designation of tap is used in the same metal to tap an equal number of holes with the test fluids. In this case, three competitive fluids and SynSpar GP. The efficiency is then compared measured by tap life, percent thread, quality of the thread and the effort taken to thread the holes as compared to the referenced oil. In this case, SynSpar GP had a 107.4% efficiency rating as compared against the straight oil. This would translate into tremendous cost savings to customers in any drilling, tapping or other machining operations as far as tool life, lack of scrap, thread quality, surface finish and the amount of energy required to cut that particular metal. This type of percent efficiency has been uncommon in the past with any water-dilutable coolant without the use of chlorine and/or sulfur.

MULTI METAL SAFE:

SynSpar GP contains state of the art corrosion inhibitors which provide customers corrosion and rust protection for all metals.

REJECTS TRAMP OIL:

Using a select blend of raw materials, SynSpar was developed to reject all forms of tramp oil including water miscible tramp oils so that they quickly float to the top for ease of removal by skimming, centrifugation, coalescing, ultrafiltration or by the use of a simple oil wheel. By removing these tramp oils, the primary home and nutrition source of the bacteria, mold, fungus and yeast that commonly grow in coolants is reduced.

COMPLETELY WATER RESOLUBLE RESIDUES:

SynSpar GP leaves a completely water resolvable thin film on the machine and parts for corrosion protection. It does not leave any sticky, tacky or concrete like residue to tie up the machine which creates excessive maintenance costs. Parts are easily cleaned with any water-based parts

washing compound or even just plain water. However, if the film is left on the parts, it provides excellent inside storage protection for two to three months under normal conditions.

RESISTANCE TO THE GROWTH OF BACTERIA, FUNGUS, MOLD AND YEAST:

Formulated with high quality bacterial resistant raw materials as well as state-of-the-art odor killing components, SynSpar GP provides odor free operations as long as concentration is controlled and tramp oil is maintained at a minimum level.

Everyone is familiar with the odor commonly referred to as Monday morning stink of a rancid coolant. However, odor is just one of the problems caused by microorganisms in a water-based coolant. Microorganisms virtually consume wetting agents, rust inhibitors, lubricants and other important ingredients in a coolant during their metabolism functions. As their numbers increase, the coolant tends to lose all functionality in the machine. Once a count of 10^6 - 10^7 is reached, bacteria, fungus, mold, and/or yeast have virtually consumed a large portion of most of the more important ingredients in a coolant. Bacteria also secrete organic acids in their metabolism which reduce the pH, causes rust and corrosion on the machine and parts and can lead to skin irritation in some cases. Some types of bacteria like pseudomonas are slime producing bacteria and can leave a sticky tacky residue on machine and

parts. This residue can build up to the point of tying up the machine and making it very difficult to maintain size and tolerance. With the excellent longevity of SynSpar GP, this residue is virtually eliminated.

NO FOAM:

One of the major problems of most synthetic fluids designed for grinding and machining on the market today, is their potential for foam. By incorporating **non-foaming** lubricants and corrosion inhibitors, SynSpar GP does not cause any foam build up. However, contamination entering the coolant may cause foaming.

OPERATOR AND ENVIRONMENT FRIENDLY:

SynSpar GP was formulated to be as friendly to the operators and safe on the environment as chemically possible and still provides the excellent functions associated with this product.

It is mild, does not irritate skin and eliminates nitrosamine formation. Operators like its clarity and odor free characteristics and the excellent visibility of the work piece, even in hard water.

With operator's safety and comfort being one of the utmost criteria in today's metal working facilities, SynSpar is a perfect product for most metal working operations. It is odorless, virtually water clear even in hard water and each raw material has been thoroughly tested for oral, dermal and inhalation toxicity. This enables the operators to work in a clean, safe, odor free environment.

EXCELLENT FILTERABILITY:

SynSpar GP is easily filtered with diatomaceous earth, positive media filtration, cyclonic, magnetic, and any settling type filtration units. By constantly filtering coolant, recirculation of fines, mud build up and scratching of the surface of the freshly machined and/or ground part are eliminated.

RECYCLING: HIGHLY RECOMMENDED:

One of the major expenses in any metal working operation is the trade waste involved in getting rid of spent coolant. SynSpar GP, with its excellent bacterial resistance, is ideal for recycling, thus greatly reducing the amount of dollars spent on trade waste of spent coolant.

DYED SYNSPAR GP:

For those customers who prefer dyed synthetic coolants, SynSpar GP is also available in blue.

DIRECTIONS FOR USE:

A concentrate designed to be diluted with water, SynSpar GP forms a clear solution in a wide range of water temperatures and hardness.

1. To insure a uniform solution, mix SynSpar GP with water at the appropriate concentrations in a separate container. (Refer to Recommended Starting Concentration Chart.)
2. Agitate solution until thoroughly mixed.
3. Add the mixed coolant to the cleaned sump.
4. Makeup: When adding makeup to the machine, add SynSpar GP at 1/2 to 2/3 the concentration desired in the machine. For example, startup of 10:1 requires 20:1 makeup. Always add diluted solution as makeup; never plain water.

NOTE: To prevent any white discoloration when using SynSpar GP on galvanized parts, be sure concentration is 20:1 or stronger.

TECHNICAL DATA:

Viscosity -- water thin @ 24°C/75°F

Specific Gravity -- 1.03 @ 24°C/75°F

pH (Concentrate) -- 8.0 to 9.0

pH (10% solution) -- 8.0 to 8.5

Density @ 24°C/75°F -- 8.57 lbs./gal.

Flash Point (COC) -- None

Solubility -- Completely soluble in all proportions with hot or cold water.

Storage Stability --

- a. Shelf @ 24°C/75°F -- one year minimum
- b. Accelerated @ 49°C/120°F -- 60 days minimum
- c. Freeze/Thaw -- Product will withstand three freeze/thaw cycles.

RECOMMENDED STARTING CONCENTRATION
(parts water to parts SynSpar GP)

	GRAY CAST IRON	DUCTILE IRON	BRASS ALLOY S	MILD STEEL	STAINLESS STEEL	ALUMINUM ALLOYS	COPPER ALLOYS
GENERAL TURNING	20-1	20-1	20-1	20-1	15 to 20-1	20-1	20-1
BORING	15-1	15-1	20-1	20-1	15-1	15-1	15-1
PLANING SPOT FACING	20-1	20-1	20-1	20-1	15-1	15-1	15-1
GENERAL MILLING	20-1	20-1	20-1	20-1	15 to 20-1	20-1	20-1
DRILLING	10 to 15-1	10-1	10-1	10-1	10-1	10-1	10-1
TAPPING/REAMING	10-1	10-1		10-1	10-1		
SURFACE GRINDING	20-1	20-1	20-1	20-1	20-1	20-1	20-1
OD & FINISH GRINDING	20-1	20-1	20-1	20-1	20-1	20-1	20-1
ID GRINDING	20-1	20-1	20-1	20-1	20-1	20-1	20-1
CYLINDRICAL GRINDING	20-1	20-1	20-1	20-1	20-1	20-1	20-1

Formula for Determining Total Volume by Gallons $\frac{\text{Width} \times \text{Length} \times \text{Height (in inches)}}{231} = \frac{\text{Total Sump Capacity}}{\text{in Gallons}}$	
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SynSpar GP Dilution Ratio vs. Refractive Index*	
5-1	4.5
10-1	2.5
15-1	1.9
20-1	1.3
25-1	1.0
30-1	0.9
35-1	0.8
40-1	0.7
50-1	0.6

*American Instrument Model 10440 Industrial Fluid Tester

PACKAGING:

SynSpar GP is available in tank wagons; 330-gallon disposable totes; 275-gallon totes; recyclable HDPE (High Density Polyethylene) 55-gallon drums and 5-gallon pails. Label copy is available in both English and Spanish. Secondary labels are also available.

Be sure to read all Directions, Precautionary and First Aid Statements on product labels before use of this or any IPG/Spartan product. Material Safety Data Sheets for all IPG/Spartan products are available from your authorized IPG/Spartan distributor.

GUARANTEE:

Spartan's modern manufacturing and laboratory control insure uniform quality. If dissatisfied with performance of product, any unused portion may be returned for credit within one year of the date of manufacture. Use product as directed and read all precautionary statements.