NIPPON GREASE CO.,LTD.
Toyosaki Bldg.,
18-21 Chayamachi Kita-ku Osaka〒530
TEL(06)373-0171 FAX(06)373-0174

HIGH SPEED QUENCH OIL 1070

High Speed Quench Oil 1070 in general, imported highspeed quench oils are satisfactory in performance but are rather defective in sludge formation and not enough in stability. Our highspeed quench oil 1070 is the product, while retaining all good aspects and proved to be a multi purpose quench oil, superior both in performance and stability and even applicable for those from salt bath.

ADVANTAGE OF HIGH SPEED QUENCH OIL 1070

1. The oil has the highest it value thereby specially fit for quenching of carbon steel.
2. Can be used for quenching of items from salt or cyanide bath, without harmful effect to heat treating oil.
3. Very low in sludge formation and high in thermal stability.
4. Low viscosity, drag out of the oil during the work is quite few, result in low replenishing rate. It can be said to be a cost saving product.
5. Odorless and has fine (green) color.
6. While in use, this oil remain stable in performance and properties and durable for long service.

TYPICAL PROPERTIES

Treated Items	Grade of Tool
Carburized steel made tools	SK
Taps and Dies	SKS
Blades of plane and like items	SK SKU
Bearing Balls	SUJ
Carbon steel for machinery's structure and its parts of alloy steel, both of which are not easy to treat.	SCr SCM
Hold for cold working, wire drawing dies, screw rollers and conventional rollers.	SKS SKD
Gears (*by high frequency induction heated*)	S55C
Bright quenching from salt bath heating	SUJ & Others
Quenching of inner side of small bored items.	---

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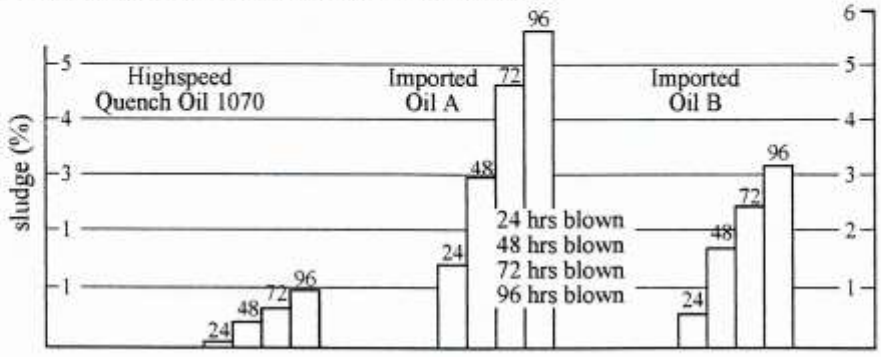
DATA :

1. Specification and Typical analytical data of HIGHSPEED QUENCH OIL 1070 (JIS K2242-1989)

Test Items		Specifications	Typical Data
Reaction		Neutral	Neutral
Viscosity	40 °C cSt	14.2 - 20.0	17.31
	50 °C cSt	9.3 - 15.0	12.25
Flash Point (C.O.C) °C		min. 170	170
Fire Point °C		min. 190	202
Pour Point °C		max. -5	-10
Water Content wt %		max. 0.05	0.008
Cooling Performance	Characteristic Temp. °C	min. 580	600
	Cooling Time 800 - 400 °C (sec)	max. 4.0	2.80
H Value	1/cm	Report	0.153
Stability	Viscosity Ratio	max. 1.6	1.07
	Increment of Carbon Residue (%)	max. 2.0	0.48

2. Comparison of HIGHSPEED QUENCH OIL 1070 and imported quench oil about sludge formation after INDIANA OXIDATION TEST at 170 °C



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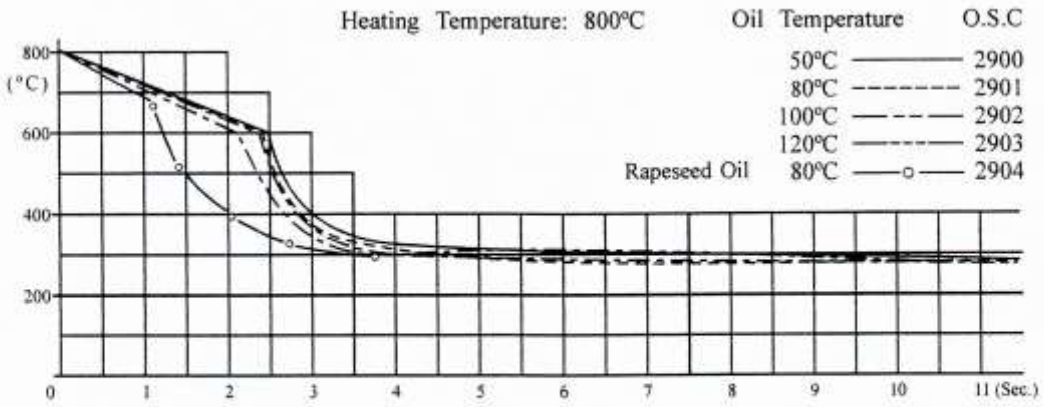
3. Cooling curves of HIGHSPEED QUENCH OIL 1070 at variable temperatures.



(D) ACTUAL PERFORMANCE DATA

1) Kind of steel	S45C (9 mmØ x 75 mm – 50 mm Ø x 75 mm)
2) Furnace used	Chugairo Kogyo's Junior all case furnace
3) Heating temperature	850 °C
4) Oil temperature	80 °C
5) Oil volume	1000 Liters
6) Oil used	Highspeed Quench Oil 1070

Diameter (mm) Length (mm)	Heat treated to hardness (Average) HRc
9 x 75	61,1
12 x 75	60,9
16 x 75	59,5
19 x 75	58,5 56,9
22 x 75	57,2 56,8
25 x 75	55,2
28 x 75	536
32 x 75	52,8
36 x 75	51,0
40 x 75	49,2
44 x 75	48,8
50 x 75	48,2

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(E) Evaluation report by Sun Oil Co. , USA, (summary)

The quenching speed of Sunquench 1070 equals or exceeds that of any competitive oil which has been tested in our Research and Development Laboratory. According to tests conducted by our research personnel, this oil is approximately 10% faster than Sunquench 78.

1. Has a fast quenching speed.
2. Has good oxidation stability. Contains oxidation inhibitor.
3. Will have no preferential drag out of additives.
4. Will have long life with uniform results.
5. Can be used for quenching from salt or cyanide baths, without harmful effect to the oil.
6. Has a minimum drag out or oil carry off on the work.
7. Has good color and no odor.

Sunquench 1021 is recommended for hot oil or modified mar-quenching work in the 200/300°F temperature range. We strongly urge that you do not utilize this oil in operation where in the temperature is in excess of 300 °F. It is our firm belief that heat treaters will find they can get equal or better distortion control with Sunquench 1021 at temperatures of 250/275 °F than they can get with many regular mar-quenching oils at temperatures of 350/400°F. For your information, we wish to provide you with the following average analysis of these two new oils.

	Sunquenching 1070	Sunquenching 1021
Gravity, API	32.5	30,1
Flash Point °F min	340	420
Fire Point °F min	385	475
Viscosity, SUS at 100 °F	85-95	250-265
Pour Point °F	10	10
Color	Green	Green
Sun Hot wire Test	40 amps	36 amps
GM Magnetic Quenchometer at 130 °F	9.8 sec	20,0 at 250°F
Modified Springfield Armory Test at 100 °F	44.7 %	44,8 % at 250°F