

## CHLOREZ® RESIN GRADES (TYPICAL PROPERTIES)

Property	Chlorez 700	Chlorez 700-S	Chlorez 760	Chlorez 700-DD	Chlorez 700-DF	Chlorez 700-SS	Chlorez 700-SSNP
Physical Form	White Powder	White Powder	White Powder	White Powder	White Flake	White Powder	White Powder
Color, APHA (15g in 100 ml Toluene)	150	100	100	100	100	100	60
Chlorine Content % By Weight ASTM E 442	71.5	71.5	74	71.5	71.5	71.5	71.5
Specific Gravity, Solids, 25°C	1.6	1.6	1.7	1.6	1.6	1.6	1.6
Bulk Density, Pounds/Gallon	13.5	13.5	14.0	13.5		13.5	13.5
Particle Size, % Thru 50 Mesh	95%	95%	95%	95%	Flake	95%	95%
Volatiles	<0.1%	<0.1%	<0.1%	<0.1%	<0.1%	<0.1%	<0.1%
Softening Point (Ball and Ring Method, °C ASTM D-36)	103	103	160	103	103	115	120
Stability JQD Method - % HCl 4 Hrs @ 175°C	0.1	0.05	0.05	0.1	0.1	0.01	0.01

Chlorez products are tasteless and odorless chlorinated paraffin resins especially soluble in aromatic and chlorinated solvents. They have limited or no solubility in lower alcohols, glycols, glycerins, and water.

Chlorez is compatible with most commonly used resins, rubbers, plasticizers, waxes, and drying oils. Because of their very high active halogen content and low cost, Chlorez products find wide usage as flame retardant additives in coatings, inks, plastics, foams, adhesives, paper and fabrics.

**Chlorez 760** has a softening point of 160°C minimum. It has wide applications in olefins, styrenes, adhesives, wire and cable and many other flame retardant areas.

**Chlorez 700-DD** was developed for use in white coatings. It gives superior color stability compared to other chloroparaffins.

**Chlorez 700-DF** has the same properties as Chlorez 700, but in flake form. These flakes reduce house-keeping problems associated with handling powders.

**Chlorez 700-SS** was developed by using the best raw materials and the best chlorination technique and stabilization system. It has considerably improved thermal stability over other chlorinated paraffins. Applications include flame retarding polyethylene, polypropylene, polystyrene and other material needing good stability.

**Chlorez 700-SSNP** is an improved version of Chlorez 700-SS and is produced in Dover's state-of-the-art new facility. It has the best color and thermal stability of any Chlorez grade, and is recommended for use in polyolefins, unsaturated polyesters, polystyrenes and materials requiring thermal stability.

## DOVERSPERSE® GRADES (TYPICAL PROPERTIES)

Property	DOVERSPERSE A-1	DOVERSPERSE 3
Physical Form	Water Dispersion of Chlorez 700	Water Emulsion of Paroil 170HV
Color	Cream White	Cream White
Solids, % By Weight	65	66.5
Chlorine content % By Weight of Disp. or Emul.	45	45
Specific Gravity of Solids @ 25°C	1.600	1.540
Density, Wet Pounds/Gallon	11.0	11.3
Viscosity #6 Spindle, 10 RPM 25°C Poise	—	225
#6 Spindle, 100 RPM 25°C Poise	—	37.5
#4 Spindle, 10 RPM 25°C Poise	63	—
NS Hegman Units	4	—
pH	8.4	7

Both Doversperse A-1 and Doversperse 3 typically contain 45% available chlorine for maximum flame retardant efficiency.

Because of their non-ionic base they find application in both cationic and anionic emulsion systems.

In addition to their flame retardant contribution they improve adhesion, increase chemical and water resistance, and allow the user to formulate aqueous systems rather than solvent systems.

Doversperse A-1 is recommended if increased hardness is required. Use Doversperse 3 for plasticizing and to increase tackiness.

Application areas include adhesives, rubber coatings, inks, carpet backings, paper and fabric coatings.

**DOVER** Chemical Corporation  
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MARKETED BY  
**HARWICK STANDARD  
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**SPECIALTY GRADES OF**

# CHLORINATED PARAFFINS

**PAROIL® LIQUID GRADES**

**PAROIL® NON-REPORTABLE\* FORMULAS**

**PAROIL® CORROSION-INHIBITED  
FORMULAS**

**CHLOREZ® RESIN GRADES**

**DOVERSPERSE® WATER DISPERSED  
AND EMULSIFIED GRADES**



ISO  
9001  
Certified



Responsible Care  
A Public Commitment



QSR-130



# CHLORINATED PARAFFINS TYPICAL ANALYSIS

PROPERTY	PAROIL 10	CHLORO-FLO 40	CHLORO-FLO 42	PAROIL 140	PAROIL 45	PAROIL 142A	PAROIL 145A	PAROIL 50	PAROIL 152	PAROIL 150A	PAROIL 150LVA	PAROIL 1057	PAROIL 1061	PAROIL 57/61	PAROIL 1650	PAROIL 170T	PAROIL 170LV	PAROIL 170HV
Distinguishing Characteristics	Stable, lowest vis., high solubility	Stable, low vis., excellent solubility	Stable, low vis., excellent solubility	Stable, low volatility, good solubility	Good color, low vis., ex. stability	Stable, med. vis., good solubility	Stable, med. vis., good solubility	Low vis., high chlorine	Very stable, very low volatility, good solubility	Stable, very high vis., med. solubility	Med. to high vis.	Low vis., ex. solubility	High chlorine, ex. stability	Blend of 1057 and 1061	Med. vis., ex. stability	High chlorine, lower vis. than LV.	High vis., high chlorine	Very high vis., high chlorine
Color, Typical, Gardner 1933 Std.	1	2	2	1	1	1	3	1	1	1	2	1	1	1	1	3	2	2
Chlorine Content % by Weight	40	39	40	42	45	45	46	50	51	50	48	57	61 min	59	62	70	67	70
Specific Gravity @ 50°/25°C @ 25°/25°C	1.060 1.080	1.085 1.100	1.100 1.120	1.150 1.170	1.160 1.180	1.195 1.215	1.200 1.220	1.250 1.270	1.250 1.270	1.250 1.270	1.220 1.240	1.300 1.320	1.370 1.390	1.335 1.355	1.390 1.410	1.510 1.530	1.500 1.520	1.520 1.540
Pounds Per Gallon	8.9	9.0	9.3	9.6	9.6	10.0	10.0	10.3	10.3	10.3	10.3	10.9	11.4	11.1	11.8	12.5	12.5	12.7
Viscosity: SUS @ 210°F	33	63	90	150	50	200	230	40	70	450	250	55	72	63	90	75	350	530
SUS @ 100°F	55	560	1300	3900	390	8000	10500	190	1750	30000	14000	1100	4000	1700	7000	5000	>10 <sup>7</sup>	>10 <sup>9</sup>
Poises @ 77°F	0.2	3.0	8	29	2-3	70	95	1.1	15	375	130	13	60	20	130	70	>10 <sup>7</sup>	>10 <sup>7</sup>
Volatility, % Loss 4 hrs @ 150°C 24 hrs @ 100°C	60 40	5.0 3.0	2.0 0.5	1.5 0.8	7.0 1.5	1.5 0.8	1.5 0.8	25.0 15.0	3.5 0.9	1.5 0.7	1.4 1.0	18 6.0	11 3.0	14 4.0	6.0 2.0	15 9	5.2 0.6	1.0 0.1
Stability: JQD Method % HCl, 4 Hrs @ 175°C	0.2	0.3	0.3	0.3	0.2	0.3	0.4	0.3	0.2	0.3	0.25	0.25	0.25	0.25	0.25	0.4	0.25	0.25
Flash Point °F (Cleveland Open Cup)	155	>450	>450	>450	>400	>450	>450	>400	>450	>450	>450	>450	>450	>450	>450	>450	>450	>450
<b>300 SERIES CORROSION-INHIBITED FORMULAS</b>	<b>310</b>	<b>CF340</b>	<b>CF342</b>	<b>340</b>	<b>3045</b>	<b>342A</b>	<b>345A</b>	<b>3050</b>	<b>352</b>	<b>350A</b>	<b>350LVA</b>	<b>3057</b>	<b>3061</b>	<b>357/61</b>	<b>3650</b>	<b>370T</b>	<b>370LV</b>	<b>370HV</b>

**NON-REPORTABLE (NR) FORMULAS AVAILABLE IN MOST GRADES.**

**SPECIAL EMULSIFIABLE, WATER DISPERSED AND WATER EMULSIFIED GRADES ALSO AVAILABLE.**

UPON REQUEST, MATERIAL SAFETY DATA SHEETS, PREPARED IN COMPLIANCE WITH CFR 29-1910.1200 HAZARD COMMUNICATION, ARE AVAILABLE.

PLEASE SEE REVERSE SIDE FOR:

- CHLOREZ - 70% RESINOUS GRADES.
- DOVERSPERSE - RESINOUS WATER DISPERSION AND LIQUID EMULSION GRADES.

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Please Note: These typical analyses are representative of current production. They are subject to change without notice.

Non-reportable refers to the Toxic Release Inventory (TRI), Section 313, Form R.