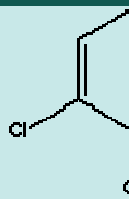
ORTHO DICHLOROBENZENE



PRODUCT IDENTIFICATION	
CAS NO.	95-50-1
EINECS NO.	202-425-9
FORMULA	$C_6H_4Cl_2$
MOL WT.	147.00
HS CODE	2903.61
TOXICITY	Oral rat LD50: 500 mg/kg
SYNONYMS	1,2-Dichlorobenzene; o-Dichlorobenzol; ODCB; Chloroden; 1,2-Dichloorbenzeen (Dutch); 1,2-Dichlor-benzol (German); 1,2-Diclorobenzene (Italian); o-Phenylenedichloride;Dilantin DB; Dowtherm E; Dizene; DCB;
DERIVATION	
CLASSIFICATION	

PHYSICAL AND CHEMICAL PROPERTIES	
PHYSICAL STATE	Colorless to yellowish liquid with Aromatic odor.
MELTING POINT	-17.6 C
BOILING POINT	180 C
SPECIFIC GRAVITY	1.30
SOLUBILITY IN WATER	Insoluble
SOLVENT SOLUBILITY	soluble in alcohol,benzene,diethyl ether
pH	neutral
VAPOR DENSITY	5.1
AUTOIGNITION	640 C
NFPA RATINGS	Health: 2; Flammability: 2; Reactivity: 0
REFRACTIVE INDEX	1.5510
FLASH POINT	66 C
STABILITY	Stable under ordinary conditions

GENERAL DESCRIPTION & APPLICATIONS

Dichlorobenzenes belong to the group of organic halogen compounds replacing two hydrogen atoms in benzene by chlorine atoms. There are three isomers; *ortho-dichlorobenzene*, colorless liquid boiling at 180 C, used as a solvent and chemical intermediate for dyes, pigment, agrochemicals and wide range of organic synthesis ; *meta-* , colorless liquid boiling at 172 C, used as a solvent and chemical intermediate; *para-* , white solid with a with a characteristic penetrating odor. It is used mainly as an insecticidal fumigant against moths a space deodorizer, as a general insecticide and fungicide on crops, and as a chemical intermediate for plastics, dyes, pharmaceuticals and other organic compounds. All they are insoluble in water and denser th water. They are prepared by the chlorination reaction of benzene in the presence of iron(III) chloride. (thechlorination under strong illumination and without iron(III) chloride leads to benzene hexachloride instea mono or polychlorobenzenes). The chlorination reaction leads to similar ratio of *ortho-* and *para-* dichlorobenzene, but small amount of the *meta* isomer is performed. The *ortho* and *para* isomers are separa by fractional freezing. While the *para* isomer crystallizes, the *ortho* isomer remains liquid. The *meta-* dichlorobenzene is prepared by heating and pressure with aluminum chloride. o-Dichlorobenzene is used as solvent and as a degreasing agent. It is used in removing sulfur from illuminating gas. It is an insecticide and fumigant. It is also used as a heat-transfer medium in extractive distillation process and solvent carrier in tolue diisocyanate manufacturing. It is also an chemical intermediate to manufacture dyes, agrochemicals, pharmaceuticals and other organic synthesis. It is used as an industrial odor controler, as a preservative for wood. Its application include formulations for motor oil additives, lubricants and paints.

SALES SPECIFICATION	
APPEARANCE	Colorless to yellowish liquid with Aromatic odor.

PURITY	99.0% min
ISOMER IMPURITY	1.0% max
ORGANIC IMPURITY	0.5% max
MOISTURE	0.5% MAX
BOILING POINT	171 - 181 C
SET POINT	-16 - -14 C
TRANSPORTATION	
PACKING	250kgs in Drum , Iso-Tank
HAZARD CLASS	6.1 (Packing group :III)
UN NO.	1591

GENERAL DESCRIPTION OF CHLOROBENENES

Chlorobenzenes are organic halogen compounds of cyclic aromatics formed by replacing hydrogen atoms benzene by 1-6 atoms of chlorine. There are 12 compounds of chlorobenzenes of mono-, three isomeric substances each of di-, tri-, and tetra-, as well as penta- and hexachlorobenzene.

- Monochlorobenzene (MCB, CAS RN: 108-90-7)
- 1,2-Dichlorobenzene (1,2-DCB, CAS RN: 95-50-1)
- 1,3-Dichlorobenzene (1,3-DCB, CAS RN: 541-73-1)
- 1,4-Dichlorobenzene (1,4-DCB, CAS RN: 106-46-7)
- 1,2,3-Trichlorobenzene (1,2,3-TCB, CAS RN: 87-61-6)
- 1,2,4-Trichlorobenzene (1,2,4-TCB, CAS RN: 120-82-1)
- 1,3,5-Trichlorobenzene (1,3,5-TCB, CAS RN: 108-70-3)
- 1,2,3,4-Tetrachlorobenzene (1,2,3,4-TeCB, CAS RN: 634-66-2)
- 1,2,3,5-Tetrachlorobenzene (1,2,3,5-TeCB, CAS RN: 634-90-2)
- 1,2,4,5-Tetrachlorobenzene (1,2,4,5-TeCB, CAS RN: 95-94-3)
- Pentachlorobenzene (PeCB, CAS RN: 608-93-5)
- Hexachlorobenzene (HCB, CAS RN: 118-74-1)

Chlorobenzenes are white crystalline solids at room temperature while MCB, 1,2-DCB, 1,3-DCB, and 1,2,4-TCB are clear liquids. They are practically insoluble in water and denser than water. . The water solubility is decreasing if more chlorinated. The flammability of chlorobenzenes are low, the octanol/water partition coefficients are moderate to high, increasing with more chlorinated, and vapour pressures are low to moderate, decreasing with more chlorinated. The taste and odour thresholds are low, decreasing with lower chlorinated. MCB (which makes up more than 50 % of total production of all chlorobenzenes) and DCBs (mo than 40 %) are prepared by the chlorination reaction of benzene in the liquid phase in the presence of iron(I chloride. (the chlorination under strong illumination and without iron(III) chloride leads to benzene hexachlor instead of mono or polychlorobenzenes). The chlorination reaction for DCB leads to similar ratio of ortho- and para-dichlorobenzene, but small amount of the meta isomer is performed. The ortho and para isomers are separated by fractional freezing. While the para isomer crystallizes, the ortho isomer remains liquid. The meta dichlorobenzene is prepared by heating and pressure with aluminum chloride. TCBs are obtained from the chlorination of appropriate chlorobenzene isomers in the presence of a Lewis acid catalyst. TeCBs are achieved by the addition of chlorine to trichlorobenzenes in the presence of an aluminium catalyst. PCB produced by the denitrification of pentachloronitrobenzene and the reductive dechlorination of HCB as we by the addition of chlorine to TeCB. HCB is produced by the direct chlorination of benzene with ferric chlorid catalyst at 150-200 C from the distillation of residues from the production of tetrachloroethylene. Chlorobenzenes are used mainly as process solvents and solvent carriers as well as parent compounds in the synthesis of pesticides (mainly), plastics, dyes, pharmaceuticals and other organic compounds. They are used as insecticidal fumigants against moths, as space deodorizers, as general insecticides and fungicides o crops. They are used in metal treatments; in industrial deodorants; in cleaners for drains. Higher chlorinated benzenes of TCBs, TeCBs are used in dielectric fluids.

MONOCHLOROBENZENE

CAS NUMBER : 108-90-7

EINECS NUMBER : 203-628-5

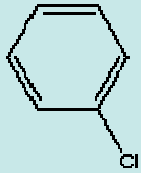
OTHER NAME(S):
Benzene chloride; Benzene monochloride; Chloorbenzeen (Dutch); Chlorbenzol; Chlorobenzen (Polish); Chlorobenzenu; Clorobenzene (Italian); Mcb; Monochloorbenzeen (Dutch); Monochlorbenzol (German); Monoclorobenzene (Italian); Phenyl Chloride;

MAJOR USES

Intermediate for the synthesis of phenol, aniline, chloronitrobenzenes, diphenyl oxide, DDT, and silicones; Process solvent for methylene diisocyanate, adhesives, polishes, waxes, pharmaceutical products, and natural rubber; Degrading solvent; Functional fluid in external combustion; Heat transfer fluids in solar energy collectors

ADDITIONAL INFORMATIO
Oral rat LD50: 1110 mg/kg
UN Number: 1134 (Hazard Class: 3, Packing Group: III)
Packing: 220kgs in drum

C_6H_5Cl (112.56)



PHYSICAL AND CHEMICAL PROPERTIES	
PHYSICAL STATE	clear liquid
MELTING POINT	-46 C
BOILING POINT	132 C
SPECIFIC GRAVITY	1.107
SOLUBILITY	Insoluble in water
VAPOR DENSITY	3.9
AUTOIGNITION	634 C
REFRACTIVE INDEX	1.524
FLASH POINT	29.5 C
SALES SPECIFICATION	
PURITY	99.5% min
DICHLOROBENZENE	0.15% max
BENZENE	0.05% max
ACIDITY	0.001% max
MOISTURE	0.5% max

1,2-DICHLOROBENZENE

CAS NUMBER : 95-50-1

EINECS NUMBER : 202-425-9

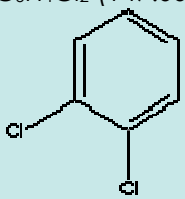
OTHER NAME(S):
o-Dichloro-Benzene; 2-dichlorobenzene; Chloroben; Cloroben; DCB; o-Dichlor benzol; o-Dichlorbenzene; ODB; Orthodichlorobenzene; Termitkil ;

MAJOR USES

Intermediate for the synthesis of dyes agrochemicals, pharmaceuticals, 3,4-dichloroaniline and other organic synthesis; solvent for organic materials and for oxides of non-ferrous metals; solvent carrier in the production of toluene diisocyanate; fumigant and insecticide; degreasing hides and wool; metal polishes; industrial odor controler; in cleaners for drains; preservative for wood. formulations for motor oil additives, lubricants and paints.

ADDITIONAL INFORMATIO

$C_6H_4Cl_2$ (147.00)



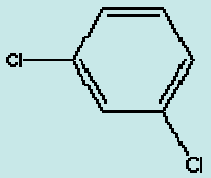
PHYSICAL AND CHEMICAL PROPERTIES	
PHYSICAL STATE	Clear liquid
MELTING POINT	-17.6 C
BOILING POINT	180 C
SPECIFIC GRAVITY	1.30 - 1.31
SOLUBILITY	Insoluble in water
VAPOR DENSITY	5.1
AUTOIGNITION	640 C
REFRACTIVE INDEX	1.5510
FLASH POINT	66 C
SALES SPECIFICATION	
PURITY	99.0% min
ISOMER IMPURITY	1.0% max
ORGANIC IMPURITY	0.5% max

Oral rat LD50: 500 mg/kg
UN Number: 1591 (Hazard Class: 6.1, Packing Group: III)
Packing: 250kgs in drum

MOISTURE	0.5% max

1,3-DICHLOROBENZENE

$C_6H_4Cl_2$ (147.00)



CAS NUMBER : 541-73-1

EINECS NUMBER : 208-792-1

OTHER NAME(S):
m-dichloro-Benzene; m-DCB; m-Dichlorobenzene; m-Phenylenedichloride; Meta-Dichlorobenzene;

MAJOR USES

fumigant and insecticide; solvent; chemical intermediate to manufacture dyes, agrochemicals, pharmaceuticals and other organic synthesis.

ADDITIONAL INFORMATIO
Oral rat LD50: 500 mg/kg
UN Number: 2810 (Hazard Class: 6.1, Packing Group: III)
Packing: 250kgs in drum

PHYSICAL AND CHEMICAL PROPERTIES	
PHYSICAL STATE	Clear liquid
MELTING POINT	-24 C
BOILING POINT	172 - 174 C
SPECIFIC GRAVITY	1.30
SOLUBILITY	Insoluble in water
VAPOR DENSITY	5.07
AUTOIGNITION	
REFRACTIVE INDEX	1.546
FLASH POINT	67 C
SALES SPECIFICATION	
PURITY	99.0% min
ISOMER IMPURITY	1.0% max
ORGANIC IMPURITY	0.5% max
MOISTURE	0.5% max

1,4-DICHLOROBENZENE

$C_6H_4Cl_2$ (147.00)

CAS NUMBER : 106-46-7

EINECS NUMBER : 203-400-5

OTHER NAME(S):
p-dichloro-benzene; 1,4-DCB; 1,4-Dichloorbenzeen (Dutch); 1,4-Dichlor-benzol (German); 1,4-Diclorobenzene (Italian); 4-dichlorobenzene; p-Chlorophenyl chloride; p-Dichloorbenzeen (Dutch); p-Dichlorbenzol (German); p-Dichlorobenzene; p-Dichlorobenzol; p-Diclorobenzene (Italian); para-Chlorophenyl chloride; para-Dichlorobenzene; Paracide; Paradichlorbenzol; Paradichlorobenzene; Paradichlorobenzol; PARAZENE; PDB; PDCB; PERSIA-PERAZOL; Santochlor;

MAJOR USES

general insecticide, moth repellent, germicide, deodorant;chemical intermediate to manufacture dyes

PHYSICAL AND CHEMICAL PROPERTIES	
PHYSICAL STATE	white crystalline powder
MELTING POINT	53 C
BOILING POINT	174 C
SPECIFIC GRAVITY	1.241
SOLUBILITY	Insoluble in water
VAPOR DENSITY	5.08
AUTOIGNITION	640 C
REFRACTIVE INDEX	
FLASH POINT	66 C
SALES SPECIFICATION	
PURITY	99.0% min
ISOMER IMPURITY	1.0% max
ORGANIC IMPURITY	0.5% max
MOISTURE	0.5% max

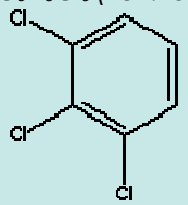
agrochemicals, pharmaceuticals, 2,5-dichloroaniline,plastics (e.g polyphenylene sulfide resins used for surface coatings and molding resins), and other organic synthesis.

ADDITIONAL INFORMATIO
Oral rat LD50: 500 mg/kg
UN Number: 3335 (Hazard Class: 9)
Packing: 250kgs in drum

MELTING POINT	52 C min

1,2,3-TRICHLOROBENZENE

$C_6H_3Cl_3$ (181.45)



CAS NUMBER : 87-61-6

EINECS NUMBER : 201-757-1

OTHER NAME(S):
1,2,3-TCB; 1,2,3-TrCB; 1,2,6-Trichlorobenzene; Trichlorobenzene; vic-Trichlorobenzene;

MAJOR USES

chemical intermediate; heat transfer fluid; high boiling solvent; dielectric fluid, insecticide and fungicide; coolant in electrical installation; glass tempering; dye carrier; transformer oils; lubricants.

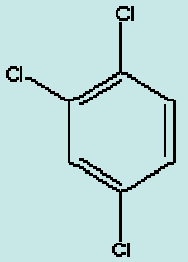
ADDITIONAL INFORMATIO
Oral rat LD50: 1830 mg/kg
UN Number: 2811 (Hazard Class: 6.1, Packing Group: III)
Packing: 300kgs in drum

PHYSICAL AND CHEMICAL PROPERTIES	
PHYSICAL STATE	white flakes
MELTING POINT	52 - 55 C
BOILING POINT	219 - 222 C
SPECIFIC GRAVITY	1.69
SOLUBILITY	Insoluble in water
VAPOR DENSITY	
AUTOIGNITION	
REFRACTIVE INDEX	
FLASH POINT	112 C

SALES SPECIFICATION	
PURITY	99.0% min
MELTING POINT	52 - 53 C

1,2,4-TRICHLOROBENZENE

$C_6H_3Cl_3$ (181.45)



CAS NUMBER : 120-82-1

EINECS NUMBER : 204-428-0

OTHER NAME(S):
1,2,4-Trichlorobenzol; 1,2,5-Trichlorobenzene; 1,3,4-Trichlorobenzene; Trojchlorobenzen (Polish); Unsym-trichlorobenzene;

MAJOR USES

chemical intermediate; heat transfer fluid; high boiling solvent; dielectric fluid, insecticide and fungicide; coolant in electrical installation; glass tempering; dye carrier;

PHYSICAL AND CHEMICAL PROPERTIES	
PHYSICAL STATE	Clear liquid
MELTING POINT	17 C
BOILING POINT	212 C
SPECIFIC GRAVITY	1.46
SOLUBILITY	Insoluble in water

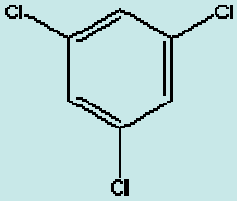
transformer oils; lubricants

ADDITIONAL INFORMATIO
Oral rat LD50: 756 mg/kg
UN Number: 2321 (Hazard Class: 6.1, Packing Group: III)
Packing: 300kgs in drum

VAPOR DENSITY	6.2
AUTOIGNITION	571 C
REFRACTIVE INDEX	1.454
FLASH POINT	110 C
SALES SPECIFICATION	
PURITY	98.0% min
MOISTURE	0.5% MAX

1,3,5-TRICHLOROBENZENE

$C_6H_3Cl_3$ (181.45)



CAS NUMBER : 108-70-3

EINECS NUMBER : 203-608-6

OTHER NAME(S):
1,3,5-trichloro-Benzene; 1,3,5-Trichlorobenzene; S-Trichlorobenzene; Sym-trichlorobenzene; Trichloro-1,3,5 benzene;

MAJOR USES

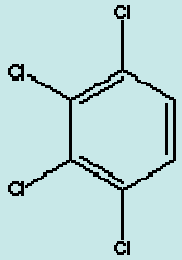
chemical intermediate; heat transfer fluid; high boiling solvent; dielectric fluid; insecticide and fungicide; coolant in electrical installation; glass tempering; dye carrier; transformer oils; lubricants

ADDITIONAL INFORMATIO
Oral rat LD50: 800 mg/kg
UN Number: 2811 (Hazard Class: 6.1, Packing Group: III)
Packing: 25kgs in bag

PHYSICAL AND CHEMICAL PROPERTIES	
PHYSICAL STATE	white flakes
MELTING POINT	63 - 65 C
BOILING POINT	208 C
SPECIFIC GRAVITY	
SOLUBILITY	Insoluble in water
VAPOR DENSITY	
AUTOIGNITION	
REFRACTIVE INDEX	
FLASH POINT	126 C
SALES SPECIFICATION	
PURITY	98.0% min
ISOMER IMPURITY	1.0% max
ORGANIC IMPURITY	0.5% max
MOISTURE	0.5% MAX

1,2,3,4-TETRACHLOROBENZENE

$C_6H_2Cl_4$ (215.89)



CAS NUMBER : 634-66-2

EINECS NUMBER : 211-214-0

OTHER NAME(S):
1,2,3,4-TCB; Tetrachlorobenzene;

MAJOR USES

dielectric fluids; in the synthesis of fungicides and other organic compounds

ADDITIONAL INFORMATIO
Oral rat LD50: 1167 mg/kg

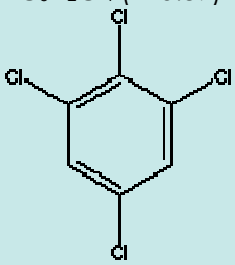
PHYSICAL AND CHEMICAL PROPERTIES	
PHYSICAL STATE	white flakes
MELTING POINT	42 - 47 C
BOILING POINT	254 C
SPECIFIC GRAVITY	
SOLUBILITY	Insoluble in water

UN Number: FS0001 (Hazard Class: 173)
Packing: 250kgs in drum

VAPOR DENSITY	
AUTOIGNITION	
REFRACTIVE INDEX	
FLASH POINT	112 C
SALES SPECIFICATION	
PURITY	98.0% min
ISOMER IMPURITY	1.0% max
ORGANIC IMPURITY	0.5% max
MOISTURE	0.5% MAX

1,2,3,5-TETRACHLOROBENZENE

$C_6H_2Cl_4$ (215.89)



CAS NUMBER : 634-90-2

EINECS NUMBER : 211-217-7

OTHER NAME(S):
1,2,3,5-TCB; Benzene, 1,2,3,5-tetrachloro-; Tetrachloro 1,2,3,5-benzene;

MAJOR USES

Intermediate for herbicides; defoliants

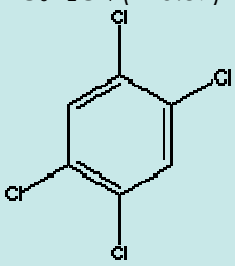
ADDITIONAL INFORMATIO

Oral rat LD50:
UN Number:
Packing: 250kgs in drum

PHYSICAL AND CHEMICAL PROPERTIES	
PHYSICAL STATE	white flakes
MELTING POINT	54 - 55 C
BOILING POINT	246 C
SPECIFIC GRAVITY	
SOLUBILITY	Insoluble in water
VAPOR DENSITY	
AUTOIGNITION	
REFRACTIVE INDEX	
FLASH POINT	
SALES SPECIFICATION	
PURITY	99.0% min
MELTING POINT	51 - 55 C

1,2,4,5-TETRACHLOROBENZENE

$C_6H_2Cl_4$ (215.89)



CAS NUMBER : 95-94-3

EINECS NUMBER : 202-466-2

OTHER NAME(S):
1,2,4,5-TCB; 1,2,4,5-Tetrachlorbenzol; Benzene tetrachloride; s-Tetrachlorobenzene;

MAJOR USES

Intermediate for insecticide, herbicides and

PHYSICAL AND CHEMICAL PROPERTIES	
PHYSICAL STATE	white flakes
MELTING POINT	138 - 140 C
BOILING POINT	240 C

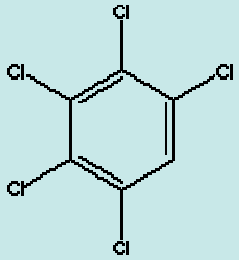
packing protection;

ADDITIONAL INFORMATIO
Oral rat LD50: 1500 mg/kg
UN Number: FS0001 (Hazard Class: 173)
Packing: 250kgs in drum

SPECIFIC GRAVITY	1.734
SOLUBILITY	Insoluble in water
VAPOR DENSITY	7.4
AUTOIGNITION	
REFRACTIVE INDEX	
FLASH POINT	112 C
SALES SPECIFICATION	
PURITY	99.0% min
ISOMER IMPURITY	1.0% max
ORGANIC IMPURITY	0.5% max
MOISTURE	0.5% MAX

PENTACHLOROBENZENE

C_6HCl_5 (250.34)



CAS NUMBER : 608-93-5

EINECS NUMBER : 210-172-0

OTHER NAME(S):
1,2,3,4,5-PENTACHLOROBENZENE; PCB; QCB;

MAJOR USES

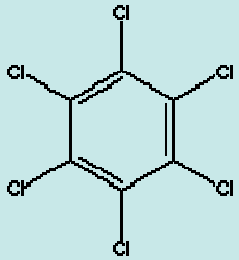
pesticide; chemical intermediate

ADDITIONAL INFORMATIO
Oral rat LD50:
UN Number:
Packing: 25kgs in bag

PHYSICAL AND CHEMICAL PROPERTIES	
PHYSICAL STATE	white flakes
MELTING POINT	84 - 87 C
BOILING POINT	275 - 277 C
SPECIFIC GRAVITY	1.61
SOLUBILITY	Insoluble in water
VAPOR DENSITY	
AUTOIGNITION	
REFRACTIVE INDEX	
FLASH POINT	
SALES SPECIFICATION	
PURITY	99.0% min
ISOMER IMPURITY	1.0% max
ORGANIC IMPURITY	0.5% max
MOISTURE	0.5% MAX

HEXACHLOROBENZENE

C_6Cl_6 (284.78)



CAS NUMBER : 118-74-1

EINECS NUMBER : 204-273-9

OTHER NAME(S):
Amatin; Anticarie; Esaclorobenzene (Italian);
Hexachlorbenzol (German); Pentachlorophenyl chloride;

(German); Sanocid; Sanocide;

MAJOR USES

seed dressing; fungicide treating seed; in the manufacture of pyrotechnics, tracer bullets; fluxing agent in the manufacture of aluminum. wood-preserving agent; porosity-control agent in the manufacture of graphite anodes; peptizing agent in the production of nitroso and styrene rubber for tyres;

ADDITIONAL INFORMATIO
Oral rat LD50: 3500 mg/kg
UN Number: 2729 (Hazard Class: 6.1, Packing Group: III)
Packing: 25kgs in bag

PHYSICAL AND CHEMICAL PROPERTIES	
PHYSICAL STATE	white flakes
MELTING POINT	227 - 229 C
BOILING POINT	332 C
SPECIFIC GRAVITY	1.57
SOLUBILITY	Insoluble in water
VAPOR DENSITY	9.83
AUTOIGNITION	
REFRACTIVE INDEX	
FLASH POINT	242 C
SALES SPECIFICATION	
PURITY	99.0% min
ISOMER IMPURITY	1.0% max
ORGANIC IMPURITY	0.5% max
MOISTURE	0.5% MAX