



C-5 DIENES CRUDE

Complex mixture of (mainly unsaturated) C5 hydrocarbons

General

C-5 DIENES CRUDE is a mixture of C5 components rich in cyclopentadiene, piperylene and isoprene. It originates from high temperature cracking of petroleum fractions and is separated by distillation of benzene from pyrolysis gasoline.

C-5 DIENES CRUDE is used as a source for isoprene to make polyisoprene rubber for tires. The stream also contains piperylene used to produce copolymerization elastomers, petroleum resins, curing agents, pesticides and perfumes. It may also be used as gasoline blending component.

Available Grades

C-5 DIENES CRUDE - One grade is available.

Physical Properties

C-5 DIENES CRUDE is a highly volatile hydrocarbon liquid. Because of the high content of di-olefinic components it reacts readily with other components. Stored at room temperature the cyclopentadiene monomer in the product may dimerize to form the more stable dimer dicyclopentadiene or DCPD. C5 DIENES CRUDE needs to be cooled to control vapor emissions as some components approach its boiling points at room temperature. The product is slightly soluble in water. The typical physical properties of the product are given below as well as some product specific characteristics.

Product Typical Properties

Test Parameter	C5 DIENES CRUDE
Specific Gravity (15.6°C; 60°F) (Water=1)	0.67 – 0.69
C5 Dienes, including olefins (wt.-%)	50 – 70
Inhibitor (4-tert-butylcatechol) (ppm)	100 – 200
Vapor Pressure (20°C)	~ 618 hPa
Relative Vapor Density (air=1)	2.4
Flash Point (°C)	-20
Pour Point (°C)	-145
Boiling Point (°C)	~ 30
Autoignition Temperature (°C, in air)	220
Water (wt.-%)	0 – 0.05
Sulfur (ppm)	10 – 35
Benzene + Toluene (wt.-%)	0.1 – 1
Odor	Strong hydrocarbon
Appearance	Clear to slightly yellow liquid

Note 1: Data above are based on average production data from 2004. As the products originate from petroleum cracker operations these values may vary during the year as result of changing operational conditions of the cracker.

Note 2: The data above are typical values, not to be construed as specifications. Users should confirm results by their own tests.

Product Typical Composition

Component	C-5 DIENES CRUDE
Isoprene	14 – 18 %
Cis/trans Pentadiene (Piperylene)	10 – 20 %
Cyclopentadiene	8 – 19 %
Cyclopentene	0 – 10 %
Dicyclopentadiene	0.3 – 5 %
Methylbutene	0 – 10 %
Other C5's	10 – 20 %
C4's and lighter	1 – 3 %
C6's and heavier	0.5 – 6 %

Note 1: All data are given in %-w/w unless stated otherwise.

Note 2: Data above are based on average production data from 2004. As the products originate from petroleum cracker operations these values may vary during the year as result of changing operational conditions of the cracker.

Note 3: The data above are typical values, not to be construed as specifications. Users should confirm results by their own test.

Production Locations

- Terneuzen (The Netherlands)

Suggested Applications

C-5 DIENES CRUDE may be used as a source of cyclopentadiene, isoprene or piperylene for further processing.

Cyclopentadiene and its dimer dicyclopentadiene are used as raw material for various polymerizations to produce polyester and other resins.

Isoprene is used as a monomer to produce polyisoprene used for car tires, footwear, mechanical goods, sealants, and caulking compounds.

Piperylenes are used to produce C5 based hydrocarbon resins used in various applications such as inks or adhesives.

C-5 DIENES CRUDE can also be used as a gasoline blendstock for motor fuels.

More Information

For more information about the aromatic products of Dow (i.e. Sales Specifications, (Material) Safety Data Sheets, Availability, Technical Services & Development, Regulatory Status and other information) please visit our website at:

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