

Molecular geometry

Science



Molecular Geometry I - Investigation using Models (SL) (DCP Lab) Taksh Shah
 KIS International School Chemistry (SL) 1 Introduction For this investigation we had use molecular models and make the following structures: Symbol Name of Species Lewis Diagram Model Bond Polar or Angle (°) Non-Polar BeCl₂ Beryllium Chloride Linear 180 Non-Polar C₂H₂ Acetylene Linear 180 Non- Polar BF₃ Boron Tri? uoride Planar Triangle 120 Non- Polar C₂H₄ Ethylene Planar Triangle 120 Non-Polar Molecular Geometry I- Investigation using Models (SL) Chemistry (SL) Symbol 2 Name of Species Lewis Diagram Model Bond Polar or Angle (°) Non-Polar CH₄ Methane Tetrahederal 109. 5 Non-Polar NH₃ Ammonia Trigonal Pyramid 107 Polar H₂O Water Bent / VShape 104. 5 Polar SO₂ Sulfur Dioxide Bent / VShape 104. 5 Polar 120 Polar or NonPolar Planar C₂H₂Cl₂ Dichloroethene Triangle (Carbon) Tetrahederal (Carbon) C₂H₆O Ethanol V-Shaped (Oxygen) Molecular Geometry I- Investigation using Models (SL) HCH Bond = 109. 5 COH = 104. 5 Polar Chemistry (SL) 3 Explanation Symbol BeCl₂ C₂H₂ BF₃ Structure It's Linear because it has 2 Bond Paris and 0 Lone Paris It's Linear because it has 2 Areas of negative harge around the Carbons and 0 Lone Paris It's a Planar Triangle because it has 3 Bonding Pairs and 0 Lone Pairs Shape Polarity With the angle being 180° Non-Polar because it has the Molecular Shape polar bonds and is becomes Linear symmetrical With the angle being 180° Non-Polar because it has the Molecular Shape polar bonds and is becomes Linear symmetrical With the angle being 120° Non-Polar because it has the Molecular Shape polar bonds and is becomes a Planar Triangle symmetrical It's a Planar Triangle because it has 3 Areas of CH₄ NH₃ H₂O SO₂ Non-Polar because it has the Molecular Shape olar bonds and is Lone Pairs C₂H₄ With

the angle being 120° negative charge around the Carbons Pairs and 0 becomes a Planar Triangle symmetrical With the angle being 109.5° Non-Polar because it has It's a Tetrahedral because it has 4 Bonding Paris and 0 Lone Pairs It's a Trigonal Pyramid because it has 3 Bonding Paris and 1 Lone Pairs It's a Bent/V-Shape because it has 2 Bonding Pairs and 2 Lone Pairs It's a Bent/V-Shape because it has 3 Areas of positive charge around Sulphur and 1 Lone Pairs the Molecular Shape polar bonds and is becomes a Tetrahedral symmetrical With the angle being 107°

Polar because it has polar the Molecular Shape bonds and is non- becomes a Trigonal Pyramid symmetrical With the angle being 104.5° Polar because it has polar the Molecular Shape bonds and is non- becomes a Bent/V-Shape symmetrical With the angle being 104.5° Polar because it has polar the Molecular Shape bonds and is non- becomes a Bent/V-Shape symmetrical Polar because it has polar bonds and is nonsymmetrical It's a Planar Triangle because it has 3 areas of $C_2H_2Cl_2$ negative charge around the Carbon atoms and 0 Lone Pairs With the angle being 120° the Molecular Shape or becomes a Planar Triangle

Non-Polar because it has non-polar bonds and is symmetrical Molecular Geometry I- Investigation using Models (SL) Chemistry (SL) Symbol 4 Structure Shape Polarity With the angle being 109.5° It's a Tetrahedral (Carbon) because it has 4 the Molecular Shape Bonding Paris and 0 Lone Pairs becomes a Tetrahedral (Carbon) C_2H_6O It's a Bent/V-Shape (Oxygen) because it has 2 Bonding Pairs and 2 Lone Pairs bonds and is nonWith the angle being 104.5° the Molecular Shape becomes a Bent/V-Shape (Oxygen)

Molecular Geometry I- Investigation using Models (SL) Polar because it has polar symmetrical