

ID1 - CASE 1 - Zone Definition	
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						Source of Release			Ventilation			Enviroment Temperature [°C]	Hazardous Area	Extent of Hazardous Areas [m]	
ID	Unit Name	Total Molar Component Vol Fractions		Temperature [°C]	Pressure [barg]	State of Emission / Leak Source	Emission Flow [Kg/sec]	Grade of Realise	Section [mm ²]	Type	Degree				Availability
1	REDUCING GAS FROM B.L.	Name	Vol Fraction [%]									85	10.15	Gas Leak Source: Flange	
		Hydrogen	46.961												
		Methane	24.437												
		Ethane	0.257												
		Propane	0.059												
		Butane	0.018												
		Pentane	0.006												
		Hexane	0.000												
		Carbon monoxide	11.084												
		Carbon dioxide	1.598												
		Nitrogen	10.470												
		H2S	0.000												
		Argon	0.000												
		Ethylene	0.000												
		SO2	0.000												
Oxygen	0.000														

ID2 - CASE 1 - Zone Definition	
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						Source of Release			Ventilation			Enviroment Temperature [°C]	Hazardous Area	Extent of Hazardous Areas [m]	
ID	Unit Name	Total Molar Component Vol Fractions		Temperature [°C]	Pressure [barg]	State of Emission / Leak Source	Emission Flow [Kg/sec]	Grade of Realise	Section [mm ²]	Type	Degree				Availability
2	REDUCING GAS OUTLET.	Name	Vol Fraction [%]									950	8.35	Gas Leak Source: Flange	
		Hydrogen	46.961												
		Methane	24.437												
		Ethane	0.257												
		Propane	0.059												
		Butane	0.018												
		Pentane	0.006												
		Hexane	0.000												
		Carbon monoxide	11.084												
		Carbon dioxide	1.598												
		Nitrogen	10.470												
		H2S	0.000												
		Argon	0.000												
		Ethylene	0.000												
		SO2	0.000												
Oxygen	0.000														
Note 1 : Although, in the composition of the mixture of flammable gases, hydrogen is not the alone flammable gas , given the extreme volatility of the gas and even the one with the lowest molecular weight is the most dangerous. Furthermore, since hydrogen cannot be mixed with other petroleum-derived gases, it tends to escape into the air first in case of failure. Therefore for greater safety possible the classification is represented by this gas.															

ID3 - CASE 1 - Zone Definition	
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						Source of Release			Ventilation			Enviroment Temperature [°C]	Hazardous Area	Extent of Hazardous Areas [m]	
ID	Unit Name	Total Molar Component Vol Fractions		Temperature [°C]	Pressure [barg]	State of Emission / Leak Source	Emission Flow [Kg/sec]	Grade of Realise	Section [mm ²]	Type	Degree				Availability
3	NATURAL GAS FROM B.L.	Name	Vol Fraction [%]									25	15	Gas Leak Source: Flange	
		Hydrogen	0.000												
		Methane	93.900												
		Ethane	3.260												
		Propane	0.690												
		Butane	0.270												
		Pentane	0.090												
		Hexane	0.000												
		Carbon monoxide	0.000												
		Carbon dioxide	0.000												
		Nitrogen	1.790												
		H2S	0.001												
		Argon	0.000												
		Ethylene	0.000												
		SO2	0.000												
Oxygen	0.000														
Note 1 : Although, in the composition of the mixture of flammable gases, hydrogen is not the alone flammable gas , given the extreme volatility of the gas and even the one with the lowest molecular weight is the most dangerous. Furthermore, since hydrogen cannot be mixed with other petroleum-derived gases, it tends to escape into the air first in case of failure. Therefore for greater safety possible the classification is represented by this gas.															

ID4 - CASE 1 - Zone Definition	
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						Source of Release			Ventilation			Enviroment Temperature [°C]	Hazardous Area	Extent of Hazardous Areas [m]	
ID	Unit Name	Total Molar Component Vol Fractions		Temperature [°C]	Pressure [barg]	State of Emission / Leak Source	Emission Flow [Kg/sec]	Grade of Realise	Section [mm ²]	Type	Degree				Availability
4	TAIL GAS FROM B.L...	Name	Vol Fraction [%]									38	2.5		
		Hydrogen	50.471												
		Methane	15.971	<div>Gas Leak Source: Flange</div> <div>4.23E-05</div> <div>Secondary</div> <div>2.5</div> <div>Natural Outdoor</div> <div>Medium</div> <div>Fair</div> <div>40</div> <div>Zone 2</div> <div>1.00</div> <div>Note 1 : Although, in the composition of the mixture of flammable gases, hydrogen is not the alone flammable gas , given the extreme volatility of the gas and even the one with the lowest molecular weight is the most dangerous. Furthermore, since hydrogen cannot be mixed with other petroleum-derived gases, it tends to escape into the air first in case of failure. Therefore for greater safety possible the classification is represented by this gas.</div>											
		Ethane	0.000												
		Propane	0.000												
		Butane	0.000												
		Pentane	0.000												
		Hexane	0.000												
		Carbon monoxide	12.619												
		Carbon dioxide	8.906												
		Nitrogen	11.132												
		H2S	0.002												
		Argon	0.000												
		Ethylene	0.000												
		SO2	0.000												
Oxygen	0.000														

ID1 - CASE 2 - Zone Definition	
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						Source of Release			Ventilation			Enviroment Temperature [°C]	Hazardous Area	Extent of Hazardous Areas [m]	
ID	Unit Name	Total Molar Component Vol Fractions		Temperature [°C]	Pressure [barg]	State of Emission / Leak Source	Emission Flow [Kg/sec]	Grade of Realise	Section [mm ²]	Type	Degree				Availability
1	REDUCING GAS FROM B.L.	Name	Vol Fraction [%]									81	9.8	Gas Leak Source: Flange	
		Hydrogen	51.475												
		Methane	26.108												
		Ethane	0.211												
		Propane	0.049												
		Butane	0.015												
		Pentane	0.005												
		Hexane	0.000												
		Carbon monoxide	7.103												
		Carbon dioxide	1.422												
		Nitrogen	9.072												
		H2S	0.000												
		Argon	0.000												
		Ethylene	0.000												
		SO2	0.000												
Oxygen	0.000														
Note 1 : Although, in the composition of the mixture of flammable gases, hydrogen is not the alone flammable gas , given the extreme volatility of the gas and even the one with the lowest molecular weight is the most dangerous. Furthermore, since hydrogen cannot be mixed with other petroleum-derived gases, it tends to escape into the air first in case of failure. Therefore for greater safety possible the classification is represented by this gas.															

ID2 - CASE 2 - Zone Definition	
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						Source of Release			Ventilation			Enviroment Temperature [°C]	Hazardous Area	Extent of Hazardous Areas [m]	
ID	Unit Name	Total Molar Component Vol Fractions		Temperature [°C]	Pressure [barg]	State of Emission / Leak Source	Emission Flow [Kg/sec]	Grade of Realise	Section [mm ²]	Type	Degree				Availability
2	REDUCING GAS OUTLET	Name	Vol Fraction [%]									935	8.15		
		Hydrogen	51.475												
		Methane	26.108	Gas Leak Source: Flange	5.62E-05	Secondary	2.5	Natural Outdoor	Medium	Fair	40			Zone 2	1.00
		Ethane	0.211												
		Propane	0.049												
		Butane	0.015												
		Pentane	0.005												
		Hexane	0.000												
		Carbon monoxide	7.103												
		Carbon dioxide	1.422												
		Nitrogen	9.072												
		H2S	0.000												
		Argon	0.000												
		Ethylene	0.000												
		SO2	0.000												
Oxygen	0.000														
Note 1 : Although, in the composition of the mixture of flammable gases, hydrogen is not the alone flammable gas , given the extreme volatility of the gas and even the one with the lowest molecular weight is the most dangerous. Furthermore, since hydrogen cannot be mixed with other petroleum-derived gases, it tends to escape into the air first in case of failure. Therefore for greater safety possible the classification is represented by this gas.															

ID3 - CASE 2 - Zone Definition	
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						Source of Release			Ventilation			Enviroment Temperature [°C]	Hazardous Area	Extent of Hazardous Areas [m]
ID	Unit Name	Total Molar Component Vol Fractions		Temperature [°C]	Pressure [barg]	State of Emission / Leak Source	Emission Flow [Kg/sec]	Grade of Realise	Section [mm ²]	Type	Degree			
3	NATURAL GAS FROM B.L.	Name	Vol Fraction [%]									25	15	
		Hydrogen	0.000											
		Methane	93.900	<div>Gas Leak Source: Flange</div> <div>5.44E-04</div> <div>Secondary</div> <div>2.5</div> <div>Natural Outdoor</div> <div>Medium</div> <div>Fair</div> <div>40</div> <div>Zone 2</div> <div>1.00</div>										
		Ethane	3.260											
		Propane	0.690											
		Butane	0.270											
		Pentane	0.090											
		Hexane	0.000											
		Carbon monoxide	0.000											
		Carbon dioxide	0.000											
		Nitrogen	1.790											
		H2S	0.001											
		Argon	0.000											
		Ethylene	0.000											
		SO2	0.000											
Oxygen	0.000													

ID4 - CASE 2 - Zone Definition	
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						Source of Release			Ventilation			Enviroment Temperature [°C]	Hazardous Area	Extent of Hazardous Areas [m]	
ID	Unit Name	Total Molar Component Vol Fractions		Temperature [°C]	Pressure [barg]	State of Emission / Leak Source	Emission Flow [Kg/sec]	Grade of Realise	Section [mm ²]	Type	Degree				Availability
4	TAIL GAS FROM B.L...	Name	Vol Fraction [%]									38	2.5		
		Hydrogen	52.220												
		Methane	20.793	Gas Leak Source: Flange	4.23E-05	Secondary	2.5	Natural Outdoor	Medium	Fair	40			Zone 2	1.00
		Ethane	0.000												
		Propane	0.000												
		Butane	0.000												
		Pentane	0.000												
		Hexane	0.000												
		Carbon monoxide	8.568												
		Carbon dioxide	7.344												
		Nitrogen	10.185												
		H2S	0.002												
		Argon	0.000												
		Ethylene	0.000												
		SO2	0.000												
Oxygen	0.000														
Note 1 : Although, in the composition of the mixture of flammable gases, hydrogen is not the alone flammable gas , given the extreme volatility of the gas and even the one with the lowest molecular weight is the most dangerous. Furthermore, since hydrogen cannot be mixed with other petroleum-derived gases, it tends to escape into the air first in case of failure. Therefore for greater safety possible the classification is represented by this gas.															

ID1 - CASE 3 - Zone Definition	
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						Source of Release			Ventilation			Enviroment Temperature [°C]	Hazardous Area	Extent of Hazardous Areas [m]	
ID	Unit Name	Total Molar Component Vol Fractions		Temperature [°C]	Pressure [barg]	State of Emission / Leak Source	Emission Flow [Kg/sec]	Grade of Realise	Section [mm ²]	Type	Degree				Availability
1	REDUCING GAS FROM B.L.	Name	Vol Fraction [%]									45	7.97		
		Hydrogen	92.667												
		Methane	3.030	Gas Leak Source: Flange	1.07E-04	Secondary	2.5	Natural Outdoor	Medium	Fair	40			Zone 2	1.00
		Ethane	0.000												
		Propane	0.000												
		Butane	0.000												
		Pentane	0.000												
		Hexane	0.000												
		Carbon monoxide	0.394												
		Carbon dioxide	0.373												
		Nitrogen	2.939												
		H2S	0.000												
		Argon	0.000												
		Ethylene	0.000												
		SO2	0.000												
Oxygen	0.000														
Note 1 : Although, in the composition of the mixture of flammable gases, hydrogen is not the alone flammable gas , given the extreme volatility of the gas and even the one with the lowest molecular weight is the most dangerous. Furthermore, since hydrogen cannot be mixed with other petroleum-derived gases, it tends to escape into the air first in case of failure. Therefore for greater safety possible the classification is represented by this gas.															

ID2 - CASE 3 - Zone Definition	
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						Source of Release			Ventilation			Enviroment Temperature [°C]	Hazardous Area	Extent of Hazardous Areas [m]	
ID	Unit Name	Total Molar Component Vol Fractions		Temperature [°C]	Pressure [barg]	State of Emission / Leak Source	Emission Flow [Kg/sec]	Grade of Realise	Section [mm ²]	Type	Degree				Availability
		Name	Vol Fraction [%]												
2	REDUCING GAS OUTLET.	Hydrogen	92.667	910	7.4										
		Methane	3.030			<div>Gas Leak Source: Flange</div> <div>5.71E-05</div> <div>Secondary</div> <div>2.5</div> <div>Natural Outdoor</div> <div>Medium</div> <div>Fair</div> <div>40</div> <div>Zone 2</div> <div>1.00</div> <div>Note 1 : Although, in the composition of the mixture of flammable gases, hydrogen is not the alone flammable gas , given the extreme volatility of the gas and even the one with the lowest molecular weight is the most dangerous. Furthermore, since hydrogen cannot be mixed with other petroleum-derived gases, it tends to escape into the air first in case of failure. Therefore for greater safety possible the classification is represented by this gas.</div>									
		Ethane	0.000												
		Propane	0.000												
		Butane	0.000												
		Pentane	0.000												
		Hexane	0.000												
		Carbon monoxide	0.394												
		Carbon dioxide	0.373												
		Nitrogen	2.939												
		H2S	0.000												
		Argon	0.000												
		Ethylene	0.000												
		SO2	0.000												
		Oxygen	0.000												

ID3 - CASE 3 - Zone Definition	
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						Source of Release			Ventilation			Enviroment Temperature [°C]	Hazardous Area	Extent of Hazardous Areas [m]	
ID	Unit Name	Total Molar Component Vol Fractions		Temperature [°C]	Pressure [barg]	State of Emission / Leak Source	Emission Flow [Kg/sec]	Grade of Realise	Section [mm ²]	Type	Degree				Availability
3	NATURAL GAS FROM B.L.	Name	Vol Fraction [%]									25	15	Gas Leak Source: Flange	
		Hydrogen	0.000												
		Methane	93.900												
		Ethane	3.260	Note 1 : Although, in the composition of the mixture of flammable gases, hydrogen is not the alone flammable gas , given the extreme volatility of the gas and even the one with the lowest molecular weight is the most dangerous. Furthermore, since hydrogen cannot be mixed with other petroleum-derived gases, it tends to escape into the air first in case of failure. Therefore for greater safety possible the classification is represented by this gas.											
		Propane	0.690												
		Butane	0.270												
		Pentane	0.090												
		Hexane	0.000												
		Carbon monoxide	0.000												
		Carbon dioxide	0.000												
		Nitrogen	1.790												
		H2S	0.001												
		Argon	0.000												
		Ethylene	0.000												
		SO2	0.000												
Oxygen	0.000														

ID4 - CASE 3 - Zone Definition

						Source of Release			Ventilation			Enviroment Temperature [°C]	Hazardous Area	Extent of Hazardous Areas [m]	
ID	Unit Name	Total Molar Component Vol Fractions		Temperature [°C]	Pressure [barg]	State of Emission / Leak Source	Emission Flow [Kg/sec]	Grade of Realise	Section [mm ²]	Type	Degree				Availability
		Name	Vol Fraction [%]												
4	TAIL GAS FROM B.L...	Hydrogen	89.437	38	2.5										
		Methane	4.368			<div>Gas Leak Source: Flange</div> <div>4.23E-05</div> <div>Secondary</div> <div>2.5</div> <div>Natural Outdoor</div> <div>Medium</div> <div>Fair</div> <div>40</div> <div>Zone 2</div> <div>1.00</div> <div>Note 1 : Although, in the composition of the mixture of flammable gases, hydrogen is not the alone flammable gas , given the extreme volatility of the gas and even the one with the lowest molecular weight is the most dangerous. Furthermore, since hydrogen cannot be mixed with other petroleum-derived gases, it tends to escape into the air first in case of failure. Therefore for greater safety possible the classification is represented by this gas.</div>									
		Ethane	0.000												
		Propane	0.000												
		Butane	0.000												
		Pentane	0.000												
		Hexane	0.000												
		Carbon monoxide	0.568												
		Carbon dioxide	0.538												
		Nitrogen	4.237												
		H2S	0.002												
		Argon	0.000												
		Ethylene	0.000												
		SO2	0.000												
		Oxygen	0.000												

ID5 - CASE 3 - Zone Definition	
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						Source of Release			Ventilation			Enviroment Temperature [°C]	Hazardous Area	Extent of Hazardous Areas [m]
ID	Unit Name	Total Molar Component Vol Fractions		Temperature [°C]	Pressure [barg]	State of Emission / Leak Source	Emission Flow [Kg/sec]	Grade of Realise	Section [mm ²]	Type	Degree			
		Name	Vol Fraction [%]											
5	COOILNG TAIL GAS FROM B.L.	Hydrogen	6.707	39.5	2.5									
		Methane	83.805			<div>Gas Leak Source: Flange</div> <div>4.23E-05</div> <div>Secondary</div> <div>2.5</div> <div>Natural Outdoor</div> <div>Medium</div> <div>Fair</div> <div>40</div> <div>Zone 2</div> <div>1.00</div> <div>Note 1 : Although, in the composition of the mixture of flammable gases, hydrogen is not the alone flammable gas , given the extreme volatility of the gas and even the one with the lowest molecular weight is the most dangerous. Furthermore, since hydrogen cannot be mixed with other petroleum-derived gases, it tends to escape into the air first in case of failure. Therefore for greater safety possible the classification is represented by this gas.</div>								
		Ethane	0.279											
		Propane	0.038											
		Butane	0.003											
		Pentane	0.000											
		Hexane	0.000											
		Carbon monoxide	0.001											
		Carbon dioxide	0.001											
		Nitrogen	8.324											
		H2S	0.000											
		Argon	0.000											
		Ethylene	-											
		SO2	-											
		Oxygen	0.000											