

Lubricant (liquid- marvel air tool) (o-DCB) Full Analysis Results

Chemical: o-DCB
Product/Article: Lubricants (non-spray)
Use Environment: Residence - Garage
Scenario Description/Notes: Not provided

Lubricant (liquid- marvel air tool) (o-DCB): Combined Analysis Results

Receptor	Inhalation		Ingestion		Dermal		Total	
	Acute Dose Rate (mg/kg/d)	Chronic Average Daily Dose (mg/kg/d)	Acute Dose Rate (mg/kg/d)	Chronic Average Daily Dose (mg/kg/d)	Acute Dose Rate (mg/kg/d)	Chronic Average Daily Dose (mg/kg/d)	Acute Dose Rate (mg/kg/d)	Chronic Average Daily Dose (mg/kg/d)
Lifetime_LADD	0.00E+00	5.93E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.93E-06
Adult	1.35E-04	4.57E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.35E-04	4.57E-06
Youth2	1.68E-04	5.67E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.68E-04	5.67E-06
Youth1	1.97E-04	6.65E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.97E-04	6.65E-06
Child2	2.79E-04	9.45E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.79E-04	9.45E-06
Child1	4.02E-04	1.37E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.02E-04	1.37E-05
Infant2	4.98E-04	1.70E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.98E-04	1.70E-05
Infant1	5.29E-04	1.80E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.29E-04	1.80E-05

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Lubricant (liquid- marvel air tool) (o-DCB): Inhalation Results

Chronic Inhalation Results:

Receptor	Background Chronic Dose (mg/kg/d)	Chronic Dose (mg/day)	Chronic ADD (mg/kg/d)	Chronic ADC Zone 1 (mg/m3)	Chronic
Adult	0.00E+00	3.66E-04	4.57E-06	1.53E-05	
Youth2	0.00E+00	4.06E-04	5.67E-06	1.53E-05	
Youth1	0.00E+00	3.78E-04	6.65E-06	1.53E-05	
Child2	0.00E+00	3.01E-04	9.45E-06	1.53E-05	
Child1	0.00E+00	2.54E-04	1.37E-05	1.53E-05	
Infant2	0.00E+00	2.14E-04	1.70E-05	1.53E-05	
Infant1	0.00E+00	1.41E-04	1.80E-05	1.53E-05	

Time to background concentration- chronic (hr):

Acute Inhalation Results:

Receptor	Background ADR (mg/kg/d)	Peak Dose (mg/day)	ADR (mg/kg/d)	Peak Conc. (mg/m3)
Adult	0.00E+00	1.08E-02	1.35E-04	1.43E-02
Youth2	0.00E+00	1.20E-02	1.68E-04	1.43E-02
Youth1	0.00E+00	1.12E-02	1.97E-04	1.43E-02
Child2	0.00E+00	8.87E-03	2.79E-04	1.43E-02
Child1	0.00E+00	7.48E-03	4.02E-04	1.43E-02
Infant2	0.00E+00	6.28E-03	4.98E-04	1.43E-02
Infant1	0.00E+00	4.12E-03	5.29E-04	1.43E-02

Time to background concentration- acute (hr):

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Lubricant (liquid- marvel air tool) (o-DCB): Ingestion Results

Chronic Ingestion Results:

Receptor	Chronic ADD (mg/kg/d)
Adult	0.00E+00
Youth2	0.00E+00
Youth1	0.00E+00
Child2	0.00E+00
Child1	0.00E+00
Infant2	0.00E+00
Infant1	0.00E+00

Acute Ingestion Results:

Receptor	ADR (mg/kg/d)
Adult	0.00E+00
Youth2	0.00E+00
Youth1	0.00E+00
Child2	0.00E+00
Child1	0.00E+00
Infant2	0.00E+00
Infant1	0.00E+00

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Lubricant (liquid- marvel air tool) (o-DCB): Dermal Results

Chronic Dermal Results:

Receptor	Applied to Skin Chronic ADD (mg/kg/d)	Skin Contact Chronic ADD (mg/kg/d)	Vapor to Skin Chronic ADD (mg/kg/d)	Total Chronic Dermal ADD (mg/kg/d)
Adult	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Youth2	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Youth1	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Child2	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Child1	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Infant2	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Infant1	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Acute Dermal Results:

Receptor	Applied to Skin ADR (mg/kg/d)	Skin Contact ADR (mg/kg/d)	Vapor to Skin ADR (mg/kg/d)	Total Acute Dermal ADR (mg/kg/d)
Adult	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Youth2	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Youth1	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Child2	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Child1	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Infant2	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Infant1	0.00E+00	0.00E+00	0.00E+00	0.00E+00

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CEM Scenario Summary

Scenario Name and Definition

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Scenario Description/notes:

Models

Models for the Selected Product or Article:	VOC	E1: Emission from Product Applied to a Surface Indoors Incremental Source Model P_INH1: Calculation of Inhalation Dose from Product Usage P_INH2: Calculation of Inhalation Dose from Product Usage: Near-field Option
	SVOC/VOC	P_DER2a: Dermal Dose from Product Applied to Skin, Fraction Absorbed Model
	SVOC/VOC	P_DER2b: Dermal Dose from Product Applied to Skin, Permeability Model

Additional Product Options

Product Users: ☒ Adult ☒ Youth ☒ Child
Activity Pattern: ☒ SAH ☐ Part-time ☐ Full-time
Use a User Defined Emission Rate? ☒ Let CEM Define Emission Rate ☐ Use a User-Defined Emission Rate
Dermal Absorption or Permeability? ☒ Absorption Fraction Method ☐ Permeability Method
Use Near Field Zone? ☒ Do Not Use Near Field in Zone 1 ☐ Use Near Field in Zone 1

Inputs

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Location	Required Input	Value
1. Scenario	Background Air Concentration (mg/m3)	0.00E+00
1. Scenario	Weight Fraction of Chemical (-)	1.00E-02
2. Inputs; a. Chemical Properties	Gas Phase Mass Transfer Coefficient (m/hr)	2.55E+00
2. Inputs; a. Chemical Properties	Log Octanol-water partition coefficient (-)	3.38E+00
2. Inputs; a. Chemical Properties	Molecular Weight (g/mol)	1.47E+02
2. Inputs; a. Chemical Properties	Saturation Concentration in Air (mg/m3)	1.07E+04
2. Inputs; a. Chemical Properties	Vapor Pressure (torr)	1.35E+00
2. Inputs; a. Chemical Properties	Water Solubility (mg/mL)	3.30E+01
2. Inputs; b. Product/Article Properties	Absorption Fraction, Acute (-)	5.17E-01
2. Inputs; b. Product/Article Properties	Absorption Fraction, Chronic (-)	5.46E-01
2. Inputs; b. Product/Article Properties	Amount Retained on Skin (g/cm2)	7.39E-05
2. Inputs; b. Product/Article Properties	Density of Product/Article (g/cm3)	9.00E-01
2. Inputs; b. Product/Article Properties	Duration of Use - Acute (min)	1.00E+01
2. Inputs; b. Product/Article Properties	Duration of Use - Chronic (min)	5.00E+00
2. Inputs; b. Product/Article Properties	Film Thickness on Skin (cm)	8.21E-05
2. Inputs; b. Product/Article Properties	Frequency of Use - Acute (events/day)	1.00E+00
2. Inputs; b. Product/Article Properties	Frequency of Use - Chronic (events/year)	1.20E+01
2. Inputs; b. Product/Article Properties	Mass of product used - acute (g/use)	2.70E-01
2. Inputs; b. Product/Article Properties	Mass of product used - chronic (g/use)	2.70E-01
2. Inputs; b. Product/Article Properties	Product Dilution Fraction (-)	1.00E+00
2. Inputs; b. Product/Article Properties	Skin Permeability Coefficient (cm/hr)	3.41E-03
2. Inputs; c. Environment Inputs	Air Exchange Rate, Zone 1 (per hour)	4.50E-01
2. Inputs; c. Environment Inputs	Air Exchange Rate, Zone 2 (per hour)	4.50E-01
2. Inputs; c. Environment Inputs	Building Volume (m3)	4.92E+02
2. Inputs; c. Environment Inputs	Interzone Ventilation Rate (m3/hr)	8.86E+01
2. Inputs; c. Environment Inputs	Use Environment Volume (m3)	9.00E+01

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Exposure Factors				
Receptor	Body Weight	Inhalation After Use	Inhalation During Use	Surface Area to Body Weight
Youth (11-15 years)	56.8	0.63	0.78	6.34
Child (6-10 years)	31.8	0.5	0.66	8.02
Small Child (3-5 years)	18.6	0.42	0.66	9.95
Infant (1-2 years)	12.6	0.35	0.72	11.51
Infant (<1 year)	7.8	0.23	0.46	13.46
Adult (≥21 years)	80	0.61	0.74	6.19
Youth (16-20 years)	71.6	0.68	0.72	5.8

Notes: body weight = kg; dust ingestion rate = mg/day; inhalation rate after use = m3/hr; inhalation rate during use = m3/hr; surface area to body weight ratio = m2/kg; transfer coefficient = cm2/hr

Receptor	Exposure Duration - Chronic	Exposure Duration - Acute	Avg Time - Chronic	Avg Time - Acute
Youth (11-15 years)	1	1	1	1
Child (6-10 years)	1	1	1	1
Small Child (3-5 years)	1	1	1	1
Infant (1-2 years)	1	1	1	1
Infant (<1 year)	1	1	1	1
Adult (≥21 years)	1	1	1	1
Youth (16-20 years)	1	1	1	1

Notes: averaging time - chronic = years; averaging time - acute = days; exposure duration - chronic = years; averaging time - acute = days