

84332-1009

## Play Dough in red, blue, yellow, pink neon, orange neon for Creative Sets (Play Dough Sets)

### Early Fantasies Factory LLC

Safety Data Sheet (Conforms to Annex II of REACH (1907/2006) - Regulation 2020/878)

SDS No.: HKGH0283856001

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### SECTION 1 Identification of the substance / mixture and of the company / undertaking

#### 1.1. Product Identifier

Product name	Play Dough in red, blue, yellow, pink neon, orange neon for Creative Sets (Play Dough Sets)
Synonyms	Modeling clay, clay, modeling dough, plasticine, soft plasticine, soft dough, salty dough, color dough. Trade name: Lovin, Lovin Do
Other means of identification	Not Available

#### 1.2. Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses	Developing and educational toys for children
Uses advised against	Not Applicable

#### 1.3. Details of the supplier of the safety data sheet

Registered company name	Early Fantasies Factory LLC
Address	80300, Ukraine, Zhovkva, Vokzalna 32b Street
Telephone	+380979444140
Fax	Not Available
Website	Not Available
Email	maksymiv.y@oktoclay.com

#### 1.4. Emergency telephone number

Association / Organisation	Early Fantasies Factory LLC
Emergency telephone numbers	+380979444140 (Operation hours: 09:00-18:00)
Other emergency telephone numbers	Not Available

### SECTION 2 Hazards identification

#### 2.1. Classification of the substance or mixture

Classification according to regulation (EC) No 1272/2008 [CLP] and amendments	Not Classified
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**2.2. Label elements**

Hazard pictogram(s)	Not Applicable
Signal word	Not Applicable

**Hazard statement(s)**

Not Applicable

**Supplementary statement(s)**

EUH208	Contains methylchloroisothiazolinone and methylisothiazolinone. May produce an allergic reaction.
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**Precautionary statement(s) General**

Not Applicable

**Precautionary statement(s) Prevention**

Not Applicable

**Precautionary statement(s) Response**

Not Applicable

**Precautionary statement(s) Storage**

Not Applicable

**Precautionary statement(s) Disposal**

Not Applicable

**2.3. Other hazards**

C.I. Pigment Blue 15	Listed in the Europe Regulation (EU) 2018/1881 Specific Requirements for Endocrine Disruptors
C.I. Pigment Green 7	Listed in the Europe Regulation (EU) 2018/1881 Specific Requirements for Endocrine Disruptors

**SECTION 3 Composition / information on ingredients****3.1. Substances**

See 'Composition on ingredients' in Section 3.2

**3.2. Mixtures**

1. CAS No 2. EC No 3. Index No 4. REACH No	%[weight]	Name	Classification according to regulation (EC) No 1272/2008 [CLP] and amendments	SCL / M-Factor	Nanoform Particle Characteristics
1.130498-22-5 2.603-421-3 3. Not Available 4. Not Available	44	wheat flour	Not Classified	Not Available	Not Available
1.7732-18-5 2.231-791-2 3. Not Available 4. Not Available	42	water	Not Classified	Not Available	Not Available

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1. CAS No 2. EC No 3. Index No 4. REACH No	%[weight]	Name	Classification according to regulation (EC) No 1272/2008 [CLP] and amendments	SCL / M-Factor	Nanoform Particle Characteristics
1.7647-14-5 2.231-598-3 3. Not Available 4.01-2119485491-33-XXXX	4.49	<u>sodium chloride</u>	Not Classified	Not Available	Not Available
1.10043-52-4 2.233-140-8 3.017-013-00-2 4.01-2119494219-28-XXXX	3.5	<u>calcium chloride</u>	Eye damage/eye irritation Hazard Category 2 (H319)	Not Available	Not Available
1.8042-47-5 2.232-455-8 3. Not Available 4.01-2119487078-27-XXXX 01-2119489867-12-XXXX	2.2	<u>white mineral oil</u> (petroleum)	Not Classified	Not Available	Not Available
1.7778-18-9 2.231-900-3 3. Not Available 4. Not Available	1.8	<u>Calcium sulfate</u>	Not Classified (Substance with a Union workplace exposure limit)	Not Available	Not Available
1.102-76-1 2.203-051-9 3. Not Available 4. Not Available	0.4	<u>Triacetin:</u> glyceryl triacetate	Not Classified	Not Available	Not Available
1.24634-61-5 2.246-376-1 3.019-003-00-3 4.01-2119950315-41-XXXX	0.25	<u>Potassium (E,E)-hexa-2,4-dienoate:</u> potassium sorbate	Eye damage/eye irritation Hazard Category 2 (H319)	Not Available	Not Available
1.17927-65-0 2.605-852-2 3. Not Available 4. Not Available	0.2	<u>Aluminium sulfate hydrate:</u> aluminium sulfate, hydrated (filter alum)	Eye damage/eye irritation Hazard Category 1 (H318)	Not Available	Not Available
1.157627-86-6 2.500-337-8 3. Not Available 4. Not Available	0.2	<u>alcohols C13-15-branched and linear, ethoxylated</u>	Acute toxicity (oral) Hazard Category 4 (H302), Eye damage/eye irritation Hazard Category 1 (H318), Aquatic Chronic Hazard Category 3 (H412)	Not Available	Not Available
1.532-32-1 2.208-534-8 3. Not Available 4.01-2119460683-35-XXXX	0.2	<u>sodium benzoate</u>	Eye damage/eye irritation Hazard Category 2 (H319)	Not Available	Not Available
1.147-14-8 2.205-685-1 3. Not Available 4.01-2119458771-32-XXXX	<0.06	<u>29H,31H-phthalocyaninato(2-):N29,N30,N31,N32-copper:</u> C.I. Pigment Blue 15	Not Classified (Substance with a Union workplace exposure limit)	Not Available	Not Available
1.9005-25-8 2.232-679-6 3. Not Available 4. Not Available	0.05	<u>starch</u>	Not Classified (Substance with a Union workplace exposure limit)	Not Available	Not Available

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1.CAS No 2.EC No 3.Index No 4.REACH No	%[weight]	Name	Classification according to regulation (EC) No 1272/2008 [CLP] and amendments	SCL / M-Factor	Nanoform Particle Characteristics
1.91052-47-0 2.293-208-8 3.607-196-00-2 4.Not Available	0.05	<u>Glycerides, C16-18 mono-; glycerides, mixed coco, decanoyl and octanoyl</u>	Not Classified	Not Available	Not Available
1.56-81-5 2.200-289-5 3.Not Available 4.01-2119471987-18-XXXX	0.05	<u>glycerol</u>	Not Classified (Substance with a Union workplace exposure limit)	Not Available	Not Available
1.3068-39-1 2.221-326-1 3.Not Available 4.01-2120107344-68-XXXX	<0.015	<u>3,6-bis(ethylamino)-9-[2-(methoxycarbonyl)phenyl]-2,7-dimethylxanthylum chloride; C.I. Basic Red 1:1</u>	Acute toxicity (oral) Hazard Category 4 (H302), Skin Sensitizer Category 1B (H317), Eye damage/eye irritation Hazard Category 1 (H318), Acute toxicity (inhalation) Hazard Category 1 (H330), Aquatic Acute Hazard Category 1 (H400), Aquatic Chronic Hazard Category 1 (H410)	H400: M=10 H410: M=1	Not Available
1.77-92-9 2.201-069-1 3.Not Available 4.01-2119457026-42-XXXX	0.01	<u>citric acid</u>	Eye damage/eye irritation Hazard Category 2 (H319)	Not Available	Not Available
1.2390-63-8 2.219-233-6 3.Not Available 4.01-2120107345-66-XXXX	<0.006	<u>3,6-bis(diethylamino)-9-[2-(ethoxycarbonyl)phenyl]xanthylum chloride; C.I. Basic Violet 11 chloride</u>	Acute toxicity (Oral) Hazard Category 4 (H301), Eye damage/eye irritation Hazard Category 1 (H318), Acute Toxicity (Inhalation) Hazard Category 4 (H332), Aquatic Acute Hazard Category 1 (H400), Aquatic Chronic Hazard Category 1 (H410)	H400: M=100 H410: M=10	Not Available
1.13463-67-7 2.236-675-5 3.Not Available 4.01-2119954396-27-XXXX 01-2119489379-17-XXXX	<0.006	<u>titanium dioxide</u> (CI 77891) (diameter> 10 µm)	Not Classified (Substance with a Union workplace exposure limit)	Not Available	Not Available
1.1328-53-6 2.215-524-7 3.Not Available 4.01-2119459333-39-XXXX	<0.0006	<u>Polychloro copper phthalocyanine; C.I. Pigment Green 7</u>	Not Classified (Substance with a Union workplace exposure limit)	Not Available	Not Available

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1. CAS No 2. EC No 3. Index No 4. REACH No	%[weight]	Name	Classification according to regulation (EC) No 1272/2008 [CLP] and amendments	SCL / M-Factor	Nanoform Particle Characteristics
1.2682-20-4 2.220-239-6 3.613-326-00-9 4. Not Available	<0.0006	<u>2-methylisothiazol-3(2H)-one:</u> 2-methyl-4-isothiazolin-3-one	Acute toxicity (oral) Hazard Category 3 (H301), Acute toxicity (dermal) Hazard Category 3 (H311), Skin Corrosion/Irritation Category 1B (H314), Skin Sensitizer Category 1A (H317), Eye damage/eye irritation Hazard Category 1 (H318), Acute toxicity (inhalation) Hazard Category 1 (H330), Aquatic Acute Hazard Category 1 (H400), Aquatic Chronic Hazard Category 1 (H410)	H317: C≥0.0015% H400: M=10 H410: M=1	Not Available
1.55965-84-9 2.611-341-5 3.613-167-00-5 4.01-2120764691-48-XXXX	<0.0006	<u>2-Methyl-1,2-thiazol-3(2H)-one-5-chloro-2-methyl-1,2-thiazol-3(2H)-one;</u> isothiazolinones, mixed (methylchloroisothiazolinone and methylisothiazolinone)	Acute toxicity (oral) Hazard Category 3 (H301), Acute toxicity (dermal) Hazard Category 1 (H310), Skin Corrosion/Irritation Category 1C (H314), Skin Sensitizer Category 1A (H317), Eye damage/eye irritation Hazard Category 1 (H318), Acute toxicity (inhalation) Hazard Category 1 (H330), Aquatic Acute Hazard Category 1 (H400), Aquatic Chronic Hazard Category 1 (H410)	H314: C≥0.6% H315: 0.06%≤C<0.6% H317: C≥0.0015% H318: C≥0.6% H319: 0.06%≤C<0.6% H400: M=100 H410: M=100	Not Available

**SECTION 4 First aid measures****4.1. Description of first aid measures**

<b>Eye Contact</b>	If this product comes in contact with eyes: • Wash out immediately with water. • If irritation continues, seek medical attention. • Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.
<b>Skin Contact</b>	• Wash hands after use.
<b>Inhalation</b>	• Other measures are usually unnecessary.
<b>Ingestion</b>	• Immediately give a glass of water. • First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.

**4.2 Most important symptoms and effects, both acute and delayed**

See Section 11

**4.3. Indication of any immediate medical attention and special treatment needed**

Treat symptomatically.

**SECTION 5 Firefighting measures****5.1. Extinguishing media**

The product contains a substantial proportion of water, therefore there are no restrictions on the type of extinguishing media which may be used. Choice of extinguishing media should take into account surrounding areas.

Though the material is non-combustible, evaporation of water from the mixture, caused by the heat of nearby fire, may produce floating layers of combustible substances.

In such an event consider:

- ▶ foam.
- ▶ dry chemical powder.
- ▶ carbon dioxide.

**5.2. Special hazards arising from the substrate or mixture**

<b>Fire Incompatibility</b>	None known.
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**5.3. Advice for firefighters**

<b>Fire Fighting</b>	<ul style="list-style-type: none"> <li>▶ Alert Fire Brigade and tell them location and nature of hazard.</li> <li>▶ Wear breathing apparatus plus protective gloves in the event of a fire.</li> <li>▶ Prevent, by any means available, spillage from entering drains or water courses.</li> <li>▶ Use fire fighting procedures suitable for surrounding area.</li> <li>▶ DO NOT approach containers suspected to be hot.</li> <li>▶ Cool fire exposed containers with water spray from a protected location.</li> <li>▶ If safe to do so, remove containers from path of fire.</li> <li>▶ Equipment should be thoroughly decontaminated after use.</li> </ul>
<b>Fire/Explosion Hazard</b>	<ul style="list-style-type: none"> <li>▶ Solid which exhibits difficult combustion or is difficult to ignite.</li> <li>▶ Avoid generating dust, particularly clouds of dust in a confined or unventilated space as dusts may form an explosive mixture with air, and any source of ignition, i.e. flame or spark, will cause fire or explosion.</li> <li>▶ Dust clouds generated by the fine grinding of the solid are a particular hazard; accumulations of fine dust (420 micron or less) may burn rapidly and fiercely if ignited; once initiated larger particles up to 1400 microns diameter will contribute to the propagation of an explosion.</li> <li>▶ A dust explosion may release large quantities of gaseous products; this in turn creates a subsequent pressure rise of explosive force capable of damaging plant and buildings and injuring people.</li> <li>▶ Usually the initial or primary explosion takes place in a confined space such as plant or machinery, and can be of sufficient force to damage or rupture the plant. If the shock wave from the primary explosion enters the surrounding area, it will disturb any settled dust layers, forming a second dust cloud, and often initiate a much larger secondary explosion. All large scale explosions have resulted from chain reactions of this type.</li> <li>▶ Dry dust can also be charged electrostatically by turbulence, pneumatic transport, pouring, in exhaust ducts and during transport.</li> <li>▶ Build-up of electrostatic charge may be prevented by bonding and grounding.</li> <li>▶ Powder handling equipment such as dust collectors, dryers and mills may require additional protection measures such as explosion venting.</li> <li>▶ All movable parts coming in contact with this material should have a speed of less than 1-metre/sec.</li> </ul>

Combustion products include:  
 carbon monoxide (CO)  
 carbon dioxide (CO<sub>2</sub>)  
 hydrogen cyanide  
 nitrogen oxides (NO<sub>x</sub>)  
 metal oxides  
 other pyrolysis products typical of burning organic material.  
 CARE: Water in contact with hot liquid may cause foaming and a steam explosion with wide scattering of hot oil and possible severe burns. Foaming may cause overflow of containers and may result in possible fire.

## SECTION 6 Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

See section 8

### 6.2. Environmental precautions

See section 12

### 6.3. Methods and material for containment and cleaning up

<b>Minor Spills</b>	<ul style="list-style-type: none"> <li>▸ Clean up all spills immediately.</li> <li>▸ Avoid breathing vapours and contact with skin and eyes.</li> <li>▸ Control personal contact with the substance, by using protective equipment.</li> <li>▸ Contain and absorb spill with sand, earth, inert material or vermiculite.</li> <li>▸ Wipe up.</li> <li>▸ Place in a suitable, labelled container for waste disposal.</li> </ul>
<b>Major Spills</b>	<ul style="list-style-type: none"> <li>▸ Clear area of personnel and move upwind.</li> <li>▸ Alert Fire Brigade and tell them location and nature of hazard.</li> <li>▸ Control personal contact with the substance, by using protective equipment and dust respirator.</li> <li>▸ Prevent spillage from entering drains, sewers or water courses.</li> <li>▸ Avoid generating dust.</li> <li>▸ Sweep, shovel up. Recover product wherever possible.</li> <li>▸ Put residues in labelled plastic bags or other containers for disposal.</li> <li>▸ If contamination of drains or waterways occurs, advise emergency services.</li> </ul>

### 6.4. Reference to other sections

Personal Protective Equipment advice is contained in Section 8 of the SDS.

## SECTION 7 Handling and storage

### 7.1. Precautions for safe handling

<b>Safe handling</b>	<ul style="list-style-type: none"> <li>▸ Avoid contact with incompatible materials.</li> <li>▸ When handling, DO NOT eat, drink or smoke.</li> <li>▸ Keep containers securely sealed when not in use.</li> <li>▸ Always wash hands with soap and water after handling.</li> <li>▸ Use good occupational work practice.</li> <li>▸ Observe manufacturer's storage and handling recommendations contained within this SDS.</li> </ul>
<b>Fire and explosion protection</b>	<ul style="list-style-type: none"> <li>▸ See section 5</li> </ul>

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<b>Other information</b>	<ul style="list-style-type: none"> <li>Store in original containers.</li> <li>Keep containers securely sealed.</li> <li>Store in a cool, dry, well-ventilated area.</li> <li>Store away from incompatible materials and foodstuff containers.</li> <li>Protect containers against physical damage and check regularly for leaks.</li> <li>Observe manufacturer's storage and handling recommendations contained within this SDS.</li> </ul>
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**7.2. Conditions for safe storage, including any incompatibilities**

<b>Suitable container</b>	<ul style="list-style-type: none"> <li>Lined metal can, lined metal pail/ can.</li> <li>Plastic pail.</li> <li>Polyliner drum.</li> <li>Packing as recommended by manufacturer.</li> <li>Check all containers are clearly labelled and free from leaks.</li> </ul>
<b>Storage incompatibility</b>	<p>Avoid contamination of water, foodstuffs, feed or seed.</p> <p>It is suggested that crystalline proteins are explosive as evidenced by the easily induced shattering of microcrystals. This may be a consequence of the implosive collapse of a metastable ordering of molecules (Bretherick's Handbook of Reactive Chemical Hazards).</p> <p>A study was performed to obtain quantitative data on the nature and yields of oxidation products formed by a prototypic oxidant system (HO<sup>•</sup> /O<sub>2</sub>) on small peptides, including Val-Gly-Val-Ala-Pro-Gly. Study results indicated that hydroperoxide formation occurred nonrandomly (Pro &gt; Val &gt; Ala &gt; Gly) and that the formation of hydroperoxide was inversely related to carbonyl yields (both peptide-bound and released).</p> <p>Multiple alcohols were generated at both side-chain and backbone sites. Summation of the product concentrations provided clear evidence for the occurrence of chain reactions in peptides exposed to HO<sup>•</sup> /O<sub>2</sub>, with the overall product yields exceeding that of the initial HO<sup>•</sup> generated.</p>

**7.3. Specific end use(s)**

See section 1.2

**SECTION 8 Exposure controls / personal protection****8.1. Control parameters**

Ingredient	DNELs Exposure Pattern Worker	PNECs Compartment
sodium chloride	<p>Dermal 295.52 mg/kg bw/day (Systemic, Chronic) Inhalation 2 068.62 mg/m<sup>3</sup> (Systemic, Chronic) Dermal 295.52 mg/kg bw/day (Systemic, Acute) Inhalation 2 068.62 mg/m<sup>3</sup> (Systemic, Acute) <i>Dermal 126.65 mg/kg bw/day (Systemic, Chronic)</i> *</p> <p><i>Inhalation 443.28 mg/m<sup>3</sup> (Systemic, Chronic)</i> *</p> <p><i>Oral 126.65 mg/kg bw/day (Systemic, Chronic)</i> *</p> <p><i>Dermal 126.65 mg/kg bw/day (Systemic, Acute)</i> *</p> <p><i>Inhalation 443.28 mg/m<sup>3</sup> (Systemic, Acute)</i> *</p> <p><i>Oral 126.65 mg/kg bw/day (Systemic, Acute)</i> *</p>	<p>5 mg/L (Water (Fresh)) 19 (Water (Marine)) 4.86 mg/kg soil dw (Soil) 500 mg/L (STP)</p>
calcium chloride	<p>Inhalation 5 mg/m<sup>3</sup> (Local, Chronic) Inhalation 10 mg/m<sup>3</sup> (Local, Acute) <i>Inhalation 2.5 mg/m<sup>3</sup> (Local, Chronic)</i> *</p> <p><i>Inhalation 5 mg/m<sup>3</sup> (Local, Acute)</i> *</p>	<p>0.122 mg/L (Water (Fresh)) 0.012 mg/L (Water - Intermittent release) 1.217 mg/L (Water (Marine)) 62.6 mg/kg soil dw (Soil) 94 mg/L (STP)</p>

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Ingredient	DNELs Exposure Pattern Worker	PNECs Compartment
white mineral oil (petroleum)	Dermal 217.05 mg/kg bw/day (Systemic, Chronic) Inhalation 164.56 mg/m <sup>3</sup> (Systemic, Chronic) <i>Dermal 93.02 mg/kg bw/day (Systemic, Chronic) *</i> <i>Inhalation 34.78 mg/m<sup>3</sup> (Systemic, Chronic) *</i> <i>Oral 25 mg/kg bw/day (Systemic, Chronic) *</i>	Not Available
calcium sulfate	Inhalation 21.17 mg/m <sup>3</sup> (Systemic, Chronic) Inhalation 5 082 mg/m <sup>3</sup> (Systemic, Acute) <i>Inhalation 5.29 mg/m<sup>3</sup> (Systemic, Chronic) *</i> <i>Oral 1.52 mg/kg bw/day (Systemic, Chronic) *</i> <i>Inhalation 3 811 mg/m<sup>3</sup> (Systemic, Acute) *</i> <i>Oral 11.4 mg/kg bw/day (Systemic, Acute) *</i>	100 mg/L (STP)
glyceryl triacetate	Dermal 5 mg/kg bw/day (Systemic, Chronic) Inhalation 35.275 mg/m <sup>3</sup> (Systemic, Chronic) <i>Dermal 2.5 mg/kg bw/day (Systemic, Chronic) *</i> <i>Inhalation 8.7 mg/m<sup>3</sup> (Systemic, Chronic) *</i> <i>Oral 2.5 mg/kg bw/day (Systemic, Chronic) *</i>	1.88 mg/L (Water (Fresh)) 0.188 mg/L (Water - Intermittent release) 1 mg/L (Water (Marine)) 4.73 mg/kg sediment dw (Sediment (Fresh Water)) 0.47 mg/kg sediment dw (Sediment (Marine)) 0.57 mg/kg soil dw (Soil) 1088 mg/L (STP) 0.07 g/kg food (Oral)
potassium sorbate	Dermal 40 mg/kg bw/day (Systemic, Chronic) Inhalation 17.63 mg/m <sup>3</sup> (Systemic, Chronic) Dermal 20 mg/kg bw/day (Systemic, Chronic) * Inhalation 52.17 mg/m <sup>3</sup> (Systemic, Chronic) * Oral 2 mg/kg bw/day (Systemic, Chronic) * Dermal 0.17 mg/cm <sup>2</sup> (Local, Chronic) * Inhalation 26.08 mg/m <sup>3</sup> (Local, Chronic) *	1 mg/L (Water (Fresh)) 0.1 mg/L (Water - Intermittent release) 4.8 mg/L (Water (Marine)) 3.6 mg/kg sediment dw (Sediment (Fresh Water)) 0.36 mg/kg sediment dw (Sediment (Marine)) 1.67 mg/kg soil dw (Soil) 10 mg/L (STP)
aluminium sulfate, hydrated (filter alum)	Dermal 1.71 mg/kg bw/day (Systemic, Chronic) Inhalation 3 mg/m <sup>3</sup> (Systemic, Chronic) Dermal 0.882 mg/cm <sup>2</sup> (Local, Chronic) Inhalation 3 mg/m <sup>3</sup> (Local, Chronic) Dermal 46.7 mg/kg bw/day (Systemic, Acute) Inhalation 2 mg/m <sup>3</sup> (Systemic, Acute) Dermal 0.882 mg/cm <sup>2</sup> (Local, Acute) Inhalation 2 mg/m <sup>3</sup> (Local, Acute) Dermal 0.855 mg/kg bw/day (Systemic, Chronic) * Inhalation 1.5 mg/m <sup>3</sup> (Systemic, Chronic) * Oral 1.9 mg/kg bw/day (Systemic, Chronic) * Dermal 0.441 mg/cm <sup>2</sup> (Local, Chronic) * Inhalation 1.5 mg/m <sup>3</sup> (Local, Chronic) * Dermal 23.35 mg/kg bw/day (Systemic, Acute) * Inhalation 1 mg/m <sup>3</sup> (Systemic, Acute) * Oral 92.4 mg/kg bw/day (Systemic, Acute) * Dermal 0.441 mg/cm <sup>2</sup> (Local, Acute) * Inhalation 1 mg/m <sup>3</sup> (Local, Acute) *	4.5 mg/L (Water (Fresh)) 64 mg/L (Water - Intermittent release) 30.11 mg/L (Water (Marine)) 10 mg/kg sediment dw (Sediment (Fresh Water)) 31.4 mg/kg sediment dw (Sediment (Marine)) 58 mg/kg soil dw (Soil) 60.2 mg/L (STP) 150 mg/kg food (Oral)

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Ingredient	DNELs Exposure Pattern Worker	PNECs Compartment
sodium benzoate	Dermal 62.5 mg/kg bw/day (Systemic, Chronic) Inhalation 3 mg/m <sup>3</sup> (Systemic, Chronic) Inhalation 0.1 mg/m <sup>3</sup> (Local, Chronic) <i>Dermal 31.25 mg/kg bw/day (Systemic, Chronic)</i> * <i>Inhalation 1.5 mg/m<sup>3</sup> (Systemic, Chronic)</i> * <i>Oral 16.6 mg/kg bw/day (Systemic, Chronic)</i> * <i>Inhalation 0.06 mg/m<sup>3</sup> (Local, Chronic)</i> *	0.13 mg/L (Water (Fresh)) 0.013 mg/L (Water - Intermittent release) 305 µg/L (Water (Marine)) 1.76 mg/kg sediment dw (Sediment (Fresh Water)) 0.176 mg/kg sediment dw (Sediment (Marine)) 0.06 mg/kg soil dw (Soil) 10 mg/L (STP) 300 mg/kg food (Oral)
glycerides, mixed coco, decanoyl and octanoyl	Dermal 10 mg/kg bw/day (Systemic, Chronic) Inhalation 17.632 mg/m <sup>3</sup> (Systemic, Chronic) <i>Dermal 5 mg/kg bw/day (Systemic, Chronic)</i> * <i>Inhalation 4.348 mg/m<sup>3</sup> (Systemic, Chronic)</i> * <i>Oral 2.5 mg/kg bw/day (Systemic, Chronic)</i> *	0.001 mg/L (Water (Fresh)) 0 mg/L (Water - Intermittent release) 0.056 mg/L (Water (Marine)) 0.005 mg/kg sediment dw (Sediment (Fresh Water)) 0.001 mg/kg sediment dw (Sediment (Marine)) 0.018 mg/kg soil dw (Soil) 0.8 mg/L (STP) 0.03 g/kg food (Oral)
glycerol	Inhalation 220 mg/m <sup>3</sup> (Local, Chronic) <i>Inhalation 132 mg/m<sup>3</sup> (Local, Chronic)</i> *	0.885 mg/L (Water (Fresh)) 0.088 mg/L (Water - Intermittent release) 8.85 mg/L (Water (Marine)) 3.3 mg/kg sediment dw (Sediment (Fresh Water)) 0.33 mg/kg sediment dw (Sediment (Marine)) 0.141 mg/kg soil dw (Soil) 1000 mg/L (STP) 0.44 mg/L (Water (Fresh)) 0.044 mg/L (Water - Intermittent release) 34.6 mg/kg sediment dw (Sediment (Fresh Water)) 3.46 mg/kg sediment dw (Sediment (Marine)) 33.1 mg/kg soil dw (Soil) 1000 mg/L (STP)
citric acid	Not Available	0.127 mg/L (Water (Fresh)) 1 mg/L (Water - Intermittent release) 0.61 mg/L (Water (Marine)) 1000 mg/kg sediment dw (Sediment (Fresh Water)) 100 mg/kg sediment dw (Sediment (Marine)) 100 mg/kg soil dw (Soil) 100 mg/L (STP)
titanium dioxide	<i>Oral 700 mg/kg bw/day (Systemic, Chronic)</i> *	0 mg/L (Water (Fresh)) 0 mg/L (Water - Intermittent release) 0 mg/L (Water (Marine)) 0.989 mg/kg sediment dw (Sediment (Fresh Water)) 0.099 mg/kg sediment dw (Sediment (Marine)) 0.198 mg/kg soil dw (Soil) 0.33 mg/L (STP) 0.1 mg/kg food (Oral)
C.I. Basic Red 1:1	Dermal 0.02 mg/kg bw/day (Systemic, Chronic) Inhalation 0.06 mg/m <sup>3</sup> (Systemic, Chronic) Dermal 0.125 mg/cm <sup>2</sup> (Local, Chronic) Dermal 0.06 mg/kg bw/day (Systemic, Acute) Inhalation 0.2 mg/m <sup>3</sup> (Systemic, Acute) Dermal 0.25 mg/cm <sup>2</sup> (Local, Acute)	10 mg/kg sediment dw (Sediment (Fresh Water)) 1 mg/kg sediment dw (Sediment (Marine)) 1 mg/kg soil dw (Soil)
C.I. Pigment Blue 15	Dermal 450 mg/kg bw/day (Systemic, Chronic) Inhalation 4 mg/m <sup>3</sup> (Systemic, Chronic) <i>Dermal 225 mg/kg bw/day (Systemic, Chronic)</i> * <i>Oral 45 mg/kg bw/day (Systemic, Chronic)</i> *	10 mg/kg sediment dw (Sediment (Fresh Water)) 1 mg/kg sediment dw (Sediment (Marine)) 1 mg/kg soil dw (Soil)

## Play Dough in red, blue, yellow, pink neon, orange neon for Creative Sets (Play Dough Sets)

Ingredient	DNELs Exposure Pattern Worker	PNECs Compartment
2-methyl-4-isothiazolin-3-one	Inhalation 0.021 mg/m <sup>3</sup> (Local, Chronic) Inhalation 0.043 mg/m <sup>3</sup> (Local, Acute) Oral 0.027 mg/kg bw/day (Systemic, Chronic) * Inhalation 0.021 mg/m <sup>3</sup> (Local, Chronic) * Oral 0.053 mg/kg bw/day (Systemic, Acute) * Inhalation 0.043 mg/m <sup>3</sup> (Local, Acute) *	3.39 µg/L (Water (Fresh)) 3.39 µg/L (Water - Intermittent release) 3.39 µg/L (Water (Marine)) 0.047 mg/kg soil dw (Soil) 0.23 mg/L (STP)
isothiazolinones, mixed	Inhalation 0.02 mg/m <sup>3</sup> (Local, Chronic) Inhalation 0.04 mg/m <sup>3</sup> (Local, Acute) Oral 0.09 mg/kg bw/day (Systemic, Chronic) * Inhalation 0.02 mg/m <sup>3</sup> (Local, Chronic) * Oral 0.11 mg/kg bw/day (Systemic, Acute) * Inhalation 0.04 mg/m <sup>3</sup> (Local, Acute) *	3.39 µg/L (Water (Fresh)) 3.39 µg/L (Water - Intermittent release) 3.39 µg/L (Water (Marine)) 0.027 mg/kg sediment dw (Sediment (Fresh Water)) 0.027 mg/kg sediment dw (Sediment (Marine)) 0.01 mg/kg soil dw (Soil) 0.23 mg/L (STP)

\* Values for General Population

## Occupational Exposure Limits (OEL)

## INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
UK Workplace Exposure Limits (WELs)	calcium sulfate	Gypsum: inhalable dust	10 mg/m <sup>3</sup>	Not Available	Not Available	Not Available
UK Workplace Exposure Limits (WELs)	calcium sulfate	Gypsum: respirable	4 mg/m <sup>3</sup>	Not Available	Not Available	Not Available
UK Workplace Exposure Limits (WELs)	aluminium sulfate, hydrated (filter alum)	Aluminium salts, soluble	2 mg/m <sup>3</sup>	Not Available	Not Available	Not Available
UK Workplace Exposure Limits (WELs)	starch	Starch: respirable	4 mg/m <sup>3</sup>	Not Available	Not Available	Not Available
UK Workplace Exposure Limits (WELs)	starch	Starch: total inhalable	10 mg/m <sup>3</sup>	Not Available	Not Available	Not Available
UK Workplace Exposure Limits (WELs)	glycerol	Glycerol, mist	10 mg/m <sup>3</sup>	Not Available	Not Available	Not Available
UK Workplace Exposure Limits (WELs)	titanium dioxide	Titanium dioxide: total inhalable	10 mg/m <sup>3</sup>	Not Available	Not Available	Not Available
UK Workplace Exposure Limits (WELs)	titanium dioxide	Titanium dioxide: respirable	4 mg/m <sup>3</sup>	Not Available	Not Available	Not Available
UK Workplace Exposure Limits (WELs)	C.I. Pigment Blue 15	Copper and compounds: dust and mists (as Cu)	1 mg/m <sup>3</sup>	2 mg/m <sup>3</sup>	Not Available	Not Available
UK Workplace Exposure Limits (WELs)	C.I. Pigment Green 7	Copper and compounds: dust and mists (as Cu)	1 mg/m <sup>3</sup>	2 mg/m <sup>3</sup>	Not Available	Not Available

## Play Dough in red, blue, yellow, pink neon, orange neon for Creative Sets (Play Dough Sets)

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
UK Workplace Exposure Limits (WELs)	calcium sulfate	Gypsum: respirable	4 mg/m3	Not Available	Not Available	Not Available
UK Workplace Exposure Limits (WELs)	aluminium sulfate, hydrated (filter alum)	Aluminium salts, soluble	2 mg/m3	Not Available	Not Available	Not Available
UK Workplace Exposure Limits (WELs)	starch	Starch: respirable	4 mg/m3	Not Available	Not Available	Not Available
UK Workplace Exposure Limits (WELs)	starch	Starch: total inhalable	10 mg/m3	Not Available	Not Available	Not Available
UK Workplace Exposure Limits (WELs)	glycerol	Glycerol, mist	10 mg/m3	Not Available	Not Available	Not Available
UK Workplace Exposure Limits (WELs)	titanium dioxide	Titanium dioxide: total inhalable	10 mg/m3	Not Available	Not Available	Not Available
UK Workplace Exposure Limits (WELs)	titanium dioxide	Titanium dioxide: respirable	4 mg/m3	Not Available	Not Available	Not Available
UK Workplace Exposure Limits (WELs)	C.I. Pigment Blue 15	Copper and compounds: dust and mists (as Cu)	1 mg/m3	2 mg/m3	Not Available	Not Available
UK Workplace Exposure Limits (WELs)	C.I. Pigment Green 7	Copper and compounds: dust and mists (as Cu)	1 mg/m3	2 mg/m3	Not Available	Not Available

**Emergency Limits**

Ingredient	TEEL-1	TEEL-2	TEEL-3
sodium chloride	0.5 ppm	2 ppm	20 ppm
calcium chloride	16 mg/m3	170 mg/m3	1,100 mg/m3
calcium chloride	12 mg/m3	130 mg/m3	790 mg/m3
calcium chloride	13 mg/m3	140 mg/m3	850 mg/m3
calcium chloride	24 mg/m3	260 mg/m3	1,600 mg/m3
white mineral oil (petroleum)	140 mg/m3	1,500 mg/m3	8,900 mg/m3
glyceryl triacetate	19 mg/m3	210 mg/m3	1,200 mg/m3
aluminium sulfate, hydrated (filter alum)	38 mg/m3	64 mg/m3	380 mg/m3
sodium benzoate	61 mg/m3	680 mg/m3	810 mg/m3
starch	30 mg/m3	330 mg/m3	2,000 mg/m3
glycerides, mixed coco, decanoyl and octanoyl	3.9 ppm	43 ppm	260 ppm
glycerides, mixed coco, decanoyl and octanoyl	0.66 mg/m3	7.2 mg/m3	43 mg/m3
glycerol	45 mg/m3	180 mg/m3	1,100 mg/m3

## Play Dough in red, blue, yellow, pink neon, orange neon for Creative Sets (Play Dough Sets)

Ingredient	TEEL-1	TEEL-2	TEEL-3
titanium dioxide	30 mg/m <sup>3</sup>	330 mg/m <sup>3</sup>	2,000 mg/m <sup>3</sup>
Ingredient	Original IDLH	Revised IDLH	
wheat flour	Not Available	Not Available	
water	Not Available	Not Available	
sodium chloride	Not Available	Not Available	
calcium chloride	Not Available	Not Available	
white mineral oil (petroleum)	2,500 mg/m <sup>3</sup>	Not Available	
calcium sulfate	Not Available	Not Available	
glyceryl triacetate	Not Available	Not Available	
potassium sorbate	Not Available	Not Available	
aluminium sulfate, hydrated (filter alum)	Not Available	Not Available	
alcohols C13-15-branched and linear, ethoxylated	Not Available	Not Available	
sodium benzoate	Not Available	Not Available	
starch	Not Available	Not Available	
glycerides, mixed coco, decanoyl and octanoyl	Not Available	Not Available	
glycerol	Not Available	Not Available	
citric acid	Not Available	Not Available	
titanium dioxide	5,000 mg/m <sup>3</sup>	Not Available	
C.I. Basic Red 1:1	Not Available	Not Available	
C.I. Basic Violet 11 chloride	Not Available	Not Available	
C.I. Pigment Blue 15	Not Available	Not Available	
C.I. Pigment Green 7	Not Available	Not Available	
2-methyl-4-isothiazolin-3-one	Not Available	Not Available	
isothiazolinones, mixed	Not Available	Not Available	

## Occupational Exposure Banding

Ingredient	Occupational Exposure Band Rating	Occupational Exposure Band Limit
wheat flour	D	> 0.01 to $\leq$ 0.1 mg/m <sup>3</sup>
sodium chloride	E	$\leq$ 0.01 mg/m <sup>3</sup>
calcium chloride	E	$\leq$ 0.01 mg/m <sup>3</sup>
glyceryl triacetate	E	$\leq$ 0.1 ppm
potassium sorbate	E	$\leq$ 0.01 mg/m <sup>3</sup>

## Notes:

*Occupational exposure banding is a process of assigning chemicals into specific categories or bands based on a chemical's potency and the adverse health outcomes associated with exposure. The output of this process is an occupational exposure band (OEB), which corresponds to a range of exposure concentrations that are expected to protect worker health.*

## Play Dough in red, blue, yellow, pink neon, orange neon for Creative Sets (Play Dough Sets)

Ingredient	Occupational Exposure Band Rating	Occupational Exposure Band Limit
alcohols C13-15-branched and linear, ethoxylated	E	≤ 0.1 ppm
sodium benzoate	E	≤ 0.01 mg/m <sup>3</sup>
glycerides, mixed coco, decanoyl and octanoyl	C	> 1 to ≤ 10 parts per million (ppm)
citric acid	E	≤ 0.01 mg/m <sup>3</sup>
C.I. Basic Red 1:1	E	≤ 0.01 mg/m <sup>3</sup>
2-methyl-4-isothiazolin-3-one	D	> 0.01 to ≤ 0.1 mg/m <sup>3</sup>
isothiazolinones, mixed	E	≤ 0.1 ppm
<b>Notes:</b>	<p><i>Occupational exposure banding is a process of assigning chemicals into specific categories or bands based on a chemical's potency and the adverse health outcomes associated with exposure. The output of this process is an occupational exposure band (OEB), which corresponds to a range of exposure concentrations that are expected to protect worker health.</i></p>	

**8.2. Exposure controls**

Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.

The basic types of engineering controls are:

Process controls which involve changing the way a job activity or process is done to reduce the risk. Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment. Ventilation can remove or dilute an air contaminant if designed properly. The design of a ventilation system must match the particular process and chemical or contaminant in use.

Employers may need to use multiple types of controls to prevent employee overexposure.

Local exhaust ventilation is required where solids are handled as powders or crystals; even when

- particulates are relatively large, a certain proportion will be powdered by mutual friction.
- If in spite of local exhaust an adverse concentration of the substance in air could occur, respiratory protection should be considered.

Such protection might consist of:

- (a): particle dust respirators, if necessary, combined with an absorption cartridge;
- (b): filter respirators with absorption cartridge or canister of the right type;
- (c): fresh-air hoods or masks.

Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to effectively remove the contaminant.

Type of Contaminant:	Air Speed:
direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts, gas discharge (active generation into zone of rapid air motion)	1-2.5 m/s (200-500 f/min.)
grinding, abrasive blasting, tumbling, high speed wheel generated dusts (released at high initial velocity into zone of very high rapid air motion).	2.5-10 m/s (500-2000 f/min.)

Within each range the appropriate value depends on:

Lower end of the range	Upper end of the range
1: Room air currents minimal or favourable to capture	1: Disturbing room air currents
2: Contaminants of low toxicity or of nuisance value only.	2: Contaminants of high toxicity
3: Intermittent, low production.	3: High production, heavy use
4: Large hood or large air mass in motion	4: Small hood-local control only

## Play Dough in red, blue, yellow, pink neon, orange neon for Creative Sets (Play Dough Sets)

	<p>Simple theory shows that air velocity falls rapidly with distance away from the opening of a simple extraction pipe. Velocity generally decreases with the square of distance from the extraction point (in simple cases). Therefore the air speed at the extraction point should be adjusted, accordingly, after reference to distance from the contaminating source. The air velocity at the extraction fan, for example, should be a minimum of 4-10 m/s (800-2000 f/min) for extraction of crusher dusts generated 2 metres distant from the extraction point. Other mechanical considerations, producing performance deficits within the extraction apparatus, make it essential that theoretical air velocities are multiplied by factors of 10 or more when extraction systems are installed or used.</p>
<b>8.2.2. Personal protection</b>	See below
<b>Eye and face protection</b>	<ul style="list-style-type: none"> <li>› Safety glasses with side shields</li> <li>› Chemical goggles.</li> <li>› Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly.</li> </ul>
<b>Skin protection</b>	See Hand protection below
<b>Hands/feet protection</b>	<p>The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.</p> <p>The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice.</p> <p>Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended.</p> <p>Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include:</p> <ul style="list-style-type: none"> <li>· frequency and duration of contact,</li> <li>· chemical resistance of glove material,</li> <li>· glove thickness and</li> <li>· dexterity</li> </ul> <p>Select gloves tested to a relevant standard (e.g. Europe EN 374, US F739, AS/NZS 2161.1 or national equivalent).</p> <ul style="list-style-type: none"> <li>· When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended.</li> <li>· When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended.</li> <li>· Some glove polymer types are less affected by movement and this should be taken into account when considering gloves for long-term use.</li> <li>· Contaminated gloves should be replaced.</li> </ul> <p>As defined in ASTM F-739-96 in any application, gloves are rated as:</p> <ul style="list-style-type: none"> <li>· Excellent when breakthrough time &gt; 480 min</li> </ul>

## Play Dough in red, blue, yellow, pink neon, orange neon for Creative Sets (Play Dough Sets)

	<ul style="list-style-type: none"> <li>• Good when breakthrough time &gt; 20 min</li> <li>• Fair when breakthrough time &lt; 20 min</li> <li>• Poor when glove material degrades</li> </ul> <p>For general applications, gloves with a thickness typically greater than 0.35 mm, are recommended. It should be emphasised that glove thickness is not necessarily a good predictor of glove resistance to a specific chemical, as the permeation efficiency of the glove will be dependent on the exact composition of the glove material. Therefore, glove selection should also be based on consideration of the task requirements and knowledge of breakthrough times.</p> <p>Glove thickness may also vary depending on the glove manufacturer, the glove type and the glove model. Therefore, the manufacturers technical data should always be taken into account to ensure selection of the most appropriate glove for the task.</p> <p>Note: Depending on the activity being conducted, gloves of varying thickness may be required for specific tasks. For example:</p> <ul style="list-style-type: none"> <li>• Thinner gloves (down to 0.1 mm or less) may be required where a high degree of manual dexterity is needed. However, these gloves are only likely to give short duration protection and would normally be just for single use applications, then disposed of.</li> <li>• Thicker gloves (up to 3 mm or more) may be required where there is a mechanical (as well as a chemical) risk i.e. where there is abrasion or puncture potential</li> </ul> <p>Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended.</p> <p>Experience indicates that the following polymers are suitable as glove materials for protection against undissolved, dry solids, where abrasive particles are not present.</p> <ul style="list-style-type: none"> <li>‣ polychloroprene.</li> <li>‣ nitrile rubber.</li> <li>‣ butyl rubber.</li> <li>‣ fluorocaoutchouc.</li> <li>‣ polyvinyl chloride.</li> </ul> <p>Gloves should be examined for wear and/ or degradation constantly.</p>
<b>Body protection</b>	See Other protection below
<b>Other protection</b>	<p>No special equipment needed when handling small quantities.</p> <p>OTHERWISE:</p> <ul style="list-style-type: none"> <li>‣ Overalls.</li> <li>‣ Barrier cream.</li> <li>‣ Eyewash unit.</li> </ul>

**Recommended material(s)****GLOVE SELECTION INDEX**

Glove selection is based on a modified presentation of the:

**"Forsberg Clothing Performance Index".**

Not available

**Respiratory protection**

Type AK-P Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)

Where the concentration of gas/particulates in the breathing zone, approaches or exceeds the "Exposure Standard" (or ES), respiratory protection is required.

Degree of protection varies with both face-piece and Class of filter; the nature of protection varies with Type of filter.

Required Minimum Protection Factor	Half-Face Respirator	Full-Face Respirator	Powered Air Respirator
up to 10 x ES	AK-AUS P2	-	AK-PAPR-AUS / Class 1 P2
up to 50 x ES	-	AK-AUS / Class 1 P2	-
up to 100 x ES	-	AK-2 P2	AK-PAPR-2 P2 ^

## Play Dough in red, blue, yellow, pink neon, orange neon for Creative Sets (Play Dough Sets)

## ^ - Full-face

A(All classes) = Organic vapours, B AUS or B1 = Acid gasses, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO<sub>2</sub>), G = Agricultural chemicals, K = Ammonia(NH<sub>3</sub>), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

- Respirators may be necessary when engineering and administrative controls do not adequately prevent exposures.
- The decision to use respiratory protection should be based on professional judgment that takes into account toxicity information, exposure measurement data, and frequency and likelihood of the worker's exposure - ensure users are not subject to high thermal loads which may result in heat stress or distress due to personal protective equipment (powered, positive flow, full face apparatus may be an option).
- Published occupational exposure limits, where they exist, will assist in determining the adequacy of the selected respiratory protection. These may be government mandated or vendor recommended.
- Certified respirators will be useful for protecting workers from inhalation of particulates when properly selected and fit tested as part of a complete respiratory protection program.
- Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU)
- Use approved positive flow mask if significant quantities of dust becomes airborne.
- Try to avoid creating dust conditions.

### 8.2.3. Environmental exposure controls

See section 12

## SECTION 9 Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

<b>Appearance</b>	Red, blue, yellow, pink neon, orange neon		
<b>Physical state</b>	Paste (plasticine)	<b>Relative density (Water = 1)</b>	Not Available
<b>Odour</b>	Not Available	<b>Partition coefficient n-octanol / water</b>	Not Available
<b>Odour threshold</b>	Not Available	<b>Auto-ignition temperature (°C)</b>	Not Available
<b>pH (as supplied)</b>	Not Available	<b>Decomposition temperature</b>	Not Available
<b>Melting point / freezing point (°C)</b>	Not Available	<b>Viscosity (cSt)</b>	Not Available
<b>Initial boiling point and boiling range (°C)</b>	Not Available	<b>Molecular weight (g/mol)</b>	Not Available

## Play Dough in red, blue, yellow, pink neon, orange neon for Creative Sets (Play Dough Sets)

<b>Flash point (°C)</b>	Not Available	<b>Taste</b>	Not Available
<b>Evaporation rate</b>	Not Available	<b>Explosive properties</b>	Not Available
<b>Flammability</b>	Not Available	<b>Oxidising properties</b>	Not Available
<b>Upper Explosive Limit (%)</b>	Not Available	<b>Surface Tension (dyn/cm or mN/m)</b>	Not Available
<b>Lower Explosive Limit (%)</b>	Not Available	<b>Volatile Component (%vol)</b>	Not Available
<b>Vapour pressure (kPa)</b>	Not Available	<b>Gas group</b>	Not Available
<b>Solubility in water</b>	Immiscible	<b>pH as a solution (Not Available%)</b>	Not Available
<b>Vapour density (Air = 1)</b>	Not Available	<b>VOC g/L</b>	Not Available
<b>Nanoform Solubility</b>	Not Available	<b>Nanoform Particle Characteristics</b>	Not Available
<b>Particle Size</b>	Not Available		

**9.2. Other information**

Not Available

**SECTION 10 Stability and reactivity**

<b>10.1. Reactivity</b>	See section 7.2
<b>10.2. Chemical stability</b>	Product is considered stable and hazardous polymerisation will not occur.
<b>10.3. Possibility of hazardous reactions</b>	See section 7.2
<b>10.4. Conditions to avoid</b>	See section 7.2
<b>10.5. Incompatible materials</b>	See section 7.2
<b>10.6. Hazardous decomposition products</b>	See section 5.3

**SECTION 11 Toxicological information****11.1. Information on toxicological effects**

<b>Inhaled</b>	The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting. Inhalation of oil droplets or aerosols may cause discomfort and may produce chemical inflammation of the lungs.
<b>Ingestion</b>	The material has NOT been classified by EC Directives or other classification systems as "harmful by ingestion". This is because of the lack of corroborating animal or human evidence.

## Play Dough in red, blue, yellow, pink neon, orange neon for Creative Sets (Play Dough Sets)

<b>Skin Contact</b>	The material is not thought to produce adverse health effects or skin irritation following contact (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting. Open cuts, abraded or irritated skin should not be exposed to this material. Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.
<b>Eye</b>	Although the material is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may cause transient discomfort characterised by tearing or conjunctival redness (as with windburn). Slight abrasive damage may also result.
<b>Chronic</b>	Long-term exposure to the product is not thought to produce chronic effects adverse to the health (as classified by EC Directives using animal models); nevertheless exposure by all routes should be minimised as a matter of course. The inhalation of cereal flours and similar protein containing flours can cause an allergic reaction known as baker's asthma, which is a common disease amongst workers in the cereal industry and in farmers. The substances implicated in baker's asthma may come from additives, storage mites and pest proteins. Dusts produced by proteins can sometimes sensitise workers like other foreign bodies. Symptoms include asthma appearing soon after exposure, with wheezing, narrowing of the airways and breathing difficulties. Airway exposure to dusts from cereals and grains may result in diseases of breathing, sometimes of an allergic nature. Food allergy can occur with cereals. Cereals (seeds of plants) are usually members of the grass family.

<b>Play Dough in red, blue, yellow, pink neon, orange neon for Creative Sets (Play Dough Sets)</b>	<b>TOXICITY</b>	<b>IRRITATION</b>
	Not Available	Not Available
<b>wheat flour</b>	<b>TOXICITY</b>	<b>IRRITATION</b>
	Not Available	Not Available
<b>water</b>	<b>TOXICITY</b>	<b>IRRITATION</b>
	Oral (Rat) LD50; >90000 mg/kg	Not Available
<b>sodium chloride</b>	<b>TOXICITY</b>	<b>IRRITATION</b>
	Dermal (rabbit) LD50: >10000 mg/kg	Eye (rabbit): 10 mg - moderate
	Inhalation(Rat) LC50; >10.5 mg/l4h	Eye (rabbit):100 mg/24h - moderate
<b>calcium chloride</b>	Oral (Rat) LD50; 3000 mg/kg	Skin (rabbit): 500 mg/24h - mild
	<b>TOXICITY</b>	<b>IRRITATION</b>
	dermal (rat) LD50: 2630 mg/kg	Eye (unknown): severe* [ICI]
<b>white mineral oil (petroleum)</b>	Oral (Rabbit) LD50; 500-1000 mg/kg	Skin (unknown): moderate*
	<b>TOXICITY</b>	<b>IRRITATION</b>
	Dermal (rabbit) LD50: >2000 mg/kg	Eye: no adverse effect observed (not irritating)
	Inhalation(Rat) LC50; >4.5 mg/l4h	Skin: adverse effect observed (irritating)
	Oral (Rat) LD50; >5000 mg/kg	Skin: no adverse effect observed (not irritating)

## Play Dough in red, blue, yellow, pink neon, orange neon for Creative Sets (Play Dough Sets)

	TOXICITY	IRRITATION
<b>calcium sulfate</b>	Inhalation(Rat) LC50; >3.26 mg/l4h Oral (Rat) LD50; >1581 mg/kg	Not Available
<b>glyceryl triacetate</b>	<b>TOXICITY</b> Dermal (rabbit) LD50: >2000 mg/kg Inhalation(Rat) LC50; >1.721 mg/l4h Oral (Mouse) LD50; 1100 mg/kg	<b>IRRITATION</b> Not Available
<b>potassium sorbate</b>	<b>TOXICITY</b> dermal (rat) LD50: >2000 mg/kg Oral (Rat) LD50; >6650 mg/kg	<b>IRRITATION</b> Eye: adverse effect observed (irritating) Eyes (rabbit) (-) Irritant Skin (rabbit) (-) Irritant Skin: no adverse effect observed (not irritating)
<b>aluminium sulfate, hydrated (filter alum)</b>	<b>TOXICITY</b> Dermal (rabbit) LD50: >1167.5 mg/kg Inhalation(Rat) LC50; >5 mg/l4h Oral (Rat) LD50; >2000 mg/kg	<b>IRRITATION</b> Not Available
<b>alcohols C13-15-branched and linear, ethoxylated</b>	<b>TOXICITY</b> Not Available	<b>IRRITATION</b> Not Available
<b>sodium benzoate</b>	<b>TOXICITY</b> Dermal (rabbit) LD50: >2000 mg/kg Inhalation(Rat) LC50; >12.2 mg/l4h Oral (Rat) LD50; 4070 mg/kg	<b>IRRITATION</b> Not Available
<b>starch</b>	<b>TOXICITY</b> Not Available	<b>IRRITATION</b> Skin (human): 0.3 mg/3d-1 mild
<b>glycerides, mixed coco, decanoyl and octanoyl</b>	<b>TOXICITY</b> dermal (rat) LD50: >2000 mg/kg Oral (Rat) LD50; >2000 mg/kg	<b>IRRITATION</b> Eye: no adverse effect observed (not irritating) Skin: no adverse effect observed (not irritating)
<b>glycerol</b>	<b>TOXICITY</b> dermal (guinea pig) LD50: 58500 mg/kg Oral (Mouse) LD50; 4090 mg/kg	<b>IRRITATION</b> Not Available
<b>citric acid</b>	<b>TOXICITY</b> dermal (rat) LD50: >2000 mg/kg Oral (Rat) LD50; 3000 mg/kg	<b>IRRITATION</b> Eye (rabbit): 0.75 mg/24h-SEVERE Skin (rabbit): 500 mg/24h - mild
<b>titanium dioxide</b>	<b>TOXICITY</b> dermal (hamster) LD50: >=10000 mg/kg Inhalation(Rat) LC50; >2.28 mg/l4h Oral (Rat) LD50; >=2000 mg/kg	<b>IRRITATION</b> Eye: no adverse effect observed (not irritating) Skin (human): 0.3 mg /3D (int)-mild * Skin: no adverse effect observed (not irritating)

## Play Dough in red, blue, yellow, pink neon, orange neon for Creative Sets (Play Dough Sets)

	TOXICITY	IRRITATION
<b>C.I. Basic Red 1:1</b>	Oral (Rat) LD50; 450 mg/kg	Eye (rabbit): irritant (Draize) *
		Eye: adverse effect observed (irreversible damage)
		Skin (rabbit): non-irritant (Draize)*
		Skin: no adverse effect observed (not irritating)
<b>C.I. Basic Violet 11 chloride</b>	TOXICITY	IRRITATION
	Oral (Rat) LD50; >50<300 mg/kg	Eye: adverse effect observed (irreversible damage)
<b>C.I. Pigment Blue 15</b>	TOXICITY	IRRITATION
	dermal (rat) LD50: >2000 mg/kg	Eye (human): non-irritant
	Oral (Rat) LD50; >2000 mg/kg	Skin (human): non-irritant
<b>C.I. Pigment Green 7</b>	TOXICITY	IRRITATION
	Oral (Rat) LD50; >2000 mg/kg	Not Available
<b>2-methyl-4-isothiazolin-3-one</b>	TOXICITY	IRRITATION
	dermal (rat) LD50: 242 mg/kg	Eye: adverse effect observed (irreversible damage)
	Inhalation(Rat) LC50; 0.1 mg/l4h	Skin: adverse effect observed (corrosive)
	Oral (Rat) LD50; 120 mg/kg	
<b>isothiazolinones, mixed</b>	TOXICITY	IRRITATION
	dermal (rat) LD50: >1008 mg/kg	Eye: adverse effect observed (irreversible damage)
	Inhalation(Rat) LC50; 0.171 mg/l4h	Skin: adverse effect observed (corrosive)
	Oral (Rat) LD50; 53 mg/kg	Skin: adverse effect observed (irritating)
<b>WHEAT FLOUR</b>	Allergic reactions involving the respiratory tract are usually due to interactions between IgE antibodies and allergens and occur rapidly. Allergic potential of the allergen and period of exposure often determine the severity of symptoms. Some people may be genetically more prone than others, and exposure to other irritants may aggravate symptoms. Allergy causing activity is due to interactions with proteins. Attention should be paid to atopic diathesis, characterised by increased susceptibility to nasal inflammation, asthma and eczema. Exogenous allergic alveolitis is induced essentially by allergen specific immune-complexes of the IgG type; cell-mediated reactions (T lymphocytes) may be involved. Such allergy is of the delayed type with onset up to four hours following exposure.	
<b>CALCIUM CHLORIDE</b>	For calcium: Toxicity from calcium is not common, because the gastrointestinal tract normally limits the amount of calcium absorbed. Therefore, short-term intake of large amounts of calcium does not generally produce any ill effects aside from constipation and an increased risk of kidney stones. However, more severe toxicity can occur when excess calcium is ingested over long periods, or when calcium is combined with increased amounts of vitamin D, which increases calcium absorption. Calcium toxicity is also found	

## Play Dough in red, blue, yellow, pink neon, orange neon for Creative Sets (Play Dough Sets)

sometimes after excessive administration of calcium via a vein. Toxicity shows as abnormal deposition of calcium in tissues and by elevated blood calcium levels. However, high blood calcium is often due to other causes, such as abnormally high amounts of parathyroid hormone (PTH). Usually, under these circumstances, bone density is lost, and the resulting high blood calcium can cause kidney stones and abdominal pain. Some cancers can also cause high blood calcium, either by secreting abnormal proteins that act like PTH or by invading and killing bone cells causing them to release calcium. Very high levels of calcium can result in appetite loss, nausea, vomiting, abdominal pain, confusion, seizures, and even coma.

For calcium chloride:

Acute toxicity: The acute oral toxicity of calcium chloride is low. It is attributed to the severe irritating property to the gastrointestinal tract. In humans, acute oral toxicity is rare because large single doses cause nausea and vomiting. There is very little toxicity by skin contact. High blood calcium generally occurs only when there are other factors that affect calcium balance, such as kidney inefficiency and primary thyroid overactivity. Animal testing indicates that calcium chloride is at most slightly irritating to skin, but severely irritating to the eyes. Prolonged exposure and application of moistened material or concentrated solutions did result in considerable skin irritation.

Repeat dose toxicity: Animal testing did not show evidence of chronic toxicity. Calcium and chloride are both essential nutrients and a daily intake has been recommended.

Genetic toxicity: Test results for genetic toxicity have been negative.

Reproductive and developmental toxicity: No reproductive toxicity study has been reported. An animal test on developmental toxicity yielded negative results.

The material may produce severe irritation to the eye causing pronounced inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.

Oral (rat) TCLo: 92000 mg/kg/92D-Cont. Generally the toxicity and irritation is of low order. White oils and highly/solvent refined oils have not shown the long term risk of skin cancer that follows persistent skin contamination with some other mineral oils, due in all probability to refining that produces low content of both polycyclic aromatic hydrocarbons (PAH) and benz-alpha-pyrenes (BaP)

The materials included in the Lubricating Base Oils category are related from both process and physical-chemical perspectives;

The potential toxicity of a specific distillate base oil is inversely related to the severity or extent of processing the oil has undergone, since:

- The adverse effects of these materials are associated with undesirable components, and
- The levels of the undesirable components are inversely related to the degree of processing;
- Distillate base oils receiving the same degree or extent of processing will have similar toxicities;
- The potential toxicity of residual base oils is independent of the degree of processing the oil receives.
- The reproductive and developmental toxicity of the distillate base oils is inversely related to the degree of processing.

Unrefined & mildly refined distillate base oils contain the highest levels of undesirable components, have the largest variation of hydrocarbon molecules and have shown the highest potential cancer-causing and mutation-causing activities. Highly and severely refined distillate base oils are produced from unrefined and mildly refined oils by removing or transforming undesirable components. In comparison to unrefined and mildly refined base oils, the highly and severely refined distillate base oils have a smaller range of hydrocarbon molecules and have demonstrated very low mammalian toxicity. Testing of residual oils for mutation-causing and cancer-causing potential has shown negative results, supporting the belief that these materials lack biologically active components or the components are largely non-bioavailable due to their molecular size.

Toxicity testing has consistently shown that lubricating base oils have low acute toxicities. Numerous tests have shown that a lubricating base oil's mutagenic and carcinogenic potential correlates with its 3-7 ring polycyclic aromatic compound (PAC) content, and the level of DMSO extractables (e.g. IP346 assay), both characteristics that are directly related to the degree/conditions of processing.

For highly and severely refined distillate base oils:

In animal studies, the acute, oral, semilethal dose is >5g/kg body weight and the semilethal dose by skin contact is >2g/kg body weight. The semilethal concentration for inhalation is 2.18 to >4 mg/L. The materials have varied from "non-irritating" to "moderately irritating" when tested for skin and eye irritation. Testing for sensitisation has been negative. The effects of repeated exposure vary by species;

In animals, effects to the testes and lung have been observed, as well as the formation of granulomas.

**WHITE MINERAL OIL  
(PETROLEUM)**

	<p>In animals, these substances have not been found to cause reproductive toxicity or significant increases in birth defects. They are also not considered to cause cancer, mutations or chromosome aberrations. The substance is classified by IARC as Group 3: NOT classifiable as to its carcinogenicity to humans. Evidence of carcinogenicity may be inadequate or limited in animal testing.</p>
<b>CALCIUM SULFATE</b>	<p>Gypsum (calcium sulfate hydrate) irritates the skin, eye, mucous membranes, and airways. A series of studies involving Gypsum industry workers in Poland reported chronic, non-specific airways diseases. Repeat dose toxicity: Examination of workers at a gypsum manufacturing plant found restrictive defects on long-function tests in those who were chronically exposed to gypsum dust. Synergistic/antagonistic effects: Gypsum appears to be protective on quartz toxicity in animal testing. On the other hand, it tended to aggravate tuberculosis in animals. Cytotoxicity: Tests results regarding cytotoxicity have been negative. Cancer-causing potential: Tests involving animals produced mixed results; no causal relationship between gypsum and tumour formation was found. Genetic toxicity: Test on bacterial cells have shown negative results. Developmental toxicity: In animal testing, developmental toxicity was not seen.</p>
<b>POTASSIUM SORBATE</b>	<p>Substance has been investigated as a mutagen by cytogenetic analysis in rodents.</p>
<b>ALCOHOLS C13-15- BRANCHED AND LINEAR, ETHOXYLATED</b>	<p>Humans have regular contact with alcohol ethoxylates through a variety of industrial and consumer products such as soaps, detergents and other cleaning products. Exposure to these chemicals can occur through swallowing, inhalation, or contact with the skin or eyes. Studies of acute toxicity show that relatively high volumes would have to occur to produce any toxic response. No death due to poisoning with alcohol ethoxylates has ever been reported. Studies show that alcohol ethoxylates have low toxicity through swallowing and skin contact. Animal studies show these chemicals may produce gastrointestinal irritation, stomach ulcers, hair standing up, diarrhea and lethargy. Slight to severe irritation occurred when undiluted alcohol ethoxylates were applied to the skin and eyes of animals. These chemicals show no indication of genetic toxicity or potential to cause mutations and cancers. Toxicity is thought to be substantially lower than that of nonylphenol ethoxylates. Some of the oxidation products of this group of substances may have sensitizing properties. As they cause less irritation, nonionic surfactants are often preferred to ionic surfactants in topical products. However, their tendency to auto-oxidise also increases their irritation. Due to their irritating effect it is difficult to diagnose allergic contact dermatitis (ACD) by patch testing. Both laboratory and animal testing has shown that there is no evidence for alcohol ethoxylates (AEs) causing genetic damage, mutations or cancer. No adverse reproductive or developmental effects were observed.</p>
<b>SODIUM BENZOATE</b>	<p>NOTE: Oral doses of 8-10g may cause nausea and vomiting, though tolerance in human is 50 g/day. Use in food limited to 0.1%. [ICI] For benzoates: Benzyl alcohol, benzoic acid and its sodium and potassium salt have a common metabolic and excretion pathway. All but benzyl alcohol are considered to be unharful and of low acute toxicity. They may cause slight irritation by oral, dermal or inhalation exposure except sodium benzoate which doesn't irritate the skin. Studies showed increased mortality, reduced weight gain, liver and kidney effects at higher doses, also, lesions of the brains, thymus and skeletal muscles may occur with benzyl alcohol. However, they do not cause cancer, genetic or reproductive toxicity. Developmental toxicity may occur but only at maternal toxic level.</p>
<b>GLYCERIDES, MIXED COCO, DECANOYL AND OCTANOYL</b>	<p>*REACH Dossier For aliphatic fatty acids (and salts) Acute oral (gavage) toxicity: The acute oral LD50 values in rats for both were greater than &gt;2000 mg/kg bw Clinical signs were generally associated with poor condition following administration of high doses (salivation, diarrhoea, staining, piloerection and lethargy). There were no adverse effects on body weight in any study In some studies, excess test substance and/or irritation in the gastrointestinal tract was observed at necropsy. Skin and eye irritation potential, with a few stated exceptions, is chain length dependent and decreases with increasing chain length</p>

## Play Dough in red, blue, yellow, pink neon, orange neon for Creative Sets (Play Dough Sets)

According to several OECD test regimes the animal skin irritation studies indicate that the C6-10 aliphatic acids are severely irritating or corrosive, while the C12 aliphatic acid is irritating, and the C14-22 aliphatic acids generally are not irritating or mildly irritating.

Human skin irritation studies using more realistic exposures (30-minute, 1-hour or 24-hours) indicate that the aliphatic acids have sufficient, good or very good skin compatibility.

Animal eye irritation studies indicate that among the aliphatic acids, the C8-12 aliphatic acids are irritating to the eye while the C14-22 aliphatic acids are not irritating.

Eye irritation potential of the ammonium salts does not follow chain length dependence; the C18 ammonium salts are corrosive to the eyes.

Dermal absorption:

The in vitro penetration of C10, C12, C14, C16 and C18 fatty acids (as sodium salt solutions) through rat skin decreases with increasing chain length. At 86.73 ug C16/cm<sup>2</sup> and 91.84 ug C18/cm<sup>2</sup>, about 0.23% and less than 0.1% of the C16 and C18 soap solutions is absorbed after 24 h exposure, respectively.

Sensitisation:

No sensitisation data were located.

Repeat dose toxicity:

Repeated dose oral (gavage or diet) exposure to aliphatic acids did not result in systemic toxicity with NOAELs greater than the limit dose of 1000 mg/kg bw.

Mutagenicity

Aliphatic acids do not appear to be mutagenic or clastogenic in vitro or in vivo

Carcinogenicity

No data were located for carcinogenicity of aliphatic fatty acids.

Reproductive toxicity

No effects on fertility or on reproductive organs, or developmental effects were observed in studies on aliphatic acids and the NOAELs correspond to the maximum dose tested. The weight of evidence supports the lack of reproductive and developmental toxicity potential of the aliphatic acids category.

Given the large number of substances in this category, their closely related chemical structure, expected trends in physical chemical properties, and similarity of toxicokinetic properties, both mammalian and aquatic endpoints were filled using read-across to the closest structural analogue, and selecting the most conservative supporting substance effect level.

Structure-activity relationships are not evident for the mammalian toxicity endpoints. That is, the low mammalian toxicity of this category of substances limits the ability to discern structural effects on biological activity. Regardless, the closest structural analogue with the most conservative effect value was selected for read across. Irritation is observed for chain lengths up to a cut-off" at or near 12 carbons).

Metabolism:

The aliphatic acids share a common degradation pathway in which they are metabolized to acetyl-CoA or other key metabolites in all living systems. Common biological pathways result in structurally similar breakdown products, and are, together with the physico-chemical properties, responsible for similar environmental behavior and essentially identical hazard profiles with regard to human health.

Differences in metabolism or biodegradability of even and odd numbered carbon chain compounds or saturated/ unsaturated compounds are not expected; even-and odd-numbered carbon chain compounds, and the saturated and unsaturated compounds are naturally occurring and are expected to be metabolized and biodegraded in the same manner.

The acid and alkali salt forms of the homologous aliphatic acid are expected to have many similar physicochemical and toxicological properties when they become bioavailable; therefore, data read across is used for those instances where data are available for the acid form but not the salt, and vice versa. In the gastrointestinal tract, acids and bases are absorbed in the undissociated (non-ionised) form by simple diffusion or by facilitated diffusion. It is expected that both the acids and the salts will be present in (or converted to) the acid form in the stomach. This means that for both aliphatic acid or aliphatic acid salt, the same compounds eventually enter the small intestine, where equilibrium, as a result of increased pH, will shift towards dissociation (ionised form).

Hence, the situation will be similar for compounds originating from acids and therefore no differences in uptake are anticipated.

## Play Dough in red, blue, yellow, pink neon, orange neon for Creative Sets (Play Dough Sets)

Note that the saturation or unsaturation level is not a factor in the toxicity of these substances and is not a critical component of the read across process..

**Toxicokinetics:**

The turnover of the [14C] surfactants in the rat showed that there was no significant difference in the rate or route of excretion of 14C given by intraperitoneal or subcutaneous administration. The main route of excretion was as 14CO<sub>2</sub> in the expired air at 6 h after administration. The remaining material was incorporated in the body. Longer fatty acid chains are more readily incorporated than shorter chains. At ca. 1.55 and 1.64 mg/kg bw, 71% of the C16:0 and 56% of the C18:0 was incorporated and 21% and 38% was excreted as 14CO<sub>2</sub>, respectively.

Glycidyl fatty acid esters (GEs), one of the main contaminants in processed oils, are mainly formed during the deodorisation step in the refining process of edible oils and therefore occur in almost all refined edible oils. GEs are potential carcinogens, due to the fact that they readily hydrolyze into the free form glycidol in the gastrointestinal tract, which has been found to induce tumours in various rat tissues. Therefore, significant effort has been devoted to inhibit and eliminate the formation of GEs. GEs contain a common terminal epoxide group but exhibit different fatty acid compositions. This class of compounds has been reported in edible oils after overestimation of 3-monochloropropane-1,2-diol (3-MCPD) fatty acid esters analysed by an indirect method, 3-MCPD esters have been studied as food processing contaminants and are found in various food types and food ingredients, particularly in refined edible oils. 3-Monochloropropane-1,2-diol (3-MCPD) and 2-monochloropropane-1,3-diol (2-MCPD) are chlorinated derivatives of glycerol (1,2,3-propanetriol). 3- and 2-MCPD and their fatty acid esters are among non-volatile chloropropanols. Glycidol is associated with the formation and decomposition of 3- and 2-MCPD. It forms monoesters with fatty acids (GE) during the refining of vegetable oils. Chloropropanols are formed in HVP during the hydrochloric acid-mediated hydrolysis step of the manufacturing process. In food production, chloropropanols form from the reaction of endogenous or added chloride with glycerol or acylglycerol.

Although harmful effects on humans and animals have not been demonstrated, the corresponding hydrolysates, 3-MCPD and glycidol, have been identified as rodent genotoxic carcinogens, ultimately resulting in the formation of kidney tumours (3-MCPD) and tumours at other tissue sites (glycidol). Therefore, 3-MCPD and glycidol have been categorised as "possible human carcinogens (group 2B) and "probably carcinogenic to humans (group 2A), respectively, by the International Agency for Research on Cancer (IARC).

Diacylglyceride (DAG) based oils produced by one company were banned from the global market due to "high levels" of GEs.

Several reports have also suggested that a bidirectional transformation process may occur not only between glycidol and 3-MCPD but also their esterified forms in the presence of chloride ions. The transformation rate of glycidol to 3-MCPD was higher than that of 3-MCPD to glycidol under acidic conditions in the presence of chloride ion.

Precursors of GEs in refined oils have been identified as partial acylglycerols, that is, DAGs and monoacylglycerides (MAGs); however, whether they also originate from triacylglycerides (TAGs) is still a topic of controversial debates. Several authors noted that pure TAGs were stable during heat treatment (such as 235 deg C) for 3 h and were therefore not involved in the formation of GEs. However, experimental results have shown that small amounts of GEs are present in a heat-treated oil model consisting of almost 100% TAGs. The formation of GEs from TAGs can be attributed to the pyrolysis of TAGs to DAGs and MAGs. In contrast, 3-MCPD esters in refined oils can be obtained from TAG. Presently, the mechanism for the formation of GE intermediates and the relationship between GEs and 3-MCPD esters are still unknown.

For group E aliphatic esters (polyol esters):

The polyol esters, including trimethylolpropane (TMP). Pentaerythritol (PE) and dipentaerythritol (diPE) are unique in their chemical characteristics since they lack beta-tertiary hydrogen atoms, thus leading to stability against oxidation and elimination. Therefore their esters with C5-C10 fatty acids have applications as artificial lubricants. Because of their stability at high temperatures, they are also used in high temperature applications such as industrial oven chain oils, high temperature greases, fire resistant transformer coolants and turbine engines.

Polyol esters that are extensively esterified also have greater polarity, less volatility and enhanced lubricating properties

## Play Dough in red, blue, yellow, pink neon, orange neon for Creative Sets (Play Dough Sets)

Acute toxicity: Animal studies show relatively low toxicity by swallowing. These esters are hydrolysed in the gastrointestinal tract, and studies have not shown evidence of these accumulating in body tissues. Acute toxicity by skin contact was also found to be low.

Repeat dose toxicity: According to animal testing, polyol esters show a low level of toxicity following repeated application, either by swallowing or by skin contact.

Reproductive and developmental toxicity: This group should not produce profound reproductive effects in animals.

Genetic toxicity: Tests have shown this group to be inactive. It is unlikely that these substances cause mutations.

Cancer-causing potential: No association between this group of substances and cancer.

For triglycerides:

Carboxylic acid esters will undergo enzymatic hydrolysis by ubiquitously expressed GI esterases. The rate of hydrolysis is dependant on the structure of the ester, and may therefore be rapid or rather slow. Thus, due to hydrolysis, predictions on oral absorption based on the physico-chemical characteristics of the intact parent substance alone may no longer apply.

When considering the hydrolysis product glycerol, absorption is favoured based on passive and active absorption of glycerol.

The Cosmetic Ingredient Review (CIR) Expert Panel has issued three final reports on the safety of 25 triglycerides, i.e., fatty acid triesters of glycerin

High purity is needed for the triglycerides. Previously the Panel published a final report on a diglycerides, and concluded that the ingredients in the diglyceride family are safe in the present practices of use and concentration provided the content of 1,2-diesters is not high enough to induce epidermal hyperplasia. The Panel discussed that there was an increased level of concern because of data regarding the induction of protein kinase C (PKC) and the tumor promotion potential of 1,2-diacylglycerols. The Panel noted that, nominally, glyceryl-1,3-diesters contain 1,2-diesters, raising the concern that 1,2-diesters could potentially induce hyperplasia. The Panel did note that these compounds are more likely to cause these effects when the fatty acid chain length is <=14 carbons, when one fatty acid is saturated and one is not, and when given at high doses, repeatedly. Although minimal percutaneous absorption of triolein has been demonstrated *in vivo* using guinea pigs (but not hairless mice) and *in vitro* using full-thickness skin from hairless mice, the Expert Panel recognizes that, reportedly, triolein and tricaprylin can enhance the skin penetration of other chemicals, and recommends that care should be exercised in using these and other glyceryl triesters in cosmetic products.

The Panel acknowledged that some of the triglycerides may be formed from plant-derived or animal-derived constituents. The Panel thus expressed concern regarding pesticide residues and heavy metals that may be present in botanical ingredients. They stressed that the cosmetics industry should continue to use the necessary procedures to sufficiently limit amounts of such impurities in an ingredient before blending them into cosmetic formulations. Additionally, the Panel considered the risks inherent in using animal-derived ingredients, namely the transmission of infectious agents. Although tallow may be used in the manufacture of glyceryl tallowate and is clearly animal-derived, the Panel notes that tallow is highly processed, and tallow derivatives even more so. The Panel agrees with determinations by the U.S. FDA that tallow derivatives are not risk materials for transmission of infectious agents.

Finally, the Panel discussed the issue of incidental inhalation exposure, as some of the triglycerides are used in cosmetic sprays and could possibly be inhaled. For example, triethylhexanoin and triisostearin are reported to be used at maximum concentrations of 36% and 30%, respectively, in perfumes, and 14.7% and 10.4%, respectively, in face powders. The Panel noted that in aerosol products, 95% – 99% of droplets/particles would not be respirable to any appreciable amount. Furthermore, droplets/particles deposited in the nasopharyngeal or bronchial regions of the respiratory tract present no toxicological concerns based on the chemical and biological properties of these ingredients. Coupled with the small actual exposure in the breathing zone and the concentrations at which the ingredients are used, the available information indicates that incidental inhalation would not be a significant route of exposure that might lead to local respiratory or systemic effects.

Cosmetic Ingredient Review (CIR) : Amended Safety Assessment of Triglycerides as Used in Cosmetics August 2017

Glyceryl triesters are also known as triglycerides; ingested triglycerides are metabolized to monoglycerides, free fatty acids, and glycerol, all of which are absorbed in the intestinal mucosa and

## Play Dough in red, blue, yellow, pink neon, orange neon for Creative Sets (Play Dough Sets)

	<p>undergo further metabolism. Dermal absorption of Triolein in mice was nil; the oil remained at the application site. Only slight absorption was seen in guinea pig skin. Tricaprylin and other glyceryl triesters have been shown to increase the skin penetration of drugs. Little or no acute, subchronic, or chronic oral toxicity was seen in animal studies unless levels approached a significant percentage of caloric intake. Subcutaneous injections of Tricaprylin in rats over a period of 5 weeks caused a granulomatous reaction characterized by oil deposits surrounded by macrophages. Dermal application was not associated with significant irritation in rabbit skin. Ocular exposures were, at most, mildly irritating to rabbit eyes. No evidence of sensitization or photosensitization was seen in a guinea pig maximization test. Most of the genotoxicity test systems were negative. Tricaprylin, Trioctanoin, and Triolein have historically been used as vehicles in carcinogenicity testing of other chemicals. In one study, subcutaneous injection of Tricaprylin in newborn mice produced more tumors in lymphoid tissue than were seen in untreated animals, whereas neither subcutaneous or intraperitoneal injection in 4- to 6-week-old female mice produced any tumors in another study. Trioctanoin injected subcutaneously in hamsters produced no tumors. Trioctanoin injected intraperitoneally in pregnant rats was associated with an increase in mammary tumors in the offspring compared to that seen in offspring of untreated animals, but similar studies in pregnant hamsters and rabbits showed no tumors in the offspring. One study of Triolein injected subcutaneously in rats showed no tumors at the injection site. As part of an effort to evaluate vehicles used in carcinogenicity studies, the National Toxicology Program conducted a 2-year carcinogenicity study in rats given Tricaprylin by gavage. This treatment was associated with a statistically significant dose-related increase in pancreatic acinar cell hyperplasia and adenoma, but there were no acinar carcinomas, the incidence of mononuclear leukemia was less, and nephropathy findings were reduced, all compared to corn oil controls. Overall, the study concluded that Tricaprylin did not offer significant advantages over corn oil as vehicles in carcinogenicity studies. Trilaurin was found to inhibit the formation of neoplasms initiated by dimethylbenzanthracene (DMBA) and promoted by croton oil. Tricaprylin was not teratogenic in mice or rats, but some reproductive effects were seen in rabbits. A low level of fetal eye abnormalities and a small percentage of abnormal sperm were reported in mice injected with Trioctanoin as a vehicle control. Clinical tests of Trilaurin at 36.3% in a commercial product applied to the skin produced no irritation reactions. Trilaurin, Tristearin, and Tribehenin at 40%, 1.68%, and 0.38%, respectively, in commercial products were also negative in repeated-insult patch tests. Tristearin at 0.32% in a commercial product induced transient, mild to moderate, ocular irritation after instillation into the eyes of human subjects. Based on the enhancement of penetration of other chemicals by skin treatment with glyceryl triesters, it is recommended that care be exercised in using them in cosmetic products.</p> <p>Cosmetic Ingredient Review (CIR) Expert Panel: Final Report on the Safety Assessment of Trilaurin etc: Int J Toxicol, 20 Suppl 4, 61-94 2001</p>
GLYCEROL	<p>At very high concentrations, evidence predicts that glycerol may cause tremor, irritation of the skin, eyes, digestive tract and airway. Otherwise it is of low toxicity. There is no significant evidence to suggest that it causes cancer, genetic, reproductive or developmental toxicity.</p>
CITRIC ACID	<p>For citric acid (and its inorganic citrate salts)</p> <p>Based on extensive animal testing data and on human experience, citric acid has low acute toxicity. Citric acid is not suspected of causing cancer, birth defects or reproductive toxicity. Further, it does not cause mutations. Also, the sensitizing potential is considered low. In contrast, irritation, particularly of the eyes but also the airways and the skin, is the main hazard presented by citric acid.</p>
TITANIUM DIOXIDE	<p>* IUCLID</p> <p>Laboratory (in vitro) and animal studies show, exposure to the material may result in a possible risk of irreversible effects, with the possibility of producing mutation.</p> <p>WARNING: This substance has been classified by the IARC as Group 2B: Possibly Carcinogenic to Humans.</p>
2-METHYL-4-ISOTHIAZOLIN-3-ONE	<p>Based on laboratory and animal testing, exposure to the material may result in irreversible effects and mutations in humans.</p> <p>NOTE: Substance has been shown to be mutagenic in at least one assay, or belongs to a family of chemicals producing damage or change to cellular DNA.</p> <p>Considered to be a minor sensitizer in Kathon CG (1) (1). Bruze et al - Contact Dermatitis 20: 219-39,</p>

<b>WHEAT FLOUR &amp; POTASSIUM SORBATE &amp; SODIUM BENZOATE &amp; 2-METHYL-4-ISOTHIAZOLIN-3-ONE &amp; ISOTHIAZOLINONES, MIXED</b>	<p>The following information refers to contact allergens as a group and may not be specific to this product. Contact allergies quickly manifest themselves as contact eczema, more rarely as urticaria or Quincke's oedema. The pathogenesis of contact eczema involves a cell-mediated (T lymphocytes) immune reaction of the delayed type. Other allergic skin reactions, e.g. contact urticaria, involve antibody-mediated immune reactions. The significance of the contact allergen is not simply determined by its sensitisation potential: the distribution of the substance and the opportunities for contact with it are equally important. A weakly sensitising substance which is widely distributed can be a more important allergen than one with stronger sensitising potential with which few individuals come into contact. From a clinical point of view, substances are noteworthy if they produce an allergic test reaction in more than 1% of the persons tested.</p>
<b>WHEAT FLOUR &amp; WATER &amp; ALUMINIUM SULFATE, HYDRATED (FILTER ALUM) &amp; ALCOHOLS C13-15- BRANCHED AND LINEAR, ETHOXYLATED &amp; TITANIUM DIOXIDE &amp; C.I. BASIC VIOLET 11 CHLORIDE &amp; C.I. PIGMENT GREEN 7 &amp; 2-METHYL-4-ISOTHIAZOLIN-3-ONE &amp; ISOTHIAZOLINONES, MIXED</b>	<p>No significant acute toxicological data identified in literature search.</p>
<b>SODIUM CHLORIDE &amp; CALCIUM SULFATE &amp; POTASSIUM SORBATE &amp; ALUMINIUM SULFATE, HYDRATED (FILTER ALUM) &amp; GLYCEROL &amp; CITRIC ACID &amp; TITANIUM DIOXIDE &amp; 2-METHYL-4-ISOTHIAZOLIN-3-ONE &amp; ISOTHIAZOLINONES, MIXED</b>	<p>Asthma-like symptoms may continue for months or even years after exposure to the material ends. This may be due to a non-allergic condition known as reactive airways dysfunction syndrome (RADS) which can occur after exposure to high levels of highly irritating compound. Main criteria for diagnosing RADS include the absence of previous airways disease in a non-atopic individual, with sudden onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. Other criteria for diagnosis of RADS include a reversible airflow pattern on lung function tests, moderate to severe bronchial hyperreactivity on methacholine challenge testing, and the lack of minimal lymphocytic inflammation, without eosinophilia. RADS (or asthma) following an irritating inhalation is an infrequent disorder with rates related to the concentration of and duration of exposure to the irritating substance. On the other hand, industrial bronchitis is a disorder that occurs as a result of exposure due to high concentrations of irritating substance (often particles) and is completely reversible after exposure ceases. The disorder is characterized by difficulty breathing, cough and mucus production.</p>
<b>SODIUM CHLORIDE &amp; TITANIUM DIOXIDE</b>	<p>The material may produce moderate eye irritation leading to inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.</p>
<b>SODIUM CHLORIDE &amp; CALCIUM CHLORIDE &amp; STARCH &amp; CITRIC ACID &amp; TITANIUM DIOXIDE &amp; 2-METHYL-4-ISOTHIAZOLIN-3-ONE &amp; ISOTHIAZOLINONES, MIXED</b>	<p>The material may cause skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin.</p>

<b>2-METHYL-4-ISOTHIAZOLIN-3-ONE &amp; ISOTHIAZOLINONES, MIXED</b>	<p>In light of potential adverse effects, and to ensure a harmonised risk assessment and management, the EU regulatory framework for biocides has been established with the objective of ensuring a high level of protection of human and animal health and the environment. To this aim, it is required that risk assessment of biocidal products is carried out before they can be placed on the market. A central element in the risk assessment of the biocidal products are the utilization instructions that defines the dosage, application method and amount of applications and thus the exposure of humans and the environment to the biocidal substance.</p> <p>Humans may be exposed to biocidal products in different ways in both occupational and domestic settings. Many biocidal products are intended for industrial sectors or professional uses only, whereas other biocidal products are commonly available for private use by non-professional users. In addition, potential exposure of non-users of biocidal products (i.e. the general public) may occur indirectly via the environment, for example through drinking water, the food chain, as well as through atmospheric and residential exposure. Particular attention should be paid to the exposure of vulnerable sub-populations, such as the elderly, pregnant women, and children. Also pets and other domestic animals can be exposed indirectly following the application of biocidal products. Furthermore, exposure to biocides may vary in terms of route (inhalation, dermal contact, and ingestion) and pathway (food, drinking water, residential, occupational) of exposure, level, frequency and duration.</p> <p>The material may be irritating to the eye, with prolonged contact causing inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.</p> <p>Formaldehyde generators (releasers) are often used as preservatives. The maximum authorised concentration of free formaldehyde is 0.2% and must be labelled with the warning sign "contains formaldehyde" where the concentration exceeds 0.05%. The use of formaldehyde-releasing preservatives ensures that the level of free formaldehyde in the products is always low but sufficient to inhibit microbial growth - it disrupts metabolism to cause death of the organism. However there is a concern that formaldehyde generators can produce amines capable of causing cancers (nitrosamines) when used in formulations containing amines.</p>
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<b>Acute Toxicity</b>	<span style="color: red;">✗</span>	<b>Carcinogenicity</b>	<span style="color: red;">✗</span>
<b>Skin Irritation/Corrosion</b>	<span style="color: red;">✗</span>	<b>Reproductivity</b>	<span style="color: red;">✗</span>
<b>Serious Eye Damage/Irritation</b>	<span style="color: red;">✗</span>	<b>STOT - Single Exposure</b>	<span style="color: red;">✗</span>
<b>Respiratory or Skin sensitisation</b>	<span style="color: red;">✗</span>	<b>STOT - Repeated Exposure</b>	<span style="color: red;">✗</span>
<b>Mutagenicity</b>	<span style="color: red;">✗</span>	<b>Aspiration Hazard</b>	<span style="color: red;">✗</span>

*Legend: ✗ – Data either not available or does not fill the criteria for classification*

#### 11.2.1. Endocrine Disruption Properties

Many chemicals may mimic or interfere with the body's hormones, known as the endocrine system. Endocrine disruptors are chemicals that can interfere with endocrine (or hormonal) systems.

Endocrine disruptors interfere with the synthesis, secretion, transport, binding, action, or elimination of natural hormones in the body. Any system in the body controlled by hormones can be derailed by hormone disruptors. Specifically, endocrine disruptors may be associated with the development of learning disabilities, deformations of the body, various cancers and sexual development problems.

Endocrine disrupting chemicals cause adverse effects in animals. But limited scientific information exists on potential health problems in humans. Because people are typically exposed to multiple endocrine disruptors at the same time, assessing public health effects is difficult.

**SECTION 12 Ecological information****12.1. Toxicity**

Chemical Name	Endpoint	Test Duration (hr)	Species	Value	Source
	Not Available	Not Available	Not Available	Not Available	Not Available
wheat flour	Endpoint	Test Duration (hr)	Species	Value	Source
	Not Available	Not Available	Not Available	Not Available	Not Available
water	Endpoint	Test Duration (hr)	Species	Value	Source
	Not Available	Not Available	Not Available	Not Available	Not Available
sodium chloride	Endpoint	Test Duration (hr)	Species	Value	Source
	NOEC(ECx)	168h	Crustacea	0.63mg/l	4
	LC50	96h	Fish	3644-4565mg/l	4
	EC50	72h	Algae or other aquatic plants	20.76-36.17mg/L	4
	EC50	48h	Crustacea	340.7-469.2mg/l	4
	EC50	96h	Algae or other aquatic plants	1110.36mg/L	4
calcium chloride	Endpoint	Test Duration (hr)	Species	Value	Source
	NOEC(ECx)	0h	Fish	8.879mg/L	4
	LC50	96h	Fish	3mg/l	1
	EC50	72h	Algae or other aquatic plants	2900mg/l	2
	EC50	48h	Crustacea	52mg/l	1
	EC50	96h	Algae or other aquatic plants	1109.9mg/L	4
white mineral oil (petroleum)	Endpoint	Test Duration (hr)	Species	Value	Source
	LC50	96h	Fish	>10000mg/L	2
calcium sulfate	Endpoint	Test Duration (hr)	Species	Value	Source
	NOEC(ECx)	0.25h	Fish	75mg/l	4
	LC50	96h	Fish	>79mg/l	2
	EC50	72h	Algae or other aquatic plants	>79mg/l	2
glyceryl triacetate	Endpoint	Test Duration (hr)	Species	Value	Source
	EC0(ECx)	48h	Crustacea	65mg/l	1
	LC50	96h	Fish	>100mg/l	2
	EC50	72h	Algae or other aquatic plants	>940mg/l	2
potassium sorbate	Endpoint	Test Duration (hr)	Species	Value	Source
	LC50	96h	Fish	>500mg/l	2
	EC50	48h	Crustacea	750mg/l	1
Item Numbers: 84332-1009	NOEC(ECx)	72h	Algae or other aquatic plants	8.46mg/l	2 Page 30 of 40

Continued...

## Play Dough in red, blue, yellow, pink neon, orange neon for Creative Sets (Play Dough Sets)

	<b>Endpoint</b>	<b>Test Duration (hr)</b>	<b>Species</b>	<b>Value</b>	<b>Source</b>
aluminium sulfate, hydrated (filter alum)	EC50(ECx)	120h	Fish	<0.001mg/L	5
	LC50	96h	Fish	>0.42mg/l	2
	EC50	72h	Algae or other aquatic plants	0.04mg/l	2
	EC50	48h	Crustacea	0.33mg/l	2
	EC50	96h	Algae or other aquatic plants	0.46mg/l	2
alcohols C13-15-branched and linear, ethoxylated	<b>Endpoint</b>	<b>Test Duration (hr)</b>	<b>Species</b>	<b>Value</b>	<b>Source</b>
	Not Available	Not Available	Not Available	Not Available	Not Available
sodium benzoate	<b>Endpoint</b>	<b>Test Duration (hr)</b>	<b>Species</b>	<b>Value</b>	<b>Source</b>
	NOEC(ECx)	72h	Algae or other aquatic plants	0.09mg/l	2
	LC50	96h	Fish	>100mg/l	2
	EC50	72h	Algae or other aquatic plants	>30.5mg/l	2
	EC50	48h	Crustacea	<650mg/l	1
starch	<b>Endpoint</b>	<b>Test Duration (hr)</b>	<b>Species</b>	<b>Value</b>	<b>Source</b>
	Not Available	Not Available	Not Available	Not Available	Not Available
glycerides, mixed coco, decanoyl and octanoyl	<b>Endpoint</b>	<b>Test Duration (hr)</b>	<b>Species</b>	<b>Value</b>	<b>Source</b>
	EC50(ECx)	72h	Algae or other aquatic plants	>1.8mg/l	2
	EC50	72h	Algae or other aquatic plants	>1.8mg/l	2
glycerol	<b>Endpoint</b>	<b>Test Duration (hr)</b>	<b>Species</b>	<b>Value</b>	<b>Source</b>
	EC0(ECx)	24h	Crustacea	>500mg/l	1
	LC50	96h	Fish	885mg/l	2
citric acid	<b>Endpoint</b>	<b>Test Duration (hr)</b>	<b>Species</b>	<b>Value</b>	<b>Source</b>
	EC50(ECx)	48h	Crustacea	>50mg/l	2
	LC50	96h	Fish	>100mg/l	2
	EC50	72h	Algae or other aquatic plants	990mg/l	2
titanium dioxide	<b>Endpoint</b>	<b>Test Duration (hr)</b>	<b>Species</b>	<b>Value</b>	<b>Source</b>
	BCF	1008h	Fish	<1.1-9.6	7
	NOEC(ECx)	504h	Crustacea	0.02mg/l	4
	LC50	96h	Fish	1.85-3.06mg/l	4
	EC50	72h	Algae or other aquatic plants	3.75-7.58mg/l	4
	EC50	48h	Crustacea	1.9mg/l	2
	EC50	96h	Algae or other aquatic plants	179.05mg/l	2

## Play Dough in red, blue, yellow, pink neon, orange neon for Creative Sets (Play Dough Sets)

	<b>Endpoint</b>	<b>Test Duration (hr)</b>	<b>Species</b>	<b>Value</b>	<b>Source</b>
<b>C.I. Basic Red 1:</b>	LC50	96h	Fish	>=5mg/l	2
	EC50	72h	Algae or other aquatic plants	0.016mg/l	2
	EC50	48h	Crustacea	1mg/l	2
	EC50(ECx)	72h	Algae or other aquatic plants	0.016mg/l	2
<b>C.I. Basic Violet 11 chloride</b>	Endpoint	Test Duration (hr)	Species	Value	Source
	EC50	48h	Crustacea	0.12mg/l	2
	EC50(ECx)	48h	Crustacea	0.12mg/l	2
<b>C.I. Pigment Blue 15</b>	Endpoint	Test Duration (hr)	Species	Value	Source
	BCF	1008h	Fish	<0.33-11	7
	NOEC(ECx)	504h	Crustacea	>=1mg/l	2
	LC50	96h	Fish	~46mg/l	2
	EC50	72h	Algae or other aquatic plants	>100mg/l	2
<b>C.I. Pigment Green 7</b>	EC50	48h	Crustacea	>100mg/l	2
	Endpoint	Test Duration (hr)	Species	Value	Source
	NOEC(ECx)	504h	Crustacea	>=1mg/l	2
	BCF	1008h	Fish	0.51-4.8	7
	LC50	96h	Fish	>100mg/l	2
	EC50	72h	Algae or other aquatic plants	>100mg/l	2
<b>2-methyl-4-isothiazolin-3-one</b>	EC50	48h	Crustacea	153.6mg/l	2
	Endpoint	Test Duration (hr)	Species	Value	Source
	LC50	96h	Fish	0.081-0.122mg/L	4
	EC50	48h	Crustacea	0.189-0.257mg/L	4
	NOEC(ECx)	96h	Algae or other aquatic plants	0.01mg/l	2
<b>isothiazolinones, mixed</b>	EC50	96h	Algae or other aquatic plants	0.063mg/l	2
	Endpoint	Test Duration (hr)	Species	Value	Source
	NOEC(ECx)	504h	Crustacea	0.004mg/l	2
	LC50	96h	Fish	0.129mg/l	2
	EC50	48h	Crustacea	0.007mg/l	2

**12.2. Persistence and degradability**

<b>Ingredient</b>	<b>Persistence: Water/Soil</b>	<b>Persistence: Air</b>
water	LOW	LOW
sodium chloride	LOW	LOW
calcium sulfate	HIGH	HIGH

## Play Dough in red, blue, yellow, pink neon, orange neon for Creative Sets (Play Dough Sets)

Ingredient	Persistence: Water/Soil	Persistence: Air
glyceryl triacetate	LOW	LOW
aluminium sulfate, hydrated (filter alum)	HIGH	HIGH
glycerides, mixed coco, decanoyl and octanoyl	LOW	LOW
glycerol	LOW	LOW
citric acid	LOW	LOW
titanium dioxide	HIGH	HIGH
C.I. Pigment Blue 15	HIGH	HIGH
2-methyl-4-isothiazolin-3-one	HIGH	HIGH

**12.3. Bioaccumulative potential**

Ingredient	Bioaccumulation
sodium chloride	LOW (LogKOW = 0.5392)
calcium sulfate	LOW (LogKOW = -2.2002)
glyceryl triacetate	LOW (BCF = 1.3)
aluminium sulfate, hydrated (filter alum)	LOW (LogKOW = -2.2002)
glycerides, mixed coco, decanoyl and octanoyl	LOW (LogKOW = 2.42)
glycerol	LOW (LogKOW = -1.76)
citric acid	LOW (LogKOW = -1.64)
titanium dioxide	LOW (BCF = 10)
C.I. Pigment Blue 15	LOW (BCF = 11)
C.I. Pigment Green 7	LOW (BCF = 74)
2-methyl-4-isothiazolin-3-one	LOW (LogKOW = -0.8767)

**12.4. Mobility in soil**

Ingredient	Mobility
sodium chloride	LOW (KOC = 14.3)
calcium sulfate	LOW (KOC = 6.124)
glyceryl triacetate	LOW (KOC = 48.06)
aluminium sulfate, hydrated (filter alum)	LOW (KOC = 6.124)
glycerides, mixed coco, decanoyl and octanoyl	LOW (KOC = 10)
glycerol	HIGH (KOC = 1)
citric acid	LOW (KOC = 10)
titanium dioxide	LOW (KOC = 23.74)
C.I. Pigment Blue 15	LOW (KOC = 10000000000)
2-methyl-4-isothiazolin-3-one	LOW (KOC = 27.88)

**12.5. Results of PBT and vPvB assessment**

	P	B	T
Relevant available data	Not Available	Not Available	Not Available
PBT	✗	✗	✗
vPvB	✗	✗	✗
PBT Criteria fulfilled?	No		
vPvB	No		

**12.6. Endocrine Disruption Properties**

The evidence linking adverse effects to endocrine disruptors is more compelling in the environment than it is in humans. Endocrine disruptors profoundly alter reproductive physiology of ecosystems and ultimately impact entire populations. Some endocrine-disrupting chemicals are slow to break-down in the environment. That characteristic makes them potentially hazardous over long periods of time. Some well established adverse effects of endocrine disruptors in various wildlife species include; eggshell-thinning, displayed of characteristics of the opposite sex and impaired reproductive development. Other adverse changes in wildlife species that have been suggested, but not proven include; reproductive abnormalities, immune dysfunction and skeletal deformities.

**12.7. Other adverse effects**

One or more ingredients within this SDS has the potential of causing ozone depletion and/or photochemical ozone creation.

**SECTION 13 Disposal considerations****13.1. Waste treatment methods**

<b>Product / Packaging disposal</b>	<ul style="list-style-type: none"> <li>‣ DO NOT allow wash water from cleaning or process equipment to enter drains.</li> <li>‣ It may be necessary to collect all wash water for treatment before disposal.</li> <li>‣ In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.</li> <li>‣ Where in doubt contact the responsible authority.</li> </ul>
<b>Waste treatment options</b>	Not Available
<b>Sewage disposal options</b>	Not Available

**SECTION 14 Transport information****Labels Required**

<b>Marine Pollutant</b>	NO
<b>HAZCHEM</b>	Not Applicable

**Land transport (ADR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS**

<b>14.1. UN number</b>	Not Applicable	
<b>14.2. UN proper shipping name</b>	Not Applicable	
<b>14.3. Transport hazard class(es)</b>	Class	Not Applicable
	Subrisk	Not Applicable
<b>14.4. Packing group</b>	Not Applicable	

Page 35 of 40

Play Dough in red, blue, yellow, pink neon, orange neon for Creative Sets (Play Dough Sets)

<b>14.5. Environmental hazard</b>	Not Applicable	
<b>14.6. Special precautions for user</b>	Hazard identification (Kemler)	Not Applicable
	Classification code	Not Applicable
	Hazard Label	Not Applicable
	Special provisions	Not Applicable
	Limited quantity	Not Applicable
	Tunnel Restriction Code	Not Applicable

**Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS**

<b>14.1. UN number</b>	Not Applicable	
<b>14.2. UN proper shipping name</b>	Not Applicable	
<b>14.3. Transport hazard class(es)</b>	ICAO/IATA Class	Not Applicable
	ICAO / IATA Subrisk	Not Applicable
	ERG Code	Not Applicable
<b>14.4. Packing group</b>	Not Applicable	
<b>14.5. Environmental hazard</b>	Not Applicable	
<b>14.6. Special precautions for user</b>	Special provisions	Not Applicable
	Cargo Only Packing Instructions	Not Applicable
	Cargo Only Maximum Qty / Pack	Not Applicable
	Passenger and Cargo Packing Instructions	Not Applicable
	Passenger and Cargo Maximum Qty / Pack	Not Applicable
	Passenger and Cargo Limited Quantity Packing Instructions	Not Applicable
	Passenger and Cargo Limited Maximum Qty / Pack	Not Applicable

**Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS**

<b>14.1. UN number</b>	Not Applicable	
<b>14.2. UN proper shipping name</b>	Not Applicable	
<b>14.3. Transport hazard class(es)</b>	IMDG Class	Not Applicable
	IMDG Subrisk	Not Applicable
<b>14.4. Packing group</b>	Not Applicable	
<b>14.5. Environmental hazard</b>	Not Applicable	
<b>14.6. Special precautions for user</b>	EMS Number	Not Applicable
	Special provisions	Not Applicable
	Limited Quantities	Not Applicable

Play Dough in red, blue, yellow, pink neon, orange neon for Creative Sets (Play Dough Sets)

**Inland waterways transport (ADN): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS**

14.1. UN number	Not Applicable	
14.2. UN proper shipping name	Not Applicable	
14.3. Transport hazard class(es)	Not Applicable	Not Applicable
14.4. Packing group	Not Applicable	
14.5. Environmental hazard	Not Applicable	
14.6. Special precautions for user	Classification code	Not Applicable
	Special provisions	Not Applicable
	Limited quantity	Not Applicable
	Equipment required	Not Applicable
	Fire cones number	Not Applicable

**14.7. Transport in bulk according to Annex II of MARPOL and the IBC code**

Not Applicable

**14.8. Transport in bulk in accordance with MARPOL Annex V and the IMSBC Code**

Product name	Group
wheat flour	Not Available
water	Not Available
sodium chloride	Not Available
calcium chloride	Not Available
white mineral oil (petroleum)	Not Available
calcium sulfate	Not Available
glyceryl triacetate	Not Available
potassium sorbate	Not Available
aluminium sulfate, hydrated (filter alum)	Not Available
alcohols C13-15-branched and linear, ethoxylated	Not Available
sodium benzoate	Not Available
starch	Not Available
glycerides, mixed coco, decanoyl and octanoyl	Not Available
glycerol	Not Available
citric acid	Not Available
titanium dioxide	Not Available
C.I. Basic Red 1:1	Not Available
C.I. Basic Violet 11 chloride	Not Available
C.I. Pigment Blue 15	Not Available
C.I. Pigment Green 7	Not Available

Item Numbers: 84332-1009

Page 36 of 40

Continued...

Page 37 of 40

Play Dough in red, blue, yellow, pink neon, orange neon for Creative Sets (Play Dough Sets)

Product name	Group
2-methyl-4-isothiazolin-3-one	Not Available
isothiazolinones, mixed	Not Available

#### 14.9. Transport in bulk in accordance with the ICG Code

Product name	Ship Type
wheat flour	Not Available
water	Not Available
sodium chloride	Not Available
calcium chloride	Not Available
white mineral oil (petroleum)	Not Available
calcium sulfate	Not Available
glyceryl triacetate	Not Available
potassium sorbate	Not Available
aluminium sulfate, hydrated (filter alum)	Not Available
alcohols C13-15-branched and linear, ethoxylated	Not Available
sodium benzoate	Not Available
starch	Not Available
glycerides, mixed coco, decanoyl and octanoyl	Not Available
glycerol	Not Available
citric acid	Not Available
titanium dioxide	Not Available
C.I. Basic Red 1:1	Not Available
C.I. Basic Violet 11 chloride	Not Available
C.I. Pigment Blue 15	Not Available
C.I. Pigment Green 7	Not Available
2-methyl-4-isothiazolin-3-one	Not Available
isothiazolinones, mixed	Not Available

### SECTION 15 Regulatory information

#### 15.1. Safety, health and environmental regulations / legislation specific for the substance or mixture

wheat flour is found on the following regulatory lists

Not Applicable

water is found on the following regulatory lists

Europe EC Inventory

European Union - European Inventory of Existing Commercial Chemical Substances (EINECS)

## Play Dough in red, blue, yellow, pink neon, orange neon for Creative Sets (Play Dough Sets)

**sodium chloride is found on the following regulatory lists**

Europe EC Inventory

European Union - European Inventory of Existing Commercial Chemical Substances (EINECS)

**calcium chloride is found on the following regulatory lists**

Europe EC Inventory

European Union - European Inventory of Existing Commercial Chemical Substances (EINECS)

European Union (EU) Regulation (EC) No 1272/2008 on Classification, Labelling and Packaging of Substances and Mixtures - Annex VI

**white mineral oil (petroleum) is found on the following regulatory lists**

Chemical Footprint Project - Chemicals of High Concern List

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs

Europe EC Inventory

European Union - European Inventory of Existing Commercial Chemical Substances (EINECS)

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Group 1: Carcinogenic to humans

**calcium sulfate is found on the following regulatory lists**

Europe EC Inventory

EU Consolidated List of Indicative Occupational Exposure Limit Values (IOELVs)

European Union - European Inventory of Existing Commercial Chemical Substances (EINECS)

**glyceryl triacetate is found on the following regulatory lists**

Europe EC Inventory

European Union - European Inventory of Existing Commercial Chemical Substances (EINECS)

**potassium sorbate is found on the following regulatory lists**

Europe EC Inventory

European Union - European Inventory of Existing Commercial Chemical Substances (EINECS)

European Union (EU) Regulation (EC) No 1272/2008 on Classification, Labelling and Packaging of Substances and Mixtures - Annex VI

**aluminium sulfate, hydrated (filter alum) is found on the following regulatory lists**

EU European Chemicals Agency (ECHA) Community Rolling Action Plan (CoRAP) List of Substances

European Union - European Inventory of Existing Commercial Chemical Substances (EINECS)

Europe EC Inventory

**alcohols C13-15-branched and linear, ethoxylated is found on the following regulatory lists**

Europe EC Inventory

**sodium benzoate is found on the following regulatory lists**

Europe EC Inventory

European Union - European Inventory of Existing Commercial Chemical Substances (EINECS)

**starch is found on the following regulatory lists**

Europe EC Inventory

EU Consolidated List of Indicative Occupational Exposure Limit Values (IOELVs)

European Union - European Inventory of Existing Commercial Chemical Substances (EINECS)

**glycerides, mixed coco, decanoyl and octanoyl is found on the following regulatory lists**

Europe EC Inventory

European Union - European Inventory of Existing Commercial Chemical Substances (EINECS)

European Union (EU) Regulation (EC) No 1272/2008 on Classification, Labelling and Packaging of Substances and Mixtures - Annex VI

International WHO List of Proposed Occupational Exposure Limit (OEL) Values for Manufactured Nanomaterials (MNMS)

**glycerol is found on the following regulatory lists**

Europe EC Inventory

EU Consolidated List of Indicative Occupational Exposure Limit

European Union - European Inventory of Existing Commercial Chemical Substances (EINECS)

Values (IOELVs)

Item Numbers: 84332-1009

Page 39 of 40

Play Dough in red, blue, yellow, pink neon, orange neon for Creative Sets (Play Dough Sets)

**citric acid is found on the following regulatory lists**

Europe EC Inventory

European Union - European Inventory of Existing Commercial Chemical Substances (EINECS)

**titanium dioxide is found on the following regulatory lists**

Chemical Footprint Project - Chemicals of High Concern List  
 EU European Chemicals Agency (ECHA) Community Rolling Action Plan (CoRAP) List of Substances  
 Europe EC Inventory  
 European Union - European Inventory of Existing Commercial Chemical Substances (EINECS)  
 EU Consolidated List of Indicative Occupational Exposure Limit Values (IOELVs)

European Union (EU) Regulation (EC) No 1272/2008 on Classification, Labelling and Packaging of Substances and Mixtures - Annex VI

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Group 2B: Possibly carcinogenic to humans

International WHO List of Proposed Occupational Exposure Limit (OEL) Values for Manufactured Nanomaterials (MNMS)

**C.I. Basic Red 1:1 is found on the following regulatory lists**

Europe EC Inventory

European Union - European Inventory of Existing Commercial Chemical Substances (EINECS)

**C.I. Basic Violet 11 chloride is found on the following regulatory lists**

Europe EC Inventory

European Union - European Inventory of Existing Commercial Chemical Substances (EINECS)

**C.I. Pigment Blue 15 is found on the following regulatory lists**

Europe EC Inventory  
 European Union - European Inventory of Existing Commercial Chemical Substances (EINECS)

International WHO List of Proposed Occupational Exposure Limit (OEL) Values for Manufactured Nanomaterials (MNMS)

EU Consolidated List of Indicative Occupational Exposure Limit Values (IOELVs)

**C.I. Pigment Green 7 is found on the following regulatory lists**

Europe EC Inventory  
 European Union - European Inventory of Existing Commercial Chemical Substances (EINECS)

International WHO List of Proposed Occupational Exposure Limit (OEL) Values for Manufactured Nanomaterials (MNMS)

EU Consolidated List of Indicative Occupational Exposure Limit Values (IOELVs)

**2-methyl-4-isothiazolin-3-one is found on the following regulatory lists**

Europe EC Inventory  
 European Union - European Inventory of Existing Commercial Chemical Substances (EINECS)

European Union (EU) Regulation (EC) No 1272/2008 on Classification, Labelling and Packaging of Substances and Mixtures - Annex VI

**isothiazolinones, mixed is found on the following regulatory lists**

European Union (EU) Regulation (EC) No 1272/2008 on Classification, Labelling and Packaging of Substances and Mixtures - Annex VI

This safety data sheet is in compliance with the following EU legislation and its adaptations - as far as applicable - : Commission Regulation (EU) 2020/878; Regulation (EC) No 1907/2006, Regulation (EC) No 1272/2008 as updated through ATPs

**15.2. Chemical safety assessment**

No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

## SECTION 16 Other information

### Full text Risk and Hazard codes

<b>H301</b>	Toxic if swallowed.
<b>H302</b>	Harmful if swallowed.
<b>H310</b>	Fatal in contact with skin.
<b>H311</b>	Toxic in contact with skin.
<b>H314</b>	Causes severe skin burns and eye damage.
<b>H315</b>	Causes skin irritation.
<b>H317</b>	May cause an allergic skin reaction.
<b>H318</b>	Causes serious eye damage.
<b>H319</b>	Causes serious eye irritation.
<b>H330</b>	Fatal if inhaled.
<b>H332</b>	Harmful if inhaled.
<b>H400</b>	Very toxic to aquatic life.
<b>H410</b>	Very toxic to aquatic life with long lasting effects.
<b>H412</b>	Harmful to aquatic life with long lasting effects.

### Other information

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

**End of SDS**

*This SDS is based on a review of the information and documentation supplied without further verification by Intertek as to their accuracy or completeness. It is made solely on the basis of your instructions and/or information supplied by you. We provide no warranty that the information is truly representative of the sample source. It is limited to publicly available information and the state of knowledge as at the date of this SDS, particularly with respect to the health and safety information, and this SDS should be reviewed if the composition of the formulation is changed or when new information becomes available.*