


SAFETY DATA SHEET

Section 1. Identification

Product identifier	: COLORTHERM YELLOW 20
Material Number	: 05601258
Chemical family	: Inorganic Metal oxide.
Identified uses	: Inorganic pigment
Supplier/Manufacturer	: LANXESS Corporation Product Safety & Regulatory Affairs 111 RIDC Park West Drive Pittsburgh, PA 15275-1112 USA
	For information: US/Canada (800) LANXESS International +1 412 809 1000
In case of emergency	: Chemtrec (800) 424-9300 International (703) 527-3887 Lanxess Emergency Phone (800) 410-3063.

Section 2. Hazards identification

HAZCOM Standard Status	: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Physical state	: Powder.
Color	: Yellow.
Classification of the substance or mixture	: SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 Percentage of the mixture consisting of ingredient(s) of unknown toxicity: 5.5%
Hazard pictograms	: 
Signal word	: Warning
Hazard statements	: May cause respiratory irritation.
Hazard Not Otherwise Classified (HNOC)	: None known.
Precautionary statements	
Prevention	: Use only in a well-ventilated area. Avoid breathing dust.
Response	: Get medical attention if you feel unwell. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
Storage	: Store locked up.
Disposal	: Dispose of contents and container in accordance with all local, regional, national and international regulations.
Supplemental label elements	: Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials and food and drink.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

CAS number : -

Ingredient name	%	CAS number
aluminium compound	15 - ≤25	Trade secret.
Phosphoric acid, aluminum salt (1:1)	≤10	7784-30-7
titanium dioxide	≤5	13463-67-7

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. If not breathing, if breathing is irregular or respiratory arrest occurs, provide artificial respiration, or oxygen by a trained professional, using a pocket type respirator.
- Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Potential acute health effects

- Eye contact** : May cause mechanical irritation (abrasion).
- Inhalation** : May cause respiratory irritation.
- Skin contact** : May cause mechanical irritation (abrasion).
- Ingestion** : No known significant effects or critical hazards.

Over-exposure signs/symptoms

- Eye contact** : No specific data.
- Inhalation** : May cause respiratory tract irritation with symptoms of coughing, sore throat and runny nose.
- Skin contact** : No specific data.
- Ingestion** : No specific data.

Potential chronic health effects

Long-term exposure to high concentrations of dust containing iron oxide can cause a benign condition termed "pulmonary siderosis". This condition is not associated with any physical impairment of lung function. Repeated or prolonged inhalation of dust may lead to chronic respiratory irritation.

- Notes to physician** : Treat symptomatically. No specific treatment.

Section 4. First aid measures

Protection of first-aiders : No special measures required.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire. In case of fire, use water spray (fog), foam or dry chemical.

Unsuitable extinguishing media : None known.

Specific hazards arising from the chemical : No specific fire or explosion hazard.

Hazardous thermal decomposition products : No specific data.

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing dust. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up : Move containers from spill area. Approach release from upwind. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labeled waste container. Avoid creating dusty conditions and prevent wind dispersal. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal. Prevent entry into sewers, water courses, basements or confined areas.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing dust. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container. Remove contaminated clothing and protective equipment before entering eating areas. Workers should wash hands and face before eating, drinking and smoking. Put on appropriate personal protection equipment. Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed.

Section 7. Handling and storage

Conditions for safe storage : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. Empty containers retain product residue and can be hazardous. Do not reuse container.

Section 8. Exposure controls/personal protection

Occupational exposure limits

Ingredient name	Exposure limits
aluminium compound	ACGIH TLV (United States, 3/2015). TWA: 1 mg/m ³ 8 hours. Form: Respirable fraction
Phosphoric acid, aluminum salt (1:1)	ACGIH TLV (United States). TWA: 1 mg/m ³ , (Respirable fraction) 8 hours. ACGIH TLV (United States). TWA: 1 mg/m ³ Form: Respirable fraction ACGIH TLV (United States, 3/2015). TWA: 1 mg/m ³ 8 hours. Form: Respirable fraction
titanium dioxide	ACGIH TLV (United States, 3/2015). TWA: 10 mg/m ³ 8 hours. OSHA PEL (United States, 2/2013). TWA: 15 mg/m ³ 8 hours. Form: Total dust

If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

Appropriate engineering controls : Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Personal protection

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Respiratory protection : The following respirator is recommended if airborne concentrations exceed the appropriate standard/guideline. NIOSH approved, air-purifying particulate respirator with N-95 filters.

Skin protection : Wear suitable protective clothing and gloves. Suitable protective footwear.

Eye/face protection : If contact with product is possible, wear safety glasses with side shields.

Medical Surveillance : Not available.

Section 9. Physical and chemical properties

Physical state	: Solid. [Powder.]
Color	: Yellow.
Odor	: Odorless.
Odor threshold	: Not available.
pH	: 4 to 8 [Conc. (% w/w): 5%]
Boiling point	: Not available.
Melting point	: >1000°C (>1832°F)
Flash point	: Not available.
Evaporation rate	: Not available.
Explosion limits	: Not available.
Vapor pressure	: Not available.
Specific gravity (Relative density)	: 4 to 5
Bulk density	: 300 to 1000 kg/m ³
Solubility in water	: Insoluble in the following materials: cold water
Partition coefficient: n-octanol/water	: Not available.
Vapor density	: Not available.
Viscosity	: Not available.
Auto-ignition temperature	: Not available.
Decomposition temperature	: Not available.

Section 10. Stability and reactivity

Reactivity	: No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	: The product is stable.
Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	: No specific data.
Incompatible materials	: No specific data.
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on the likely routes of exposure : Dermal contact. Eye contact. Inhalation. Ingestion.

Potential acute health effects

Eye contact	: May cause mechanical irritation (abrasion).
Inhalation	: May cause respiratory irritation.
Skin contact	: May cause mechanical irritation (abrasion).
Ingestion	: No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact	: No specific data.
Inhalation	: May cause respiratory tract irritation with symptoms of coughing, sore throat and runny nose.
Skin contact	: No specific data.
Ingestion	: No specific data.

Potential chronic health effects

Short term exposure

Section 11. Toxicological information

Potential immediate effects : Not available.

Long term exposure

Potential delayed effects : Not available.

General : Long-term exposure to high concentrations of dust containing iron oxide can cause a benign condition termed "pulmonary siderosis". This condition is not associated with any physical impairment of lung function. Repeated or prolonged inhalation of dust may lead to chronic respiratory irritation.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure	Test
COLORTHERM Yellow 20	LD50 Oral	Rat	>5000 mg/kg	-	-
titanium dioxide	LC50 Inhalation Dusts and mists	Rat	>6.82 g/m ³	4 hours	*

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation	Reversibility
titanium dioxide	Skin - Erythema/Eschar	Rabbit	0.28	-	-	Fully reversible
	Skin - Edema	Rabbit	0	-	-	Fully reversible
	Eyes - Edema of the conjunctivae	Rabbit	0	-	-	Fully reversible
	Eyes - Redness of the conjunctivae	Rabbit	0.1	-	-	Fully reversible

Conclusion/Summary

Skin : Non-irritating. *Test results on an analogous product

Eyes : Non-irritating. *Test results on an analogous product

Sensitization

Product/ingredient name	Route of exposure	Species	Result
titanium dioxide	skin	Guinea pig	Not sensitizing
	skin	Mouse	Not sensitizing

Skin : aluminium compound:Not sensitizing

Chronic toxicity

Product/ingredient name	Result	Species	Dose	Exposure
aluminium compound titanium dioxide	Chronic NOAEL Unreported	Rat	14470 ppm	28 days
	Sub-chronic NOEL Oral	Rat - Male	24000 mg/kg	29 days; 7 days per week
	Chronic NOEL Inhalation Dusts and mists	Rat - Male, Female	10 mg/m ³	2 years; 6 hours per day

Mutagenicity

Section 11. Toxicological information

Product/ingredient name	Test	Experiment	Result
titanium dioxide	OECD 471 Bacterial Reverse Mutation Test	Experiment: In vitro Subject: Bacteria Metabolic activation: +/-	Negative
	OECD 473 <i>In vitro</i> Mammalian Chromosomal Aberration Test	Experiment: In vitro Subject: Mammalian-Animal Cell: Germ	Negative
	OECD 476 <i>In vitro</i> Mammalian Cell Gene Mutation Test	Experiment: In vitro Subject: Mammalian-Animal Cell: Somatic	Negative
	OECD 474 Mammalian Erythrocyte Micronucleus Test	Experiment: In vitro Subject: Mammalian-Animal Cell: Germ	Negative
	OECD 487 <i>In vitro</i> Micronucleus Test	Experiment: In vitro Subject: Mammalian-Human Cell: Somatic	Negative

Conclusion/Summary : titanium dioxide:Not mutagenic in a standard battery of genetic toxicological tests.

Carcinogenicity

Conclusion/Summary : In a lifetime inhalation study rats were exposed for 2 years to respirable TiO₂. Microscopic lung tumors were observed in some rats which caused overloading and impairment of rat lung clearance mechanisms. Mice and hamsters did not develop lung tumors under similar testing conditions.

Detailed epidemiology studies have also shown no causative link between titanium dioxide exposure and cancer risk in human and no lung cancer hazard workplace exposure concentration. In February 2006 IARC concluded, "There is inadequate evidence in humans for the carcinogenicity of titanium dioxide."

Product/ingredient name	CAS #	IARC	NTP	OSHA
aluminium compound	Trade secret.	Not classified.	Not classified.	Not classified.
Phosphoric acid, aluminum salt (1:1)	7784-30-7	Not classified.	Not classified.	Not classified.
titanium dioxide	13463-67-7	2B Possibly carcinogenic to humans	Not classified.	Not classified.

Teratogenicity

Product/ingredient name	Result	Species	Dose	Exposure
aluminium compound	Negative - Oral	Rat - Female	1000 mg/kg NOAEL	-

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
aluminium compound	Category 3	Not applicable.	Respiratory tract irritation
Phosphoric acid, aluminum salt (1:1)	Category 3	Not applicable.	Respiratory tract irritation
titanium dioxide	Category 3	Not applicable.	Respiratory tract irritation

Acute toxicity estimates

Route	ATE value (Acute Toxicity Estimates)
Not available.	

Section 12. Ecological information

Toxicity

Product/ingredient name	Test	Result	Species	Exposure
aluminium compound	OECD 201 Alga, Growth Inhibition Test	Acute LC50 >100 mg/l	Algae - Selenastrum capricornutum	72 hours
	OECD 202 <i>Daphnia</i> sp. Acute Immobilization Test	Acute LC50 >100 mg/l	Daphnia - <i>Daphnia magna</i>	48 hours
titanium dioxide	OECD 203 Fish, Acute Toxicity Test	Acute LC50 >100 mg/l	Fish - <i>Salmo trutta</i>	96 hours
	OECD 202 <i>Daphnia</i> sp. Acute Immobilization Test	Acute EC50 >100 mg/l Fresh water	Daphnia - <i>Daphnia magna</i>	48 hours
	-	Acute IC50 61 mg/l Growth rate inhibition	Algae - <i>Pseudokirchneriella subcapitata</i>	72 hours
	EPA 540/9-85-006	Acute LC50 >1000 mg/l Fresh water	Fish - <i>Pimephales promelas</i>	96 hours
	OECD 209 Activated Sludge, Respiration Inhibition Test	Chronic EC50 >1000 mg/l Fresh water	Bacteria	3 hours
-	Chronic IC10 12.7 mg/l Growth rate inhibition	Algae - <i>Pseudokirchneriella subcapitata</i>	72 hours	

Conclusion/Summary : Not available.

Persistence and degradability

Conclusion/Summary : Not available.

Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
titanium dioxide	-	<400	low

Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Waste disposal should be in accordance with existing federal state, provincial and or local environmental controls laws.

RCRA classification : If discarded in its purchased form, this product would not be a hazardous waste either by listing or by characteristic. However, under RCRA, it is the responsibility of the product user to determine at the time of disposal, whether a material containing the product or derived from the product should be classified as a hazardous waste. (40 CFR 261.20-24)

Section 14. Transport information

Regulatory information	UN number	Proper shipping name	Classes	PG*	Label	Additional information
DOT Classification	-	-	-	-		Not regulated.
IMDG Class	-	-	-	-		Not regulated.
IATA-DGR Class	-	-	-	-		Not regulated.

PG* : Packing group

RQ : 0 lbs

Section 15. Regulatory information

SARA 311/312 : Immediate (acute) health hazard
Delayed (chronic) health hazard

SARA Title III Section 302 : None

Extremely Hazardous Substances

SARA Title III Section 313 : None

Toxic Chemicals

US EPA CERCLA : None

Hazardous Substances (40 CFR 302.4)

State regulations

The following chemicals are specifically listed by individual states; other product specific health and safety data in other sections on the SDS may also be applicable for state requirements. For details on your regulatory requirements you should contact the appropriate agency in your state.

<u>Ingredient name</u>	<u>CAS number</u>	<u>State Code</u>	<u>Concentration (%)</u>
Titanium dioxide (Rutile)	13463-67-7	MA - S, NJ - HS, PA - RTK HS	1 - 3%
Phosphorus salt derivative	Trade secret.	NJ - HS	5 - 10%
C.I. Pigment Yellow 42	51274-00-1		67 - 73%
Metallic oxides.	Trade secret.		18 - 24%
Proprietary siloxanes	Trade secret.		1 - 3%

Massachusetts Substances: MA - S

Massachusetts Extraordinary Hazardous Substances: MA - Extra HS

New Jersey Hazardous Substances: NJ - HS

Pennsylvania RTK Hazardous Substances: PA - RTK HS

Pennsylvania Special Hazardous Substances: PA - Special HS

California Prop. 65

WARNING: This product contains a chemical known to the State of California to cause cancer.

<u>Ingredient name</u>	<u>CAS #</u>	<u>Concentration (%)</u>	<u>Cancer</u>	<u>Reproductive</u>
titanium dioxide	13463-67-7	≤5	Yes	

U.S. Toxic Substances Control Act : Listed on the TSCA Inventory.

Section 16. Other information

Hazardous Material Information System

Health	*	2
Flammability		0
Physical hazards		0

0=Insignificant 1=Slight 2=Moderate 3=High 4=Extreme
*=Chronic

The customer is responsible for determining the PPE code for this material. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

National Fire Protection Association (U.S.A.)



0= Minimal 1=Slight 2=Moderate 3=Serious 4=Severe

Our method of hazard communication is comprised of Product Labels and Safety Data Sheets. HMIS and NFPA ratings are provided as a customer service.

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Product Safety and Regulatory Affairs

▣ Indicates information that has changed from previously issued version.

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