

# MATERIAL SAFETY DATA SHEET

## 1. IDENTIFICATION OF CHEMICAL PRODUCT AND DATA ON PRODUCER

**Product name:** "the Composite material of the reaction is chemically grafted functional polymers-MODIFIERS with the alphanumeric abbreviation for the application in polymer industry, the trademark "KOMPPLEN" (Kompplen), hereinafter referred to as "modifying agent "Kompplen"".

**Quick details on the application of:** Modifying agent "Kompplen" is a composite material based on polymers basis containing as a modifier of the reaction monomers, the active minerals that give the other polymers set of the required performance and processing properties.

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## 2. HAZARD IDENTIFICATION

Modifying agent "Kompplen" are not capable for the spontaneous combustion, are not explosive, do not emit toxic substances into the environment at room temperature and do not have a harmful effect on the human body in direct contact.

## 3. INGREDIENTS :

- Polyolefins;
- Reactional monomers;
- Thermostabilizers;
- Co-monomers;
- initiating agents;
- Peroxides;
- Catalysts.

## 4. FIRST AID MEASURES

- **In case of contact with eyes:** rinse eyes thoroughly with water. If you need to go to the doctor.
- **Skin exposure:** Molten material may cause burns if touched. The affected area of the skin should be cooled under ice water and immediately consult a doctor.



- **When inhaled:** does not cause inhalation poisoning. Irritating airways vapors may be formed only during production or processing, if necessary, remove the victim to a fresh air and seek medical attention.

## 5. SECURING OF FIRE AND EXPLOSION SAFETY

- **General characteristics:** polymer composition (dry powder) is combustible. In contact with the open flame burns smokeless flame with the formation of gaseous products characteristic of polymers (formaldehyde, acetaldehyde, carbon monoxide, organic acids).
- **Suitable extinguishing media:** water spray, foam and carbon dioxide fire extinguishers.

## 6. PREVENTION AND ELIMINATION EMERGENCY AND EMERGENCY SITUATIONS AND THEIR CONSEQUENCES

Scattered modifying agent "Kompllen" should be collected in a separate container. In the processing of the modifying agent "Kompllen" possible accumulation of static electricity. In accordance with the "rules of protection against static electricity in the production of chemical, petrochemical industry" equipment should be grounded, the relative humidity in the working areas should not be less than 50%. Prevent from entering soil, ditches, sewers, waterways or groundwater.

## 7. METHODS OF HANDLING AND STORAGE PRODUCTS

The modifying agent "Kompllen" is transported by any kind of transport in covered vehicles that provide protection from the precipitation, direct sunlight, pollution and losses, in accordance with the rules of carriage of goods by this mode of transport supplied for loading transport must ensure the integrity of the package during loading and transportation.

To store the modifying agent "Kompllen" on pallets in indoor storage area that provides protection from rain, direct sunlight, dirt on distance not less 1 m from heaters. The optimum storage temperature is 10°C to 35°C.

## 8. RULES AND MEASURES TO ENSURE THE SAFETY OF PERSONNEL

With the purpose to observance of sanitary and hygienic requirements and creation of normal working conditions in production rooms:

- arrangement of the processing equipment shall conform to SP 2.2.2.1327-03;
- for removal of possible industrial hazards (heat release, volatile products of partial destruction during overheating of the material due to violation of the processing mode), the processing premises should be equipped with forced supply and exhausting system and General exchange ventilation, and local forced exhaust ventilation should be installed over mixing reactors and equipment in places of decomposition products release



- in accordance with GOST 12.4.021. The production hall must be equipped with automatically activated emergency ventilation;
- natural and artificial lighting should be organized in accordance with the Construction Norms & Regulation (SNIIP) 23-05-95;
  - the microclimate parameters must correspond to the sanitary norms and regulations (SanPiN) 2.2.4.548-96;
  - Levels of industrial noise shall meet the requirements of the sanitary norms 2.2.4.2.1.8.562-96 when exceeding maximum permitted level of noise requires the use of personal protective equipment ("Earplugs", headphones);
  - Employees engaged in the production and processing modifier "Complain", should be provided with ablution facilities, which are equipped in accordance with the Construction Norms & Regulation (SNIIP) 2.09.04-87
  - **Body protection:** workwear should be used in the special form of a suit (jacket-pants) or a robe made of cotton fabric;
  - **Hand protection:** protective gloves
  - **Respiratory protection:** in case of emergency the use of BCF gas masks with filter or gas masks, type "M" shall be provided

#### 9. PHYSICAL AND CHEMICAL PROPERTIES

- **Physical form:** powder and fine pellets of white color, grey, cream-coloured, or transparent, or yellow.
- **Smell:** none.
- **Density:** not less than 0,35 g/cm<sup>3</sup>
- **MFI index:** 0,5-150,0
- **Brittleness temperature:** -70°C
- **Strength at yield at 23°C:** not less 10 MPa
- **The softening temperature for Vika:** not less than 70°C

#### 10. STABILITY AND REACTIVITY CAPABILITIES

- **Chemical stability:** the product is chemically stable at room temperature and atmospheric pressure
- **Conditions to avoid:** exposure to elevated temperatures
- **Incompatible materials:** strong oxidizers
- **Decomposition products:** formaldehyde, acetaldehyde, carbon monoxide, organic acids

#### 11. TOXICITY

**Effect when inhaled:** inhalation of dust may cause coughing

**Short-term toxic effect:** LD50 (oral, rat) =3200 mg / kg, LC50 (inhalation, mouse) =12'000 mg m<sup>3</sup>

Volatile products of destruction when the content in the air of the working area in concentrations exceeding the maximum permissible, can cause acute and chronic poisoning.



- **Formaldehyde** - irritant gas, which also has a general toxic effect, has a strong effect on the central nervous system, carcinogen.
- **Acetaldehyde vapors** cause irritation of the mucous membranes of the upper respiratory tract, suffocation, cough, bronchitis, pneumonia.
- **Acetic acid vapors** irritate the skin and mucous membranes of the upper respiratory tract.
- **Carbon monoxide** is a colorless gas that causes suffocation due to difficulty in transferring oxygen to organs and tissues due to the formation of blood oxyhemoglobin, the defeat of the Central and peripheral nervous system.
- **Methanol** - cause cough, dizziness, headache, nausea, weakness, visual disturbances.

Maximum permissible concentrations (MPC) of volatile substances in the air of the working area of industrial premises are given in the table.

Name of harmful substance	Ignition temperature, °C	The area of ignition, %	MPC as per HR 2.2.5.1313-03 mg/m <sup>3</sup>	Hazard class 2.2.5.1313-03
Carbon monoxide	610	12,5 ÷ 74,0	20,0	4
Acetaldehyde	185	4,0 ÷ 55,0	5,0	3
Formaldehyde	430	7,9 ÷ 73,0	0,5	2
Organic acids (calculated as acetic acid)	454	3,3 ÷ 22,0	5,0	3

## 12. THE IMPACT ON THE ENVIRONMENT

**Waste water generation:** Waste water is not generated during the processing of modifying agent "Kompllen". Special air purification of industrial premises is not required.

**The impact of solid waste:** from processing of modifying agent "Kompllen" solid waste are non-toxic, do not require neutralization, not subject to recycling. Waste liable to disposal in a designated area in accordance with the sanitary norms and regulations (SanPiN) 2.1.7.1322-03.

**The impact on the atmosphere:** atmospheric air Protection is carried out in accordance with GOST 17.2.3.02. The content of the polluting substances in atmospheric air within the sanitary protection zone shall not exceed the standards specified in the hygienic regulations (HR) 2.1.6.1338-03.

Maximum permissible concentrations (MPC) of pollutants in atmospheric air of populated areas are given in the Table



The name of the substance	MPC as per HR 2.1.6.1338-03 maximum permissible dose, mg/m <sup>3</sup>	MPC as per HR 2.1.6.1338-03 average daily, mg/m <sup>3</sup>
Formaldehyde	0,035	0,003
Acetaldehyde	0,01	-
Organic acids (calculated as acetic acid)	0,2	0,06
Carbon monoxide	5,0	3,0

### 13. UTILIZATION OF WASTES

From processing "Compline" solid waste are non-toxic, do not require neutralization, not subject to recycling. Waste is to be buried in a special place in accordance with the sanitary norms and regulations (SanPiN) 2.1.7.1322-03

### 14. INFORMATION DURING THE TRANSPORTATION

**Shipping name:** "Modifying agent "Kompllen"" with the alphanumeric abbreviation. The modifying agent "Kompllen" is transported by any kind of transport in covered vehicles that provide protection from precipitation, direct sunlight, pollution and losses, in accordance with the rules of carriage of goods by this mode of transport. The transport to be loaded shall ensure the integrity of the package during loading and transport.

### 15. INFORMATION ON NATIONAL AND INTERNATIONAL LEGISLATION

**National legislation:** there are no special restrictions on the use in the Russian Federation, as well as restrictions on fire, the danger of aquatic environments or danger to personnel related to the production of our products.

### 16. ADDITIONAL INFORMATION

**The product is manufactured in accordance with technical specification 2211-760-99410306-2009**

The manufacturer guarantees the conformity of the modifying agent "Kompllen" to the Technical Requirements under the conditions of storage, transportation and processing.

**Guaranteed shelf life is 12 months** from the date of manufacture, provided that the integrity of the package is maintained, and the optimal storage conditions are observed.

Before processing composition of the modifying agent "Kompllen" must be aged for at least 12 hours in the production room or in another room with the same workshop conditions.

The recommended temperature of the melt and modes of processing of the modifying agent "Kompllen" in the temperature range from 95°C to 320°C depending on the type of equipment and polymeric materials.

